

SELF STUDY REPORT FOR RE-ACCREDITATION



M. G. SCIENCE INSTITUTE
(MAFATLAL GAGALBHAI SCIENCE INSTITUTE)
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**SELF STUDY REPORT
FOR
RE-ACCREDITATION
2nd CYCLE**

**SUBMITTED
TO
NATIONAL ASSESSMENT AND
ACCREDITATION COUNCIL
BANGLORE**

**BY
M. G. SCIENCE INSTITUTE
AHMEDABAD**



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SECTION - A

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

M. G. Science Institute with its rich legacy and history has carved its path to eminence through the sheer dynamism of its educators and founding fathers. Hailed as the biggest science college in Gujarat, it has set high standards of education in Science for almost six decades. The institute offers the highest number of degree courses-10 at graduate level and 2 at post graduate level. It is also the biggest science college in terms of students' intake. The lush green campus of M. G. Science Institute is always abuzz with academic activities having more than 1800 students at undergraduate and about 100 at postgraduate level. The institute shares the vision of its most illustrious management- the Ahmedabad Education Society (AES) established under the inspiration of Late Shri Sardar Vallabhbhai Patel, the first Dy. Prime Minister of Independent India, as a part of freedom struggle on the education front.

Established in the land of Mahatma, the Institute has taken the role of a torchbearer spreading scientific temper in a society steeped in superstition and old beliefs for more than six decades. The institute where the legendary scientist Dr. Vikram Sarabhai set up his favorite PRL (Physical Research Laboratory) has become the cradle of science education in the western region of India. M. G. Science Institute has played a pivotal role in the development of pharmaceutical and chemical industries in Gujarat by providing much needed technical manpower in a predominantly trading community. The institute strives to provide high quality science education with a sense of ethics and social responsibilities. Science education with social responsibility is the motto of the institute. Distinguished educators including 31 doctorates, 10 Ph.D. guides, outstanding research library and state-of-the art laboratories have made it a vibrant place for learning. Another note-worthy fact is that two of the faculty members have worked as Vice-Chancellors of different universities in Gujarat.

Conceived originally as an institute of pure science, M. G. Science Institute has leapfrogged into the centre of excellence with a number of UGC sponsored diploma and certificate courses adding an element of applied component to the wide repertoire of the courses offered by it. It was accredited with an A grade (in 2007) and is also recognized by DBT under the Star Colleges Scheme. Many premiere magazines have consistently rated the institute as one of the best colleges in Gujarat and ranked it in the top bracket in India.

M. G. Science Institute has consistently chartered a path towards achieving its vision of 'global education at local cost'. The aim is to produce the graduates who are fit for the present day job market both at national and international level. Keeping in mind the

demands of the market, the institute has made the move towards Vocational and Career Oriented Programmes (COPs) to provide more options to the students. M. G. Science Institute provides academy flexibility by offering various short term and long term certificate vocational and diploma courses along with their B. Sc. / M. Sc. Degree.

The syllabi of these programmes are regularly reviewed and due modifications are done as per requirement. SPSS course launched by the Statistics department has become much sought after as students from even engineering colleges and other universities enroll for this course. The college is also a pioneering institute of Biotechnology in Gujarat. The Biochemistry department runs a vocational program in Biotechnology. The students are sent for training at premier research institute and industries to gain first hand technical experience. M. G. Science is a recognized center of IGNOU which offers B. Sc. Programmes.

Recently Gujarat University has introduced CBCS system and M. G. Science Institute has played a key role in its successful execution as our principal, Dr. B. K. Jain was the member of the core committee. Most of the faculty members are also the members of Boards of Studies at the university which ensures the bigger say of the institute in the design of the syllabus. Although the syllabus is designed by the university, the institute makes every effort to use the present syllabus for all round development of the students. Apart from regular theory and practical classes, the institute offers the opportunities for field trips, study tours, industrial visits, presentations, assignments, quizzing, group projects and academic interactions with the subject experts which supplement the curriculum prescribed by the university. The students are also involved in the research projects carried out by various departments. Students take active participation and interest in the seminars and workshops organized by the institute.

Environment and environmental consciousness is the spirit and the driving force at M.G. Science Institute, which is reflected in its rich biodiversity. Our Institute has a sprawling 19.3 acres campus having some very old & rare plant species, medicinal trees, making it the greenest area of the city. In our effort to develop the green campus, the staff and students have planted more than 500 plants and have been maintaining them. The institute has entered into an MOU with CEE- SAYEN, an international body working for the issues related to environment. The institute has devised the elective paper linked to environmental issues like greenhouse gases, climate change, etc. in the syllabus.

Admission to M. G. Science Institute is a matter of pride to the students. The appeal of M. G. Science Institute in the students' community is gauged from the fact that it receives more than 6000 applications against 480 seats every year for the first year

admission. M. G. Science Institute is a melting pot welcoming students from diverse background and different corners of India. The institute with its 59-fulltime faculty members and numerous other technical staff offers the ideal ambience for learning and research. The process of admission at M.G. Science is transparent and fair as the merit is the only criterion adopted for the admission. The institute painstakingly guarantees both impartiality and fairness admitting students from different strata and diverse sections of society without any bias. There is a provision in our institute for helping students from economically backward sections. Our institute has poor students' funds and if needed the institute waives the fees of economically weak students. The funds for these are also provided by our Alumni Association. Our institution also provides a plenty of opportunities in the form of seminars, NCC / NSS and cultural forums to acquire exposure and life-skills other than the routine syllabus.

The research is at the forefront of all academic activities at the Institute. M. G. Science Institute has a very sound and congenial environment for research in pure and applied sciences. This becomes evident from the fact that almost 60% of faculty members are doctorate, 10% are Ph.D. guides and rest of them are pursuing their Ph. D. degrees. Workshops, seminars, research projects, and hands-on training have dominated the academic scene at the institute. The Institute has a dynamic relationship with prominent research institutes like IPR, SAC, PRL, ISR and ISRO which has helped in the professional development of the faculty. Many of the research projects at the institute are in collaboration with these premiere institutes. The institute has organized around 16 national and state level seminars which have attracted eminent scientists from the different parts of the country on the campus. The research projects to the tune of five crore is an unprecedented achievement of an undergraduate college. It was a tremendous coup for the Geology department of the institute when it garnered a project from GMDC by participating in a competitive bidding process and outrivalled many private agencies in the process. An academic institute competing with private, professional bodies was an event of great uniqueness. This innovative idea created a buzz in the professional circle as an educational institute jumped into a professional arena. Another consultancy project which won rave reviews was the project on "Soil Analysis" offered to the institute by the Govt. of Gujarat. The success of the project can be gauged from the fact that it not only helped the students in getting the exposure of the real life project, but also to the farmers in improving their crop yield and quality. The Microbiology department with its main research area in Mushroom cultivation and Rice Biotechnology has taken a pride of place

the research centers of Gujarat. Research with a social responsibility is a striking feature of the research in Microbiology department.

Research publication is another highlighting feature in which faculty of M.G. Science has delivered an outstanding performance. High numbers of research papers are published in the journals of international repute. Quite a few of them have presented papers in international conferences and many have contributed to the text book writing. The Higher Education Department of Govt. of Gujarat has deployed majority of faculty members for the text book preparation in the wake of new syllabus introduced at the different levels of education.

There is a constant interaction between the industry and the institute. Many of the Alumni members are also industrialists and the institute is successful in establishing links with them. The placement cell is also active in collaborating with the industries. Recently a leading IT company-TCS and Petrochemical giant Reliance conducted the campus interview where our students were hired. There are instances when the industry felt that the syllabus of a particular discipline is not as per the need of the industry, so the institute invited the experts from the industry to orient students about the latest development in the industry. To cite an example, the statistics department established the linkage with TCS, Epoch Research Centre and Pharmastat to make the students aware about the latest trends in the industry. There are workshops organized at the institute where experts from the various disciplines are invited to guide the students regarding the requirement of the industry. SPSS course is developed at the institute at the behest of the industries like TCS and Pharmastat. The outreach programmes of the Institution generate a lot of interest among the students, thus paving the way for their all-round development. The outreach programmes are in tune with the mission and goals of the institution. The programmes include environmental awareness camps, tree-plantation weeks, sports meet, literacy drives, blood donation camps, voluntary services to Blind People's associations, health and hygiene awareness programmes.

NCC and NSS promote the values like altruism, self-less service and environment awareness. By participating in extension activities, students turn out to be socially responsible citizens. The promotion of blood donation at the institute has created a lasting impact among the students' community. All these activities are carried out along with their regular academic studies. It is a sight to behold when the students of the institute enter the slum areas and educate the people about the various killer diseases like AIDS and obesity, diabetes and cancer. They also learn the lessons of environment consciousness by

participating in activities like tree plantation. The students are seen counseling the first year admission aspirants about the different courses available on the campus.

Infrastructure at the institute is its big forte. Large and airy classrooms, well-equipped laboratories, open-air theatre, conference room, assembly hall, computerized library, well-maintained hostel and canteen are some of the feathers in its cap. The library has rich collection of books, journals and magazines. 7 computer laboratories with around 150 terminals could be an envy of any IT company. All the departments possess projectors and internet connection which enable them to deliver the lectures with great felicity. The faculties at the Institute use modern teaching aids like LCD, overhead projectors, video, charts and various scientific models for making the teaching and learning process live and illustrative. Campus interviews and career counseling for the final year students are arranged regularly.

M. G. Science cricket ground is a talk of the town. Some of the leading cricketers of Gujarat have learned their first lessons on this very ground. Some students of M. G. Science Institute are currently playing for Gujarat in Ranji Trophy.

The sterling performance of the students in various university exams is the high mark of success at M. G. science Institute. With amazing regularity the students of M. G. Science Institute bring laurels to the Institute by topping the University exams. The overall result of the Institute is more than 90%, which is far above the average University results.

The institute not only provides excellent science education, but also brings together varied extension activities for all round development of the students. M. G. Science Institute has drafted a road map for the future. The institute further needs to strengthen its network with industries and renowned institutions located in the neighborhood. Although well-known as a research organization, the institute needs to intensify research activities on a bigger scale. This is one of the bigger future challenges for the institute. M. G. Science wants to initiate students' exchange program with other institutes of higher learning in India and abroad as well. We here take a pledge to take the Institute to newer heights of success with the concerted efforts of administrators, faculty members and students.

Dr. B. K. Jain

Principal

M.G. Science Institute, Ahmedabad

SECTION - B

PROFILE OF THE COLLEGE

Profile of College

1. Name and Address of the College:

Name :	Mafatlal Gagalbhai Science Institute (M. G. Science Institute)		
Address :	Dadasaheb Mavlankar Campus, Navrangpura,		
City :	Ahmedabad	Pin : 380009	State : Gujarat
Website :	www.mgscience.ac.in		

2. For Communication:

Designation	Name	Telephone with STD code	Mobile	Fax	Email
Principal	Dr. B. K. Jain	O: 079-26302872 R: 079-23234365	09426024656	079-26302872	bkjain_mgsc@yahoo.com
Vice Principal	Dr. R. D Shah	O: 07926302872 R: 07926932092	09898874111	079-26302872	rdshahmg@yahoo.com
Steering Committee	Dr. R. D. Shah Dr. R.K.Pujara	O: 07926302872 R: 07926856751	09898874111 09824437090	079-26302872	rdshahmg@yahoo.com rkpujara@gmail.com

3. Status of the Institution:

Affiliated College

☐

Constituent College

Any other (specify)

4. Type of Institution:

a. By Gender

i. For Men

ii. For Women

iii. Co-education

☒

b. By Shift

i. Regular

☒

ii. Day

iii. Evening

5. It is a recognized minority institution?

Yes

No

☒

If yes specify the minority status (Religious/linguistic/ any other) and provide documentary evidence.

6. Sources of funding:

Government

Grant-in-aid

☒

Self-financing Any other

7. a. Date of establishment of the college: **15/06/1946**

b. University to which the college is affiliated /or which governs the college (If it is a constituent college): **Gujarat University**

c. Details of UGC recognition:

Under Section	Date, Month & Year	Remarks(If any)
i. 2 (f)		As the institute is 60 years old, the exact date of recognition is not known.
ii. 12 (B)		However a certificate dated 7/12/05, clearly states that the college has been recognized by UGC under 2(f) & 12(B). The institute regularly receives UGC grants under various plans. Pl. refer Annexure I

(Enclose the Certificate of recognition u/s 2 (f) and 12 (B) of the UGC Act)

d. Details of recognition/approval by statutory/regulatory bodies other than UGC (AICTE, NCTE, MCI, DCI, PCI, RCI etc.) **N.A.**

8. Does the affiliating university Act provide for conferment of autonomy (as recognized by the UGC), on its affiliated colleges?

Yes ☐ No ☒

If yes, has the College applied for availing the autonomous status?

Yes ☐ No ☐

9. Is the college recognized

a. by UGC as a College with Potential for Excellence (CPE)?

Yes ☐ No ☒

If yes, date of recognition:

b. for its performance by any other governmental agency?

Yes ☐ No ☒

If yes, Name of the agency

Date of recognition:

10. Location of the campus and area in sq.mts:

Location *	Urban
Campus area in sq. mts.	77861.50 sq. mts. (19.3 acres)
Built up area in sq. mts.	1060 sq.mts.

(* Urban, Semi-urban, Rural, Tribal, Hilly Area, Any others specify)

11. Facilities available on the campus (Tick the available facility and provide numbers or other details at appropriate places) or in case the institute has an agreement with other agencies in using any of the listed facilities provide information on the facilities covered under the agreement.

- Auditorium/seminar complex with infrastructural facilities ✓
- Sports facilities
 - ☐ play ground ✓
 - ☐ swimming pool
 - ☐ gymnasium ✓
- Hostel
 - ☐ Boys' hostel ✓
 - i. Number of hostels: **01**
 - ii. Number of inmates: **45**
 - iii. Facilities : Medical and Food facilities
 - ☐ Girls' hostel ✓
 - i. Number of hostels: **01**
 - ii. Number of inmates: **60**
 - iii. Facilities : Medical and Food facilities
 - ☐ Working women's hostel **NA.**
 - i. Number of inmates
 - ii. Facilities (mention available facilities)
- Residential facilities for teaching and non-teaching staff (give numbers available — cadre wise) **Teaching : No, Non-teaching : 03**
- Cafeteria — **Yes**
- Health centre – Yes (Facilities of Gujarat University are availed)
First aid ✓, Inpatient, Outpatient, Emergency care facility, Ambulance
- Health centre staff – **No**

Qualified doctor	Full time	Part-time
Qualified Nurse	Full time	Part-time
- Facilities like banking, post office, book shops: **No**
- Transport facilities to cater to the needs of students and staff: **No**

N.B.: All the above facilities are available in the vicinity of the institute.

- Animal house: **No**
- Biological waste disposal: **Yes**
- Generator or other facility for management/regulation of electricity and voltage: **No**
- Solid waste management facility: **Yes**
- Waste water management: **Yes**
- Water harvesting: **Yes**

12. Details of programmes offered by the college (Give data for current academic year)

Sr. No.	Programme Level	Name of the Programme/ Course	Duration	Entry Qualification	Medium of instruction	Sanctioned/ approved Student strength	No. of students admitted
1	Under-Graduate	B. Sc.	3 yrs	12 th Pass	English	520	615
2	Post-Graduate	M. Sc.	2 yrs	B. Sc.	English	50	50
3	Integrated Programmes PG	-	-	-	-	-	-
4	M.Phil.	-	-	-	-	-	-
5	Ph.D.	Ph.D. in Microbiology, Geology, Botany, Chemistry	4-5 yrs	M. Sc. / M. Phil	English	18	18
6	Certificate courses	SPSS	2 weeks	B. Sc.	English	-	80
		Biotechnology	3 yrs	12 th Pass	English	-	35
7	UG Diploma	Bioinformatics,	2 yrs	12 th Pass	English	30	15
		Geoinformatics	2 yrs	12 th Pass	English	30	21
		Cheminformatics	2 yrs	12 th Pass	English	30	21
		Embedded System	2 yrs	12 th Pass	English	30	30
8	PG Diploma	-	-	-	-	-	-
9	Any Other (specify and provide details)	SCOPE	3 months	12 th Pass	English	-	100-500

13. Does the college offer self-financed Programmes?

Yes ☒ No ☐

If yes, how many?

14. New programmes introduced in the college during the last five years if any?

Yes ☒ No ☐ Number

15. List the departments: (respond if applicable only and do not list facilities like Library, Physical Education as departments, unless they are also offering academic degree awarding programmes. Similarly, do not list the departments offering common compulsory subjects for all the programmes like English, regional languages etc.)

Faculty	Departments (e.g. Physics, Botany, History etc.)	UG	PG	Research
Science	Physics,	√		
	Chemistry	√	√	√
	Mathematics	√		
	Botany	√		√
	Geology	√	√	√
	Biochemistry	√		
	Statistics	√		
	Microbiology	√		√
	Zoology	√		
	Electronics	√		

16. Number of Programmes offered under (Programme means a degree course like BA, BSc, MA, M.Com...)

a. annual system
b. semester system
c. trimester system

17. Number of Programmes with

a. Choice Based Credit System
b. Inter/Multidisciplinary Approach
c. Any other (specify and provide details)

18. Does the college offer UG and/or PG programmes in Teacher Education?

Yes ☐ No ☒

If yes,

a. Year of Introduction of the programme(s).....
and number of batches that completed the programme

b. NCTE recognition details (if applicable)

Notification No.: **NA**

c. Is the institution opting for assessment and accreditation of Teacher Education Programme separately?

Yes ☐ No ☒

19. Does the college offer UG or PG programme in Physical Education?

Yes ☐ No ☒

If yes,

a. Year of Introduction of the programme(s).....

and number of batches that completed the programme

b. NCTE recognition details (if applicable)

c. Is the institution opting for assessment and accreditation of Physical Education Programme separately?

Yes ☐ No ☐

20. Number of teaching and non-teaching positions in the Institution

Positions	Teaching faculty						Non-teaching staff		Technical staff	
	Professor		Associate Professor		Assistant Professor					
	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
Sanctioned by the UGC / University / State Government <i>Recruited</i>	01 (Prin.)		30	16	10	02	04	01	17	04
<i>Yet to recruit</i>	-	-	-	-	16		22		01	
Sanctioned by the Management/ society or other authorized bodies <i>Recruited</i>	-	-	-	-	05	04	07	---	13	---
<i>Yet to recruit</i>	NA									

***M-Male *F-Female**

21. Qualifications of the teaching staff:

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	01		21	03	02	05	32
M.Phil.	-	-	01	02	01	01	05
PG	-	-	11	07	04	-	22

Temporary teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-
Part-time teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	05	04	09

22. Number of Visiting Faculty /Guest Faculty engaged with the College.

02

23. Furnish the number of the students admitted to the college during the last four academic years.

Categories	2009-10		2010-11		2011-12		2012-13	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	07	21	49	43	73	54	54	38
ST	06	01	118	79	82	86	29	32
OBC	38	64	177	168	214	199	197	150
General	836	813	436	513	412	464	499	694
Others								

24. Details on students enrollment in the college during the current academic year:

Type of students	UG	PG	M. Phil.	Ph.D.	Total
Students from the same state where the college is located	1618	110	-	15	1743
Students from other states of India	80	-	-		80
NRI students	-	-	-	-	-
Foreign students	02	-	-	1	3
Total	1700	110	-	16	1826

25. Dropout rate in UG and PG (average of the last two batches)

UG:

40%

PG:

2%

26. Unit Cost of Education

(Unit cost = total annual recurring expenditure (actual) divided by total number of students enrolled)

(a) including the salary component

Rs. 40,416/-

(b) excluding the salary component

Rs. 2545/-

27. Does the college offer any programme/s in distance education mode (DEP)?

Yes

√

No

If yes,

- a) Is it a registered centre for offering distance education programmes of another University

Yes: ☒ No ☐

- b) Name of the University which has granted such registration.

INDIRA GANDHI NATIONAL OPEN UNIVERSITY

- c) Number of programmes offered: **01 (B.Sc.)**

- d) Programmes carry the recognition of the Distance Education Council.

Yes ☒ No ☐

28. Provide Teacher-student ratio for each of the programme/course offered: 1:25

29. Is the college applying for

Accreditation : Cycle 1 ☐ Cycle 2 ☒ Cycle 3 ☐ Cycle 4 ☐

Re-Assessment: ☐

(Cycle 1 refers to first accreditation and Cycle 2, Cycle 3 and Cycle 4 refers to re- accreditation)

30. Date of accreditation* (applicable for Cycle 2, Cycle 3, Cycle 4 and re-assessment only)

Cycle 1: **10 / 02/2007** Accreditation Outcome/Result: **“A” Level**

** Kindly enclose copy of accreditation certificate(s) and peer team report(s) as an annexure.*

31. Number of working days during the last academic year. **206**

32. Number of teaching days during the last academic year **192**

(Teaching days means days on which lectures were engaged excluding the examination days)

33. Date of establishment of Internal Quality Assurance Cell (IQAC)

IQAC 15/10/2011

34. Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC:

AQAR (i) **22/10/2011**

AQAR (ii) **24/09/2012**

AQAR(iii) **08/07/2013**

AQAR (iv) **08/07/2013**

35. Any other relevant data (not covered above) the college would like to include. (Do not include explanatory/descriptive information)

SECTION - C

CRITERION WISE ANALYSIS

CRITERION - I
CURRICULAR ASPECTS

CRITERION I: CURRICULAR ASPECTS

1.1 Curriculum Planning and Implementation

1.1.1 State the vision, mission and objectives of the institution, and describe how these are communicated to the students, teachers, staff and other stakeholders.

MISSION : M.G. Science Institute is committed to impart holistic knowledge in basic, pure and applied sciences with interdisciplinary approach to students from all sections of society. We shall instill high level of moral values and scientific skills in our students, so that they become enlightened individuals and improve the living standards all around. Our special endeavor will be to develop our institute as a “Centre of Excellence” in teaching, research and service in the field of science.

The avowed objective of the institute is to provide students with high quality science education while developing in them a sense of ethics and social responsibility. Although, courses are technical in nature, still there is scope for inculcating core values, and to do so, the institute strives to integrate its broad vision in the curricula by arriving at the judicious amalgamation of academic and non- academic activities. The academic activity at the institute aims at promoting excellence in learning, which is reflected in the sterling performance of the students in various university examinations. This is only the partial fulfillment of our mission. But when we find our students participating with gusto in extra-curricular activities like youth festivals, blood donation camps, community services, tribal welfare, relief camps, literacy drives, research projects, environmental activities, we feel elated and realize that we have taken yet another step towards fulfilling our mission of promoting learning for the benefit of community.

VISION: We, at the M. G. Science Institute envisage building a progressive learning community with scientific aptitude. We set global standards to make our students scientifically and ethically stronger, and they, in turn, will serve the nation and the human society to improve the quality of life.

GOALS AND OBJECTIVES

- To inculcate in our students a high-level of self-discipline and dignity.
- To impart academic integrity among faculty and students.
- To introduce science and scientific development as an integrated aspect of the culture and tradition of our motherland.

- To provide the best education in science and prepare the students for challenging jobs.
- To provide equal opportunities and access to all, regardless of caste, creed, region, religion, gender, language and social background.

The goals and objectives are very clearly spelt out in the prospectus and website of the institute. Main points of these are written prominently at the entrance of the institute. Also in the introductory lectures to the first year students, the goals and objectives are clearly spelled and communicated.

1.1.2 How does the institution develop and deploy action plans for effective implementation of the curriculum? Give details of the process and substantiate through specific example(s).

- At the beginning of the year the meeting of the heads of various departments is convened to charter a plan for the successful and timely implementation of the curriculum sent by the university. The Heads of the departments discuss and deliberate with the staff members of the respective departments and chalk out the plan to distribute the workload keeping in mind the expertise and experience of the faculty member.
- A right balance is created between teaching and extracurricular activities to reflect mission and goal in the curricula. Special care is taken that, the happenings on the campus reflect mission and goal directly or otherwise. The method of teaching, the choice of extracurricular activities and the behavior of teachers reflect this purpose. The students, apart from regular subjects learn regularity, punctuality, discipline, care etc. from their experiences on the campus.
- On the basis of feedback received from previous year students and various stakeholders, the Institute deploys action plan to strengthen the teaching learning process.
- The heads of the department make an attempt to ensure that courses are completed in time and extra lectures are arranged if needed. Remedial classes are also conducted for OBC, SC, ST and other academically poor students.
- Bright students are paid special attention. They are encouraged and motivated to deliver seminars, to participate in competitions at various levels. They are also motivated for research activities conducted in various departments and are assigned small projects which they successfully carry out under the guidance of respective

teachers. Toppers in various subjects are given endowment scholarship.

- Different teaching methods like use of LCD projectors, ICT, etc. are applied in the classroom.
- Extracurricular activities like oratory, leadership, calculative skills, competitiveness, etc. are given due priority.

1.1.3 What type of support (procedural and practical) do the teachers receive (from the University and/or institution) for effectively translating the curriculum and improving teaching practices?

- Our institute is affiliated to Gujarat University. The curricula, both, at undergraduate and postgraduate (Chemistry and Geology) level are defined by the University.
- The curriculum is implemented as per the academic calendar provided by the varsity. Based on the university academic calendar, our College designs its own, where start and end dates of the semester are specifically spelled out. It also makes provision for mid semester examination and other academic activities. This helps in proper planning of teaching so as to complete it within specified time frame.
- For implementation of revised syllabi, faculty members are briefed both at departmental and College level.
- For newly introduced theory topics as well as practical, special sessions are arranged for faculty members to provide them with proper orientation and guidance.
- Faculty members are encouraged to attend faculty development/enhancement programmes, Quality improvement programmes, industrial visits, orientation and refresher courses organized by Universities, research institutes and other agencies.
- All departments are equipped with modern teaching aids including LCD projector. Computers with internet connection are accessible to all faculty members that results in continuous improvement.
- Our library is constantly upgraded with new books as well as new editions of the standard reference books in all subjects. Many academic CDs and DVDs are available in the library which strengthens the teaching learning activities.

1.1.4 Specify the initiatives taken up or contribution made by the institution for effective curriculum delivery and transaction on the Curriculum provided by the affiliating University or other Statutory agency.

- The various facets of curriculum are taken into account in the discussion among the students as well as staff members.

- For the successful transaction of the curriculum, text books and reference books are spotted, identified and made available to the students.
- The syllabus of various subjects is uploaded on the institute website for the easy access of the students.
- The syllabus of various disciplines are put up on the notice boards and faculty members effectively give justice to the contents of the syllabus in the regular class room teaching using various modern pedagogy.
- Departmental meetings are held to review the status of the syllabus taught in various classes.
- Some teachers practice continuous mode of assessment by asking short questions, giving assignments, organizing quizzes and holding weekly tests.

1.1.5 How does the institution network and interact with beneficiaries such as industry, research bodies and the university in effective operationalisation of the curriculum?

Many of our Alumni students are absorbed at higher posts in several Pharmaceutical industries and research institutes. We often invite these industrial experts to deliver lectures, so that students can be made aware about the practical aspects of studies. Healthy interaction with them proves very fruitful to both, students and faculty. This helps in knowing the current trends in the field. It establishes a link between academia and industries. This is the indicative list of the experts invited to deliver lectures on our campus.

Name Speaker	Date	Topic	Department
Dr. Vijay Chauthiwala	5/8/2008	Lecture on: The intellectual property rights	Microbiology
Mr. John J. George	21/11/2009	Bioinformatics- the emerging field	Microbiology
Dr. Charu Gautam	21/11/2009	Bioinformatics: Clinical applications.	Microbiology
Mr. Hitesh Patel	2/2/2012	Lecture on: Basis of cell culture	Microbiology
Dr. M.C. Sharma	31/8/2012	Biofuels	Microbiology
Dr. B.V. Patel	8/9/2012	Implementation of CBCS, Semester system and course designing at U.G. level, Basic Microbiology	Microbiology
Dr. V. N. Upasani	25/9/2012	Bioinformatics: Introduction and applications	Microbiology
Prof. Dr. J.B. Prajapati	11/5/2013	Lecture on: Probiotics	Microbiology
Dr. Shilin Shukla	11/1/2013	Life style: Killer or Savior (causes and prevention of cancer)	Microbiology
Dr. Ajit Menon	24/8/2013	Role of microbiologists in Pharma	Microbiology
Dr. Nita Shrivastava	4/3/2010	Plant tissue culture – Techniques and Applications/ PERD, Ahmedabad	Botany

Dr. Hamita Motiwala Dr. Bhashwati Chatterji and Dr. Unnati Patel	6/2/2010	Animal tissue culture/ Staff of INTAS Biopharmaceuticals	Zoology
Dr. Sonali Baxi	27/8/2011	Scope of Cytogenetics in clinical lab/Assistant Prof. Nirma University	Zoology
Dr Amit Thaker	5/07/2013	Epigenomics	Biochemistry
D. U. Vyas	7/3/2010	Mining and Exploration Geology	Geology

1.1.6 What are the contributions of the institution and/or its staff members to the development of the curriculum by the University? (number of staff members/ departments represented on the Board of Studies, student feedback, teacher feedback, stakeholder feedback provided, specific suggestions etc.

Many of our faculties are members of Board of studies of Gujarat University.

They contribute to initial framing of syllabus with inputs from their staff members and feedbacks received from the industry.

No.	Name of the Faculty Member	Department
1	Dr B.K. Jain	Botany
2	Mrs B R Hathi	Statistics
3	Dr R K Pujara	English
4	Dr S N Zala	Chemistry
5	Dr J J Vora	Chemistry
6	Dr A M Shukla	Botany
7	Dr H V Pandya	Biochemistry
8	Mr H H Rathod	Electronics/Physics
9	Mrs. P G Joshi	Zoology
10	Dr S G Yadav	Mathematics
11	Mr B M Patel	Mathematics
12	Dr R D Shah	Geology
13	Dr N Y Bhatt	Geology
14	Dr A N Rafique (retired in June 2012)	Microbiology
15	Dr. N.R. Modi	Botany

Our faculty members are also members of Board of Studies at other Universities.

No.	Faculty	Department	Name of the University
1	Dr. B. K. Jain	Biosciences	Ganpat University
2	Mrs. S P Pandya	Microbiology	Kachchha University
3	Dr. N R Goyal	Microbiology	Kadi Sarva Vidyalaya
4	Mr. H H Rathod	Physics	IITE
5	Dr. S G Yadav	Mathematics	KSKV Kachchh University, Bhuj.
6	Dr. R. D. Shah	Geology	Ganpat University
7	Dr. Alpana Shukla	Botany	KSKV Kachchh University, Bhuj.

1.1.7 Does the institution develop curriculum for any of the courses offered (other than those under the purview of the affiliating university) by it? If 'yes', give details on the process ('Needs Assessment', design, development and planning) and the courses for which the curriculum has been developed.

We have introduced different career oriented programmes in various disciplines and we have developed curricula for these programmes as it does not come under the purview of the university. These programmes are designed keeping in mind the demands of the industry with the hope that it will equip the students for the future jobs of the industry. The syllabi of these programmes are regularly reviewed and due modifications are done as per requirement.

The details are as follows:

Sr. No.	Course	Objective
1	Bioinformatics	To make students competent to store, retrieve, analyze and derive data from data bases using Bioinformatics tools. To give students an edge over others when applying for jobs in Pharma and IT companies
2	Chemo-informatics	To create awareness among students regarding chemical data base systems, computer assisted structure elucidation systems, computer assisted synthesis and drug designing and 3D structure
3	Geo-informatics	To provide conceptual knowledge on GIS, remote sensing and related fields and hands on training in GIS, Remote sensing data interpretation, Digital Photogrammetry, digital Cartography and GPS
4	Biotechnology	To enhance the practical skills and understanding the applications of Biotechnology To equip the students for the emerging markets of bio-techniques To create awareness towards research in Biological Science
5	SCOPE	To train students in English (Spoken & Written) To improve communication skills To improve efficiency in reading Students can meet the growing demands of the language Globally.
6	Embedded System	To impart hi-tech professional training to students to make them industry compatible by enhancing their practical knowledge in the field of Embedded system
7	SPSS	To impart training in business analytics To make the students aware about the latest software in statistics

Apart from these; curricula for the following elective courses offered in regular syllabus for two credit points in all the semesters- 1 to 4 are being framed at College level.

Semester	Titles/Subject
I	Biodiversity
II	Environmental Science
III	Public Health
IV	Bioinformatics & Biostatistics/Microbiology
IV	Analytical Techniques in Biochemistry/Biochemistry
IV	Applied Industrial Chemistry/Chemistry
IV	Poultry Science/Zoology
IV	Research methodologies/Statistics
IV	Physical Geology/Geology
IV	Research methodology/Mathematics
IV	Consumer Electronics/Physics & Electronics

1.1.8 How does institution analyze/ensure that the stated objectives of curriculum are achieved in the course of implementation?

To determine that the syllabus is implemented effectively following steps are taken:

- Feedback from students are taken at the end of the year
- Completed topics of syllabus are displayed on notice board especially prior to exams.
- Regular class tests and mid semester tests are conducted. The result reflects the effective implementation of curriculum.
- Question papers of University examination are discussed with concerned faculty for any improvement if required.
- Heads of the departments ensure completion of syllabus by informal discussion with staff members.
- Assignments are given to the students based on the important aspects of the syllabus to ascertain whether the students have thoroughly grasped the subject matter or not.

1.2 Academic Flexibility

1.2.1 Specifying the goals and objectives give details of the certificate/diploma/skill development courses etc., offered by the institution.

We offer following courses for the all round development of the students which in a way provide the academic flexibility to learners:

No.	Course	Objective
1	Bioinformatics	To make students competent to store, retrieve, analyze and derive data from data bases using Bioinformatics tools. To give students an edge over others when applying for jobs in Pharma and IT companies
2	Chem-informatics	To create awareness among students regarding chemical data base systems, computer assisted structure elucidation systems, computer assisted synthesis and drug designing and 3D structure

3	Geo-informatics	To provide conceptual knowledge on GIS, remote sensing and related fields and hands on training in GIS, Remote sensing data interpretation, Digital Photogrammetry, Digital Cartography and GPS
4	Biotechnology	To enhance the practical skills and understanding the applications of Biotechnology To equip the students for the emerging markets of biotechniques To create awareness towards research in Biological Science
5	SCOPE	To train students in English (Spoken & Written) To improve communication skills To improve efficiency in reading Students can meet the growing demands of the language Globally.
6	Embedded system	To impart hi tech professional training to students to make them industry compatible by enhancing their practical knowledge in the field of Embedded system

1.2.2 Does the institution offer programmes that facilitate twinning/dual degree? If 'yes', give details.

M. G. Science Institute provides academy flexibility by offering the various short term and long term certificate and diploma course along with their B. Sc. / M. Sc. Degree.

The short term courses include certificate course in SPSS while long term courses include Cheminformatics, Geoinformatics, Bioinformatics and embedded system.

1.2.3 Give details on the various institutional provisions with reference to academic flexibility and how it has been helpful to students in terms of skills development, academic mobility, progression to higher studies and improved potential for employability. Issues may cover the following and beyond:

Range of Core / Elective options offered by the University and those opted by the college:

Our College offers undergraduate degree in Biochemistry, Botany, Chemistry, Electronics, Geology, Mathematics, Microbiology, Physics, Statistics and Zoology as well as Postgraduate degree in Chemistry and Geology in order to provide academic flexibility and wide choice to students.

Choice Based Credit System and range of subject options:

12th Std. with MATHS are offered following groups:

SEM - I / II	SEM - III / IV	SEM - V / VI
PHY/MATHS/CHEM	CHEM/PHY PHY/MATHS MATHS/PHY	CHEMISTRY PHYSICS MATHEMATICS
PHY/MATHS/STAT	MATHS/STAT STAT/MATHS	MATHEMATICS STATISTICS
PHY/ELE/CHEM	ELE/PHY	ELECTRONICS

12th Students with BIOLOGY are offered following groups:

SEM - I / II	SEM - III / IV	SEM - V / VI
MICRO / ZOO / CHEM	MICRO/CHEM ZOO/MICRO	MICRO ZOOLOGY
BOT / ZOO / CHEM	CHEM/BOT CHEM/ZOO	CHEM BOT ZOO
BIOCHEM / BOT / CHEM	BIOCHEM/CHEM BOT/BIOCHEM	BIOCHEMISTRY BOTANY

12th Students with BIOLOGY or MATHS are offered following group:

SEM - I / II	SEM - III / IV	SEM - V / VI
PHY / GEO / CHEM	GEO/CHEM CHEM/GEO	GEO CHEM
PHY / CHEM / BOT	CHEM/PHY	CHEM PHY

Courses offered in modular form:

The Institute has opted for all the combinations offered under CBCS for science along with elective & foundation courses. These courses have modular elements and students are given choices according to their interest and merit.

Credit transfer and accumulation facility:

Credit transfer and accumulation facility are available in elective courses to the students who enrolled for that particular course at different venues.

Lateral and vertical mobility within and across programmes and courses?

Lateral and vertical mobility is possible to a limited extent to the students who want to make minor changes in their groups. The genuine students are allowed to change groups bringing a change in their principal subject. A committee headed by the principal very cautiously does this, taking lot of other factors in consideration. For example: in B.Sc. Sem - III a student is in PM (physics-mathematics) group, meaning that in third year he will be admitted to the Physics group. But during the second year

study, he discovers that he is better at mathematics or has a better future in mathematics, the committee meant for this purpose goes through these kinds of applications and decides as need be. And the student is allowed to change the subject.

Enrichment courses :

The courses have been designed in such a way that they offer ample opportunities for skill development, higher studies and improve employability in the market. The enrichment courses like Bioinformatics, Chem-informatics, Geo-informatics, Biotechnology, Embedded system, and SPSS equip students with extra knowledge and give them an edge in the job market.

1.2.4 Does the institution offer self-financed programmes? If ‘yes’, list them and indicate how they differ from other programmes, with reference to admission, curriculum, fee structure, teacher qualification, salary etc.

The College offers 4 self-financed diploma courses in COP and 1 Certificate course under DBT. These courses began with the seed money given by the UGC. These courses are recognized by the UGC and approved by Gujarat University. The duration is two years. The classes are engaged outside the regular working hours on week days. In-house faculty, faculty from neighboring colleges and experts in the chosen subjects are invited to conduct classes. These courses increase the employability of a student. For example SPSS programme offered by statistics department prepares the students in the field of business analytics which is in great demand in the industries.

The students are admitted in these courses based on merit after the students confirm the admission in the first semester. There is limited number of seats available in these courses, and as per availability of the seats, students are admitted.

Course	Fee Structure	Teacher's Qualification	Salary	Student's Intake
Vocational Biotechnology	Rs 4000 per semester	Post Graduation with BMTC	Rs 8000/- per month	35/Semester
Bioinformatics	Rs 4000 per semester	M. Sc. Ph.D. and M. Tech	Remuneration & conveyance is paid on lecture basis	30
Chem-informatics				
Geo-informatics				
Embedded system				

PASW SPSS-18 (Statistical Package for Social Sciences)	Rs 2000 to 3000 per Course	M. Sc. Ph.D.	Remuneration & conveyance is paid on lecture basis	20
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The syllabi are designed by the concerned departments and are also reviewed by the experts from the industry. The syllabi are then sent for approval to the university. After getting the formal approval from the university, the syllabi are implemented by the departments.

1.2.5 Does the college provide additional skill oriented programmes, relevant to regional and global employment markets? If ‘yes’ provide details of such programme and the beneficiaries.

Besides the above mentioned COP Programmes, the institute runs SPSS programme in statistics department which is relevant to the present day demand of business analytics. The students and faculty members from university departments and engineering colleges enroll for this course for the value addition. The following is the data about the participants at SPSS course run by the Statistics Department of the institute:

Batch		MG	Other than MG	Total participants
1	2011	17		17
2		11		11
3		11		11
4	05-04-2012 to 13-04-2012	6	6	12
5	4-06-2012 to 14-06-2012	12	3	15
6	22-04-2013 to 27-04-2013	11	3	14
		Student other college	Faculty	
7	6-03-2013 to 8-03-2013	2	4	6

1.2.6 Does the University provide for the flexibility of combining the conventional face-to-face and Distance Mode of Education for students to choose the courses/combination of their choice” If ‘yes’, how does the institution take advantage of such provision for the benefit of students?

Though we do not provide flexibility of combining the conventional face-to-face and Distance Mode of Education, M. G. Science is a recognized center of IGNOU which offers B. Sc. Programme.

1.3 Curriculum Enrichment

1.3.1 Describe the efforts made by the institution to supplement the University's Curriculum to ensure that the academic programmes and Institution's goals and objectives are integrated?

Apart from regular theory and practical classes, the institute offers the opportunities for field trips, study tours, industrial visits, and academic interactions with the subject experts which supplement the curriculum prescribed by the university. The students are also involved in the research projects carried out by various departments. For example, students of M. Sc. Geology were assigned the work of map preparation and geological fieldwork in GMDC sponsored project. In microbiology department students are trained for mushroom cultivation and this skill is later on transferred to the farmers. There are seminars and workshops organized by the institute where students take active participation. They are the part of organizing committee as well as poster and oral participants. They also get the opportunities to interact with the subject experts. The students of the institute participate in various workshops and seminars organized under the aegis of DBT which help them to expand their horizon beyond the syllabus prescribed by the university.

The following is the list of various academic activities which enriched the students' learning experiences at the college. Here is an indicative list of student-centred training programmes conducted at the Institute.

Sr. No.	Activity	Date	No. of Students benefited
1.	Callus generation from leaves of <i>Taebnemontana</i>	Sept. 2010 to Jan.2011	18
2.	Training in Media preparation	August, 2010	18
3.	Training in sterilization techniques	September, 2010	18
4.	<i>In vitro</i> regeneration of <i>Solanum tuberosum</i> ,L.	Sept. 2011 to Jan.2012	11
5.	Training in Media preparation	August, 2011	11
6.	Training in sterilization techniques	September, 2011	11
7.	Outreach Programme on PTC for School students	29-11-'11	19 (with one faculty)
8.	Workshop on Basic PTC for school students	8-12-11	20+1
9.	Workshop on Basic PTC for school students	27-1-12	20+2
10	Visit to PTC Unit at Mogar, Anand on,	28 March 2012	50 students + 3 faculty.
11	A project by TY B Sc students on callus culture of <i>Tabernaemontana coronaria</i> (Chandni plant leaves),	Feb. – March 2011.	About 20

12	Workshop on “Introduction to MATLAB”, by Mathematics dept.	6 Jan. 2011	38
13	Students training programme in Bioinformatics	29 Oct. 2010	30
14	Hands on training programme on: “Immunodiffusion Techniques & Plasmid DNA isolation Participants:	8 th & 9 th Feb. 2011	33
15	Molecular Biology Workshop organized by Department of Biosciences, Ganpat University, Kherva		3
16	Training on “Biofertilizers production” for 5 days at Shree Biocare Research Ltd., Ahmedabad.	5 days	5
17	A workshop on “Mangroves” organized by Dept. of Environmental Sciences, Kutch University.		2
18	Three training programmes in PASW SPSS-18 for 44 by Statistics dept.	17 th to 27 th Jan, 2012	44
19	Abhijit Vidyavihar, Memnagar, Ahmedabad (Higher secondary students) Workshop on “Basic knowledge Animal Cell Culture”	25 th Nov. 2011	15
20	The H. B. Kapadiya New High School, Memnagar Ahmedabad (Higher Secondary students.) Workshop on “Basic knowledge Animal Cell Culture”	29 th & 30 th Nov. 2011	18 x 3 = 54
21	M.G. Science Institute (S. Y. B. Sc students). Hands on training in media filtration, Centrifugation & pH Meter	4 th Jan 2012	12
22	M. G. Science Institute (T. Y. B. Sc. students) Hands on training in media filtration, Centrifugation & pH Meter	6 th & 7 th Jan. 2012	10 + 9 = 19
23	Gujarat Arts & Science College, Ahmedabad (F. Y. B. Sc. students) Workshop on “Basic Techniques in the Animal Tissue Culture “ Hands on training in Centrifugation, Autoclave machine, Laminar air flow & pH Meter.	22 nd to 24 th Feb.2012	10 x 3 = 30
24	M.G. Science Institute (F. Y. B. Sc. Students) A workshop on Centrifugation & Cell Counting by Haemocytometer	21 st to 23 rd & 26 th Mar.2012	11 x 4 = 44
25	“Isolation of Genomic DNA from <i>E. coli</i> and Agarose Gel Electrophoresis” for students from Ganpat University Kherva, Postgraduate Center of Gujarat University and from our own Institute participated in it	16 th 18 th Jan - 2013	35
26	A training programme for JNU M. Sc. (Biotechnology) Entrance test preparation organized at St. Xavier’s College, Ahmedabad.		15
27	Molecular Biology Workshop organized by Department of Biosciences, Ganpat University, Kherva.	10 th to 12 th Oct - 2012	4

1.3.2 What are the efforts made by the institution to enrich and organize the curriculum to enhance the experiences of the students so as to cope with the needs of the dynamic employment market?

Although the Institute has little control over the syllabus design, it makes every effort to use the present syllabus for the all round development of the students. Different departments send the students for the study tours. They also participate in seminars and workshops organized by the Institute as well as by the universities and colleges.

The Institute has organized 14 national/ state level seminars and 28 workshops in different subjects. Students are actively involved in the management of the seminars and workshops. During such workshops, the students are given hands-on training in disciplines like molecular biology, biotechnology and genetics. Their active participation in research activities enhances their learning experience. We have sent scores of our students for technical training at various universities to improve their knowledge and skills. Here is a list of student participation in the workshops outside the campus.

SR. NO.	INSTITUTE VISITED	DETAILS OF PROGRAMME	NO OF STUDENTS
1	Ganpat university, Kherva	Isolation of Genomic DNA	35
2	St. Xavier's College, Ahmedabad	JNU M. Sc. Biotech Entrance Examination Training	15
3	Ganpat university, Kherva	Molecular Biology Workshop	04
4	Agricultural University, Anand	Plant Tissue Culture Techniques	50
5	Apollo Hospital	Stem Cell Culture Laboratory	10
6	Ganpat university, Kherva	Molecular Biology Workshop	03
7	Shri Biocare Research Ltd., Ahmedabad	Biofertilisers Productions	05
8	Katchch University	Workshop on Mangroves	02

Students' involvement in extra-curricular activities also intensify their learning experience. The students also have taken part in debating, quiz competitions, essay writing competition and other performing arts which ensure their personality development. All these activities conducted in the college prepare the students for their future development.

1.3.3 Enumerate the efforts made by the institution to integrate the cross cutting issues such as Gender, Climate Change, Environmental Education, Human Rights, ICT etc., into the curriculum?

Gender

In order to sensitize the academic fraternity as well as students to the growing issues of women, several activities are being carried out on regular basis.

Under the aegis of CWDC; seminars, in house orientations, workshops and poster competitions are organized in our institute and our students are encouraged to participate in essay and drama competitions organized by other Colleges also. The aim is to make female students more confident about their power and joy of being a complete modern woman.

The convener and both co conveners of CWDC are registered as life members of the national body, WILPF.

The Following is the activities of the CWDC in our college.

Date	Event	No. of Participants
6-8-2009	<u>Ecofeminism</u> in International Conference on Environmental issues in emerging and advanced Economics	02
5/10/2010	An orientation program at Shree Narayan College of Commerce, organized by WILPF	04
29/6/2011	A Panel discussion on ‘A Woman an enemy of Women’ at H.K Arts College, Ahmedabad	06
15/9/2011	Academic Session on Research options for WILPFers in Gujarat	02
5/9/2012	Inter-college poetry competition on topic of ‘Ma’ by Smt. S.R. Mehta Arts College. Attended an Intra college seminar on Role of Women in Society.	02
Aug 2012	An eminent gynecologists from Apollo Hospital delivered an important lecture on ‘Health issues in Women with reference to Breast and Cervical Cancer in Women’.	50
3/3/2012	Two day State level Seminar at Gujarat Vidhyapith on ‘Women Empowerment’.	03
25/1/2012	Workshop along with students on ‘Gender Inclusivity’ by H. L. Institute of Commerce	02
7/10/2013	A seminar conducted by Nikita Ahuja, Spokesperson of Police and Women Cell, CID crime branch, Gandhinagar on Security of the Society and Self Protection.	60
5/9/2013	An interactive session and group discussion to orient the new students on CWDC activities	70
2/2/2013	State level Seminar on Violence against Women at M.P. Arts and M.H Commerce College.	05
19/1/2013	Poster Competition ‘Violence against Women’ M.P Arts and M.H. Commerce college for women.	02
11/1/2013	One day seminar on social problems of women with respect to Delhi Gang Rape Case at Smt. Sushilaben Ramniklal Mehta Arts College, Ahmedabad.	02

- The students had performed a skit on ‘Delhi gang rape’ to create awareness.
- Three female students attended state level seminar on “Violence against women” at M. P. Arts and M. H. Commerce College for women on 2nd February 2013.
- The students had organized a rally on “Save the girl child” on 5/9/2012.

Climate Change, Environmental Education

The institute organizes the environment related programmes and seminars. As a part of environment conservation, semester II students are being taught basics of Environmental Science as one of their Elective courses. Activities like tree plantation,

tree maintenance and cleanliness drives are organized regularly. To mention a few:

- A seminar was organized on “Challenges in Climate Research” supported by ICCSIR, Ahmedabad on 5/1/2013.
- A group of students actively participated in biodegradation of solid waste in collaboration with AMC (Ahmedabad Municipal Corporation) under the leadership and guidance of Dr. M. D. Shukla and Dr H V Pandya. They did this project for Shivanand Ashram, Ahmedabad during 2012-2013.
- A group of students worked for waste water treatment for Cadila Zydus using microbes successfully under the guidance of Dr. M. D. Shukla during 2011-2012
- During teachers’ day celebration (September 2013) students of Zoology department created a model highlighting the difference in the level of pollution between forest and city.

Here is a summary of environmental related efforts made by the Institute.

- Students are motivated to plant trees and herbs as well as adopt them to take care.
- Awareness about solid waste disposal
- Classroom and campus cleanliness
- Looking after birds and saving them during kite flying
- Study of flora of the campus
- Talks and popular lectures by Dr. Pranav Trivedi, Dr. Indra Gadhvi,
- State level seminar on Environmental Education and Disaster Mgmt
- State level seminar on Biodiversity Knowledge sharing
- Entered into MoU with CEE- SAYEN to raise awareness towards sustainable environment
- Film show to raise awareness on environment i) Al Gore’s “An Inconvenient Truth”
- Climate Change documentaries from British Library were shown
- Inclusion of environment related topics like greenhouse gases, climate change, etc. in the syllabi

ICT

- The institute has established well equipped computer laboratories in Mathematics, Statistics, Physics, chemistry and COP Courses and IMF programme with broadband internet facility. The Institute has more than 120 computers with internet facilities which give ample opportunities to the students to access the latest technology.

- The institute has licensed versions of MatLab and PASW software in Mathematics and Statistics Department respectively. The Geology Department possesses software like Acr-GIS, Datamine, Rockworks and Geo-media Professional.
- All the departments are equipped with computers and net facility for both teachers and students.
- Departments of Biochemistry, Microbiology and Physics are Wi Fi enabled
- OHP and LCD facility are available with all the Departments
- Department of Botany, Microbiology, Zoology and Theatre 5 is equipped with LCD projector
- All faculty members have got access to e- journal through INFLIBNET
- Students can avail DVDs of Subject Experts' lectures prepared by SANDHAN – BISAG
- VISUALIZER facility is also available in the institute to promote teaching learning amongst students and faculty.
- Students can see the live classes delivered by the professors on BISAG and they can also interact with the subject experts during the live session.
- The institute has organized various seminars and workshops to train students and staff members in the use of computers.
- The statistics Department has trained more than 85 students and faculty members under the workshop entitled 'Introduction to PASW'.
- One day workshop on 5th March was arranged to train the non-teaching staff on computer software.

1.3.4 What are the various value-added courses / enrichment programmes offered to ensure holistic development of students?

The Institute arranges various workshops and talks on a variety of life skills and career opportunities. The students themselves take the responsibilities to arrange various programmes on the campus which give them the opportunities to develop their creativity and self-dependence. M.G. Science college magazine is a classic example of their independent creation.



The students were encouraged and trained to appear in BULATS –an international English exam conducted by Cambridge University. The Institute runs 5 diploma and one certificate course to augment the employability of the students. The students of the Institute under the aegis of ‘Chirngeev Project’ took the responsibility to teach the children of Class four employees of the Ahmedabad Education Society free of cost and this noble gesture was taken

note by the media in particular and public in general. Blood donation camps in collaboration with the Red Cross have been a regular feature of the Institute. Approximately 110 bottles of blood has been collected every year.

Moral and ethical values

The institute is committed to social justice and ensures equity and uniform access to quality education. We organize various popular lectures through which several values can be inculcated.

- We had invited Dr M I Patel who delivered a lecture on: “Brahmmvisfot thi Bombvisfot ni Anant Yatra
- Dr. S. G. Yadav, the vice chancellor, Kachhch University delivered a lecture on “India on boil” during Flag hosting at M. G. Science Institute, Ahmedabad. 15th Aug 2011
- Dr. Bhagyesh Zha (Secretary sports, youth services and cultural development, Gujarat Government) delivered a lecture on the problems and opportunities to the youth in Gujarat.

- Dr. Harshad Shah (Vice Chancellor, Children University, Gandhinagar) gave a lecture on the issues related to the development of children.
- Dr. Jagruti Patel delivered a lecture on the women empowerment under CWDC.
- Gurubhagwant sri Nirmoh Sundar Swami and Dherya Sundar Swami presented a discourse on ABCD for success for the college students on 3rd January 2014.

Employable and life skills and Better career options

Several Career oriented programmes have been introduced with a view to inducing skill based learning among students and to provide that extra edge for better career options. The programmes have been successful in improving the employability of the students. These add-on courses like Bioinformatics, Chem-informatics, Geo-informatics, Biotechnology, Embedded system, and SPSS course received tremendous response from the students and were an excellent value-addition for them.

For better career options we are providing hands on training in different techniques which are industrially important like PCR, DNA isolation, SPSS, Plant tissue culture.

Community orientation

- The College runs remedial courses for the benefit of SC/ST and OBC students free of cost.
- Our students' union is very active and they carry out relief activities at the time of natural calamities.
- Also one day is kept as donation day/compassion day/giving day during DAY'S CELEBRATION by students. Many items like clothes, stationery, books and toys are collected from College students and distributed to the children of slum area.
- Blood donation camps are organized every year with the support of Red Cross Society.
- VISA club of our College organized a health awareness camp, financially assisted by UGC adjoining NID slum area. 50 persons were tested for diabetes and blood pressure.
- The Institute also organized a Health Check-up and Thalessemia testing with the support of Red Cross for about 750 students of F. Y. B Sc. in January 2013
- Zoology department organized a camp for "Detection of Abnormalities in Human Karyotype" with the help of Gujarat Cancer Research Institute.

1.3.4 Citing a few examples enumerate on the extent of use of the feedback from stakeholders in enriching the curriculum?

As the Institute is affiliated with Gujarat University our faculty members who are part of Board of Studies of the respective subjects can make their suggestions to improve the current syllabus during its upgradation meet. We do not have any mechanism to ensure the inclusion of these suggestions in the curriculum.

1.3.5 How does the institution monitor and evaluate the quality of its enrichment programmes?

The College has formed an “Internal Quality Assurance Cell” (IQAC) as per the guidelines of NAAC- UGC. Members of the IQAC and various Heads of the Department regularly meet and sort out quality issues. The aim of this cell is to make all round improvement in the quality of education as per the suggestions of previous NAAC peer team report. The meeting of IQAC is held regularly wherein all the concerned issues regarding quality improvement are discussed and plausible solutions are found. The annual report of the Institute’s effort of quality improvement and the outcomes on all aspects of education is being sent to NAAC- UGC as Annual Quality Assessment Report (AQAR).

1.4 Feedback System

1.4.1 What are the contributions of the institution in the design and development of the curriculum prepared by the University?

Many of our faculties are members of Board of studies of Gujarat University. They contribute in initial framing of syllabus with inputs from their staff members.

No.	Faculty	Department
1	Mrs. B. R. Hathi	Statistics
2	Dr. R. K. Pujara	English
3	Dr. S. N. Zala	Chemistry
4	Dr. J. J. Vora	Chemistry
5	Dr. A. M. Shukla	Botany
6	Dr. H. V. Pandya	Biochemistry
7	Prof. H. H. Rathod	Electronics/Physics
8	Prof. P. G. Joshi	Zoology
9	Dr. S. G. Yadav	Mathematics
10	Prof. B. M. Patel	Mathematics

11	Dr. R. D. Shah	Geology
12	Dr. A. N. Rafique (retired in June 2012)	Microbiology

1.4.2 Is there a formal mechanism to obtain feedback from students and stakeholders on Curriculum? If 'yes', how is it communicated to the University and made use internally for curriculum enrichment and introducing changes/new programmes?

Although we take the feedbacks from the students, we do not have any formal mechanism to improve the syllabus. But discussion with Alumni and experts from industries on regular basis does provide an idea about the current scenario in that particular field. These ideas are discussed with other board members who then convey to University at the time of revision of curriculum.

1.4.3 How many new programmes/courses were introduced by the institution during the last four years? What was the rationale for introducing new courses/programmes?)

Yes; five COPs have been introduced in last four years with an aim to enhance employable skills of students.

No.	Course	Rationale
1	Bioinformatics	To make students competent to store, retrieve, analyze and derive data from data bases using Bioinformatics tools. To give students an edge over others when applying for jobs in Pharma and IT companies
2	Cheminformatics	To create awareness among students regarding chemical data base systems, computer assisted structure elucidation systems, computer assisted synthesis and drug designing and 3D structure
3	Geoinformatics	To provide conceptual knowledge on GIS, remote sensing and related fields and hands on training in GIS, Remote sensing data interpretation, Digital Photogrammetry, Digital Cartography and GPS
4	Biotechnology	To enhance the practical skills and understanding the applications of Biotechnology To equip the students for the emerging markets of biotechniques To create awareness towards research in Biological Science
5	Scope	To train students in English (Spoken & Written) To improve communication skills To improve efficiency in reading Students can meet the growing demands of the language Globally.
6	Embedded system	To impart hi tech professional training to students to make them industry compatible by enhancing their practical knowledge in the field of Embedded system

CRITERION - II
TEACHING-LEARNING
AND EVALUATION

CRITERIA II TEACHING-LEARNING AND EVALUATION

2.1 Admission Process, Student Enrolment And Profile

2.1.1 How does the institute ensure publicity and transparency in the admission process?

Our institute has been serving the purpose of higher education in Gujarat for the last 66 years. It is a well-known, oldest and largest science institute catering to a large section of students, imparting scientific knowledge and practical skills. Wide publicity for admission to our institute is given through:

- Advertisement in newspapers.
- Website.
- Movable blackboards and notice boards.
- Counseling desk.

Transparency:

- The common date of admission is decided by the Gujarat University and advertised in local dailies well in advance.
- Application forms are serially numbered.



- The process of admission is conducted by the admission committee comprising of Faculty members, office staff under the chairmanship of the Principal.
- Senior students and faculty help in counseling the applicants, helping them in filling up the forms, explaining the scope of the course & other queries.
- The institute adheres to the rules and regulations of the state government, issued by Gujarat University.
- Enquiries related to admission are answered by an Enquiry Committee comprised of teachers.
- Merit is the sole criterion for the admission at M.G. Science Institute

2.1.2 Explain in detail the Criteria adopted & process of admission (Ex. (i) merit, (ii) common admission test conducted by state agencies and national agencies (iii) combination of merit and entrance test or merit, entrance test and interview (iv) any other) to various programmes of the Institution.

- M.G. Science has opted for merit to admit students to the Institute. The institute does not conduct any test for the admission. Merit is the only criterion for the admission. Special consideration is given to the physically challenged, visually challenged, and differently-abled candidates and children of defense personnel by reserving seats for them.
- M.G. Science admits students on the basis of merit in all the categories.
- There is huge rush for admission to M.G. Science Institute. We receive around 5000-6000 applications for the admission and around 800 students are admitted.
- Reservation policy is followed as per government rules and admissions are given.

2.1.3 Give the minimum and maximum percentage of marks for admission at entry level for each of the programmes offered by the college and provide a comparison with other colleges of the affiliating university within the city/district.

The cut off percentage for entry in to our institution for General category (out of 300 marks) can be seen from the table given below:

SUBJECT	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
BOTANY	172	128	129	193	135	188
ZOOLOGY	172	128	129	193	150	188
MICROBIOLOGY	---	---	---	193	150	188
MATHEMATICS	178	105	118	133	135	183
BIOCHEMISTRY	---	---	---	193	150	188
STATISTICS	---	---	---	133	135	183
PHYSICS	172	128	129	133	135	183
CHEMISTRY	172	128	129	133	135	183
GEOLOGY	---	---	---	133	135	183
ELECTRONICS	---	---	---	133	135	183

Students with higher merit are encouraged to apply for doing additional COP courses like Bioinformatics, Geoinformatics and Cheminformatics and vocational Biotechnology course. Their merit list is separately displayed.

In postgraduate level we have a central admission committee governed by Gujarat University under the chairmanship of the principal. It is purely on merit basis based on the marks of T. Y. B. Sc. (Sem. V & VI).

A variety of students are admitted depending on their score in the qualifying exam. We make every effort to ensure that the average annual result does not go below 90-95% in any subject. As per Gujarat university norms, no students are declared as failed and all are promoted to the next semester till the final semester.

2.1.4 Is there mechanism in institution to review the admission process & students profile annually? If 'Yes' what is the outcome of such efforts & how has it contributed to the improvement of process?

The admission committee, prior to the admissions meets in order to finalise the admission policies and procedures. The institute evaluates the admission process every year and on the basis of feedbacks makes necessary amendments. This has helped the institute to modify its modus operandi in the past.

Since the students' results and preferences to opt for professional courses vary from year to year, we make sure that every year the average number of students per class per batch remains constant. Provisions are made to admit more students than the number of seats, so that the drop out ratio remains unaffected.

Owing to the increase in the number of aspirants seeking pure science admissions, we have increased our counselling desks and have organised them subject wise. Department wise faculty members offer guidance and an insight to the subject and its scope clarifying the doubts of the students and the parents. Senior students also give guidance to the student applicants about the different options available at the institute.

2.1.5 Reflecting on the strategies adopted to increase/improve access for following categories of students enumerate how admission policy of the institution & its students profiles demonstrate/reflect the National commitment to diversity & inclusion

Efforts have been made by our institution in recent years to include students from different categories and from various sections and strata. We follow the government policy for the reservation to the disadvantaged sections of the society.

SC/ST/OBC – There is a separate admission counter to counsel these candidates. On producing required documents the following percentage is reserved. The reservations norms are strictly followed and adhered to. In fact the students belonging to these categories are given precedence and their merit list is prepared on priority basis.

OBC – 27%, ST – 15%, SC – 7%

Women – Girl students are considered in the general category or in their respective



specific categories as admissions are based on merit. Our institute is considered the ‘Safest’ place for girl students and this is one reason why parents choose our institute. We have consistently had more than 50% girls every year. As per government policy, tuition fee is waived off for girl students.

Differently abled – For such students, a separate counter on ground floor is arranged. There is no queue for these applicants. The institute admits candidates belonging to this category on priority basis.

Economically weaker sections – We have provision of funds for this section; supported by Poor boys’ fund and Alumni association. The association of former students is very active in identifying these categories of students and make provisions for their financial assistance.

Sports person – Special consideration is given. All categories of students are admitted as per Gujarat University guide lines and direction. M.G. Science has produced sports persons with immense talents and they have been selected in state and university teams.

ALLOCATION OF SEATS AS PER RESERVATION QUOTA

MATHS GROUP	TOTAL SEATS	OBC (27%)	ST (15%)	SC (7%)	PH	OTHER THAN GUJ. BOARD	OPEN	TOTAL
PHY/MATHS/CHEM	190	51	13	28	1	4	93	190
PHY/MATHS/STAT	100	27	7	15	1	4	46	100
PHY/ELE/CHEM	60	16	4	9	1	3	27	60
BIOLOGY GROUP	TOTAL SEATS	OBC	ST	SC	PH	OTHER THAN GUJ. BOARD	OPEN	TOTAL
MICRO/ZOO/CHEM	160	43	11	24	1	4	77	160
BOT/ZOO/CHEM	140	38	10	21	1	4	66	140
BIOCHEM/BOT/CHEM	145	39	10	22	1	4	69	145
MAHTS & BIOLOGY GROUP	TOTAL SEATS	OBC	ST	SC	PH	OTHER THAN GUJ. BOARD	OPEN	TOTAL
PHY/GEO/CHEM	60	16	4	9	1	3	27	60
PHY/CHEM/BOT	30	8	2	4	-	2	14	30

2.1.6 Provide the following details for various programmes offered by the Institution during the last four years and comment on the trends. i.e. reasons for increase/decrease & action initiated for improvement

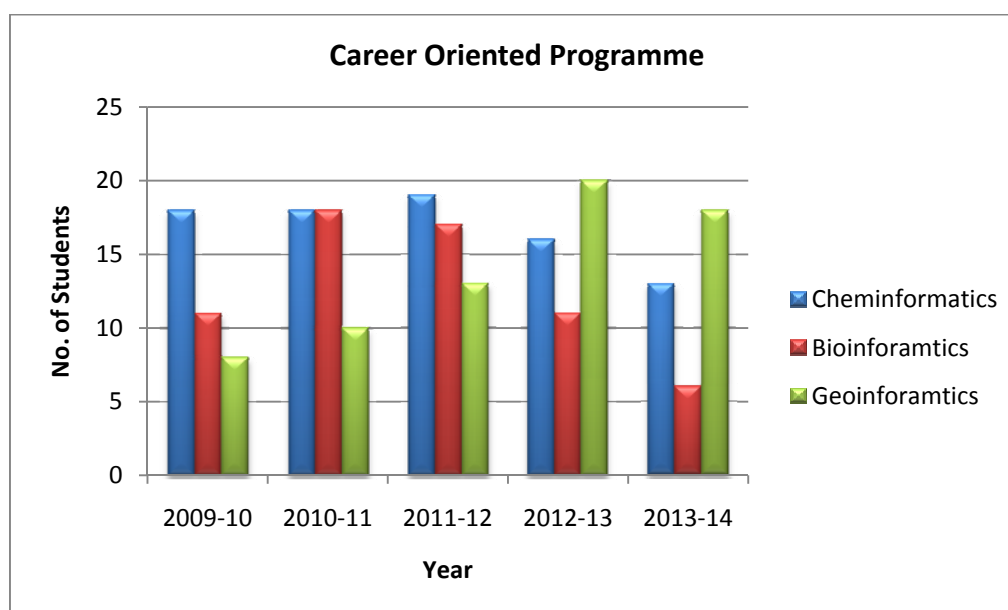
There is a significant increase in the demands for subjects like Chemistry, Statistics and Geology. Although the seats for all the subjects are fixed, the students with higher merit have started opting for these subjects. The trend can be seen from the table given in 2.1.3

COP – Career Oriented Programme

University Grants Commission (UGC) during Xth plan decided to restart vocational programme at undergraduate level under a modified scheme of COP.

There are 3 courses under COP run by our institute.

There are 5 courses under CCF run by our Institute:								
Sr. No.	Year Wise	Subject Wise						Total
		Cheminformatics		Bioinformatics		Geoinformatics		
		FY	SY	FY	SY	FY	SY	
1	2009-10	9	9	11		8		37
2	2010-11	9	9	10	8	5	5	46
3	2011-12	12	7	10	7	8	5	49
4	2012-13	10	6	5	6	15	5	47
5	2013-14	7	6	5	1	5	13	37
Total No. Students		47	37	41	22	41	28	216



These courses orient and prepare the students to seek admissions for higher studies. Eg. Two students namely Parth Gondaliya and Dhaval Patel of Geoinformatics secured admission in M. Sc. Geoinformatics in Pune University after successfully completing the COP course in our institute.

Our institute has been a counselling center for IGNOU in subjects of Maths, Physics and Chemistry for the past 10 years.

M. Sc. – Ph. D. Programme

Programme	Year	Number of Applications	Number of Students Admitted	Demand-Ratio
M. Sc. (Geology)	2008-2009	15	10	1:1.5
	2009-2010	18	15	1:1.2
	2010-2011	27	15	1:1.8
	2011-2012	14	14	1:1
	2012-2013	20	15	1:1.33
Ph. D.	2008-2009	05	05	1:1
	2009-2010	---	---	---
	2010-2011	---	---	---
	2011-2012	---	---	---
	2012-2013	12	08	1:1.5

Vocational Biotechnology Programme

The number of Biotechnology students admitted in the past five years on an average range from 20-30. Number of applications received is 80-90, from which selection is done on basis of merit.

Sr. No.	Year	No. of Applications	No. of Students	Demand-Ratio
1	2008-2009	100	25	1:4
2	2009-2010	90	25	1:3.6
3	2010-2011	110	25	1:4.4
4	2011-2012	110	25	1:4.4
5	2012-2013	95	25	1:3.8

2.2 Catering student Diversity

2.2.1 How does the institution cater to the needs of differently-abled students and ensure adherence to government policies in this regard?

The institute is very much keen to admit the students from such categories and have welcomed them in the past with open arms, but at present the institute does possess two students from such categories. M. G. Science Institute hosted national and international tournaments for mentally challenged children under the auspices of Special Olympics Bharat. The faculty members and the students set an example of social service, while taking care of those special children.

2.2.2 Does the institution assess the students' needs in terms of knowledge and skills before the commencement of the programme? If 'Yes' give the details on process

An induction programme is conducted to counsel the incoming students at Th. No 5 and Th. No14. The Principal along with heads of every department interacts to address the students. The class consists of a mix of intelligent and average students.

2.2.3 What are the strategies drawn and deployed by the Institution to bridge the knowledge gap of enrolled students to enable them to cope up with the programme of their choice? (Bridge/remedial/Add-on/Enrichment course etc)

After admission process is completed, one orientation programme is conducted at class level where students are provided detailed information of subject and its syllabus.

Bridge course:

Students of different courses are given additional knowledge in subjects like English, Environment protection, Biostatistics etc.

For Biotechnology students a special class of management is conducted to develop their entrepreneurial skills.

Remedial lectures (Additional lectures)

For students who are weak in studies remedial lectures are conducted by our teachers and guest lectures by experts on need basis. Under the UGC scheme of remedial coaching, extra lectures for SC, ST, OBC and minorities are arranged and their performance is subsequently analyzed.

Tutorials:

Tutorials are regularly conducted where special care is given to slow learners. They are guided with respect to both, practical and theory by taking extra lectures and giving them practice of sample question papers. This has helped to improve the performance of students in the final examination as reflected in results.

2.2.4 How does the institute sensitize its staff and students on issue such as gender, inclusion, environment etc?

Women empowerment programmes, save girl child movement, women's cell and women redressal forum is working in our institute under CWDC (Collegiate Women's Development Cell)

Various awareness programmes, workshops and talks are organized to sensitize students and Faculty members.

Environment:

Gujarat University has introduced a course in Environment Science under the CBCS scheme which is compulsory for all students of semester II. This course is offered both in Gujarati and English.



The institute has more than 350 species of plants on campus. It is an ecological niche, to which the students of not only our institute but from other institutions also come for study purpose and to interact with nature.

Tree plantation is organized on an annual basis where the Faculty members and students participate in large number. This activity is channelized with the help of our students' union.

The Institute also organizes camps and treks to neighboring forest areas like Jassore, Polo, Indroda Park to create environmental awareness. Some students also volunteer, which shows their passion towards environment and wildlife protection.

Our institute entered into an MoU with CEE [Center for Environment Education]-SAYEN to raise awareness regarding sustainable environment. It brings students of different countries on a common platform to spread environmental awareness. A very informative lecture was organized by SAYEN and several students take part in the activities of the eco-club.

A visit to old age home was also organized for the students to sensitize them towards this section of neglected people.

DBT Star institute scheme:

Our institute is the recipient of the DBT (Department of Biotechnology, New Delhi) grants, and has utilized it for setting up state of art practical facilities. This programme strengthens the academic and physical infrastructure for achieving excellence in teaching and training in life sciences and to enhance the quality of learning.

2.2.5 How does the institution identify and respond to special educational/learning needs of advance learners

On the basis of their previous year's academic record the institute identifies advanced learners & provides them the following additional learning benefits:

- They are given special assignments.
- Guidance and solution of earlier question papers of University exam are provided.
- Summer training in National institutes and Pharma industries & Medical labs.
- They are given guidance regarding competitive exams.
- Previous sample papers are distributed and solved.
- They are motivated for various projects and scholarship schemes.
- Training sessions are organized to handle sophisticated instruments.
- They are encouraged to participate in seminars for oral and poster presentations.
- We encourage them to be team leaders in group discussion and be useful to slow learner.
- Compulsory debate on specific recent topics are conducted which encourages self learning.
- They are screened and sent for a capacity building programme, sponsored by GSBTM (Gujarat State Biotechnology Mission) conducted by St.Xavier's institute to train them for competitive exams.
- They are also given guidance to participate in the Science Excellence programme of organized by Gujarat University.

2.2.6 How does the Institute Collect, Analyze, and use data and information on the academic performance (Throughout programme duration) of the students at risk for dropout (Students from the disadvantage section of society, physically challenged, slow learners, economically weaker section etc)

- Our institute periodically conducts examinations, takes regular classes and gives assignments to the students to assess their academic performance. This data is used by each department to follow up the progress of students. Depending on the need, remedial classes are organized by the concerned departments for slow learners.
- Regular meetings are conducted by our the heads of the department to get the idea of academic problems, difficulties on the campus, career planning, future plans for higher studies, competitive exams etc.
- We also have a placement cell in our institute where different companies like ZyduS Cadila, Immunoshop, Five star pharma, Tata Consultancy services Clariespharma, Reliance groups of industries etc visit our institute to take interviews and offer the jobs to deserving candidates.

- There is a provision in our institute for helping economically backward students. Our institute has poor students' funds and if needed the institute waives the fees of economically weak students. The funds for these are also provided by our Alumni association.

AGENCY FOR FINANCIAL SUPPORT	2008-09	2009-10	2010-11	2011-12	2012-13
Poor Boys Fund	-	Rs. 5085/-	Rs. 2920/-	Rs. 9615/-	Rs. 10020/-
Alumni Association	Rs. 3500/-	Rs. 8000/-	-	-	-

2.3 Teaching Learning process

The effectiveness of the teaching-learning process is enhanced by regular monitoring of teaching process and creating a regular well defined learning environment in the campus for which Principal and all Heads of the departments meet prior to reopening of the institute and make a tentative plan for academic activities annually.

2.3.1 How does the institute plan and organize the teaching, learning and evaluation schedules? (Academic calendar, teaching plan, evaluation blue print etc.)

Academic calendar is prepared and published in college magazine and uploaded on college website before the beginning of the first year of every academic year. It provides the plan for the academic year to teachers, students and parents. It is also displayed on website of our institute. A copy is issued to all Heads of departments and coordinators and published in our annual institute magazine. Students are also communicated through notice boards in individual departments. Below is the sample academic calendar for the year 2012-13.

MONTH	DATE	DAY	EVENT
June	15 June, 2013	Saturday	College reopens after summer vacation
July	01 July, 2013	Monday	Induction meeting for 1 st Semester students
			Commencement of theory classes of B.Sc. Semester III and V
	08 July, 2013	Monday	Commencement of practicals of B.Sc. Semester I, III and V
	22 July, 2013	Monday	Celebration of Guru Purnima by students
	23 & 24 July, 2013	Tuesday and Wednesday	Registration of participants for various cultural activities in Youth Festival
August			Formation of Students' Union
	15 August, 2013	Thursday	Celebration of Independence day
	12-14 August, 2013	Monday-Wednesday	DBT workshops by Botany, Biochemistry, Zoology, Microbiology, Maths and Statistics departments
September	5 September, 2013	Thursday	Celebration of Teachers' day
	16 September, 2013	Monday	Starting of B.Sc. Semester I, III and V theory examinations

	30 September, 2013	Monday	Starting of B.Sc. Semester I, III and V practical examinations
July to September			Selection rounds of various college sports teams
October	07 October, 2013	Monday	Declaration of theory results
	12 October, 2013	Saturday	Organisation of Mega Navratri program by Alumni Association
January	01 January, 2014	Wednesday	Initiation of theory classes of B.Sc. Semester II, IV and VI
	01-08 January, 2014	Wednesday to Wednesday	Commencement of various days by Students' Union
	06 January, 2014	Monday	Blood Donation Camp
	09-10 January, 2014	Thursday-Friday	College Cultural Festivals
	11 January, 2014	Saturday	Talent Morning
	16 January, 2014	Thursday	Instigation of practical of Semester II, IV and VI
	23 January, 2014	Thursday	CWDC program
February	24-26 February, 2014	Monday-Wednesday	DBT workshops by Botany, Biochemistry, Zoology, Microbiology, Maths and Statistics departments
January-February			Interclass sports competitions
March	15 March, 2014	Saturday	Annual Day celebration
	17 March, 2014	Monday	Starting of Semester II, IV and VI theory exams
			Induction meeting of IGNOU
	27 March, 2014	Thursday	Starting of Semester II, IV and VI practical exams
April	07 April, 2014	Monday	Declaration of Semester II, IV and VI results

Teaching Plan:

Teaching plan is prepared and submitted to the heads of the departments, every academic year for various subjects by subject teachers. It is submitted within a week after institute reopens, in the respective semester. The head of the department takes stock to find out whether the faculty members conduct the lectures as per the teaching plan submitted.

Time table:

Time table for regular lectures for the coming academic year is prepared and displayed on the notice board of each department well in advance. The time table is also displayed on the institute website. This helps to ensure that the lectures start on the very first day of the academic year. If any teacher is on leave, then his/her lecture is substituted by another faculty member.

Examination schedule:

Semester examination schedules are notified through an academic calendar issued at the beginning of the semester. Class tests are notified through the notice board. The portion to be covered in the test is also displayed. The internal examination scheduled is prepared based on the final university exam dates announced by the university.

Evaluation Blueprint:

Dates of examination, dates of centralized assessment projects, dates of announcement of results, dates of revaluation of paper etc. are announced well in advance. Exams are conducted as per the University schedule.

Students are given suggestions about expected answers to the questions asked, proper presentation of answers etc. The evaluation of the unit tests, home assignments & practical journals form the basis of judging the performance of students throughout the year. The process of preparing the internal result is totally computerized and the results are displayed on the website as well as departmental notice boards.

2.3.2 How does IQAC contribute to improve the teaching-Learning process?

IQAC works as a very efficient guideline agency in our institute. The academic Committee consisting of all the heads of the department function as members of IQAC. Through its mechanism of data and information, collection and analysis, it suggests required changes in teaching and learning methods. The following improvements have been brought due to their guidelines:

- | | |
|-----------------------------------|--|
| 1. Compulsory usage of library, | 8. Handouts / Printouts, |
| 2. Project based learning, | 9. Medical dictionary, |
| 3. Experimental learning, | 10. Use of teaching models and charts, |
| 4. Training programmes, | 11. Use of audio-visual aids, |
| 5. Seminars, | 12. OHP (Overhead Projector) and |
| 6. BULATS for English improvement | Slide Projector, |
| 7. Bilingual method, | 13. Case studies, |
| | 14. Vocabulary sheets. |

Teachers use textbooks, reference books and internet for preparing study materials for effective teaching. Lecture method takes more time for explanation and students have less chance for interaction. This is remedied by organizing several seminars, workshops, training sessions which gives them ample opportunities to make interactions.

2.3.3 How learning is made student-centric? Give details on the support structure and system available for teachers to develop skills like interactive learning, collaborative learning, and independent learning among the students?

Recent developments in the field of higher education have brought many changes, where the whole process has become student-centric. Student-centric methods have been incorporated in the institute curriculum.

Learning is made student-centric in the following ways:

1. Field trips (Geology, Physics, Botany, Zoology, Chemistry, Microbiology and Biochemistry department).
2. Industrial tours (Geology, Physics, Biochemistry, Botany and Chemistry department).
3. Study tours (Geology, Botany and Zoology department).
4. Video conferencing and Virtual learning is provided. The technology is used in collaboration with BISAG. It enables quality education independent of geographical location.
5. Computer facility is available to the students.
6. Faculty and students are allowed to access internet.
7. Laser printers are provided for preparing study notes.
8. Power-point is used by the teachers for teaching purpose.
9. Transparencies are used for teaching the subject effectively and for saving time.
10. Students are also allowed to use power-point and projector facilities to represent their seminars, which are included in their syllabus.
11. Interactive learning is made possible when the students together work for the departmental projects.
12. Participation of students in various workshops and hands-on training programmes.

2.3.4 How does the institution nurture critical thinking, creativity, and scientific temper among the students to transform them into life long learners and innovators.

- Our institution provides plenty of opportunities in the form of seminars, NCC / NSS and cultural forums to acquire exposure and life-skills other than the routine syllabus. This envisages critical and creative thinking in students.
- Under BISAG programmes, special lectures are given by industry experts for final year UG and PG students, where students are taught soft skills like research, personality development etc.
- SCOPE programme is aimed at improving the English language and computer skills among the students, which is a major problem with our students having rural background.
- Educational tours are arranged for the students which evokes scientific temperament.
- YOGA learning under elective course, which elevates the emotional quotient of the students through yoga, meditation and spiritual talks.

- Biocomposting : In order to generate environment awareness and build up the concept of recycling & reuse of the waste material. As lots of solid waste is generated, the degradable waste is use for biocomposting purpose.
- Under Swarnim Saptdhara programme of the Govt. of Gujarat, students are encouraged to participate and learn extra-curricular skills like folk dancing, singing, dramatics, sports etc.
- Red cross and other medical institutes like HCG etc arrange to send their experts to enlighten the students on common health issues related to adolescent students and how to keep a healthy and hygienic lifestyle.
- All departments organise seminars pertaining to their syllabi.
- Many of our students are exposed to national and state level seminars where they present research papers and posters eg. Charusat University – 32 students from Microbiology and Biochemistry were taken by the faculty members for participating in Manthan Science fair.
- Our institute arranges many National Workshops and Seminars where both students and teachers get regular exposure to recent developments in their respective field of science.
- The studensts prepare college magazine which becomes a unique platform for expressing creative ideas in the form articles, poems and short stories.

2.3.5 What are the technologies and facilities available and used by the faculty for effective teaching?E.g.: Virtual laboratories, e-learning - resources from National Programme on Technology Enhanced Learning (NPTEL) and National Mission on Education through Information and Communication Technology (NME-ICT), open educational resources, mobile education, etc.

- Use of modern teaching aids and tools like multimedia, NPTEL and internet are encouraged in the teaching-learning process. There are subjects like Biochemistry, Geology, Zoology etc. where computers are attached with instruments and demonstrated to students.
- Departments like Geology, Botany, Biochemistry, Zoology etc. regularly use You-tube, charts, models and other useful materials to ensure that the students have effective learning experience.
- Broadband internet connection is available free of cost to the Faculty members and students, which helps to reach 100% computer literacy among the teaching staff of the

institute. INFLIBNET – the e-library has provided the user id and password to the Faculty members to access the e-resources from anywhere without going to INFLIBNET. This facility is frequently used by the Faculty members for the improvement in teaching and learning.

- Students use sophisticated software like MATLAB and SPSS to enhance their learning experience.
- Independent classrooms have been established with facilities like LCD projector, overhead projector, sound system, computer with internet facility and UPS backup.
- NPTEL has been subscribed by the institute.
- For the preparation of competitive exams, Biochemistry and Microbiology departments of the institute send students for an intensive training under GSBTM sponsorship free of cost. At least 25 students go every year for this training.
- The Geology department of the institute sends the PG students every year for training at the professional organizations like Gujarat Mineral Development Corporation (GMDC), Geological Survey of India (GSI), Institute of Seismological Research (ISR), Institute of Reservoir Studies (IRS) and many others to cope up with the recent technologies used by such institutes.

Career Guidance Cell:

- For the preparation of competitive exams and other examinations, the institute has established a separate Career Guidance Cell. Members of this cell counsel the students which helps the student to decide his/her future path.
- Placement cell works very effectively to bridge the gap between students seeking jobs and various MNC's and pharma companies. Almost every year Geology department of the institute arranges campus interviews for the recruitment at Gujarat Mineral Research and Development Society (GMRDS).
- The companies like Alpine Health Care, Fivestar Pharma Company, Claries Pharma, Cadila Zydus, Indonesia Biscuit company (INBISCUS), Reliance Group of Industries, (Jamnagar), and TCS have arranged campus interviews at the institute which benefited the students in finding the job.
- Lectures on various burning issues and topics of current relevance like climate change, women empowerment, waste management, healthy lifestyle are arranged on a regular basis which immensely help the students to be healthy and responsible citizens.

- Many of our faculty members have delivered lectures at BISAG, Gandhinagar and are resource persons in Granthnirman Board and Knowledge Consortium of Gujarat (KCG).

2.3.6 How are the students and faculty exposed to advanced level of knowledge and skills (blended learning, expert lectures, seminars, workshops etc)?

- The faculty members regularly participate in various conferences, seminars and workshops (State, National and International level) on recent developments in their respective subjects.
- Most of our Faculty members are Ph.D. and M.Phil. Many others have registered for Ph.D./M.Phil. Most departments have been rewarded with projects worth lakhs of rupees under ISRO/DBT/GUJCOST/UGC/GMDC/DST etc.
- To fulfil the Gujarat Government policy, a three day compulsory training and exam in computer learning was undertaken for all non-teaching staff members (CCC exam).
- Many departments encourage students to collect and display Newspaper/Journals or Scientific magazine articles on recent developments in respective subjects.
- Important books, articles and informations are downloaded by Faculty members and students.
- Some departments like Biochemistry encourage literature survey projects to instil a scientific temperament amongst students on topics of recent relevance in the field of Life-Sciences.

2.3.7 Detail (process number of students benefited) on the academic, personal and psycho-social support and guidance service (Professional counselling/ mentoring/ Academic advise) provided to students?

The following table shows some of the academic training activities and campus interviews:

Sr. No.	Type of Activity	No. of beneficiary students
1	HPLC training programme for M.Sc Chemistry students	25
2.	Summer training for vocational biotech programme in last five yrs	100
3	Campus Interview	23

2.3.8 Provide details of innovative teaching approaches/methods adopted by the faculty during the last five years? What are the efforts made by the institution to encourage the faculty to adopt new and innovative approaches and the impact of such innovative practices on student learning?

- All departments have tried and tested novel teaching methods in the past. Subject based quiz tests, seminars are regularly held in class rooms.
- All students are asked to solve the past five years university exam papers and if needed guided for the same by the faculty.
- E-content NET surfing & teaching through ICT are encouraged. More pictorial and graphic presentation based teaching methods have been encouraged in the last few years.
- More lectures by subject experts have been organized for acquainting our students with recent developments in science and industry.
- Motivational lectures are organized and guidance about how to face interviews and career plans are also provided. For e.g. the Brahmakumari's sect regularly visit the institution on Rakshabandhan and enlighten the students on the importance of moral values in one's life.
- These activities help our students to become more creative, bold, informed and morally sound individuals & foster a healthy competitive spirit in them.

2.3.9 How are library resources used to augment the teaching-learning process?

- Our institutional library has more than 20,000 books and 12-15 journals. Most recent research journals, online books, periodicals and internet facilities are available in the library. Every year each department is given financial assistance to buy reference books as well as text books. Certain departments like Biochemistry, Botany, Geology, Zoology maintain their own departmental libraries as well as they have a rich collection of very good references gifted by their Alumni.
- We do have INFLIBNET list and faculty members & students use these resources to keep in touch with the modern developments in various subjects.
- Our library also has Videos and CD collection of subject topics.
- The library is automated with SOUL programme and has internet facilities.

2.3.10 Does the institution face any challenges in completing the curriculum within the planed timeframe and calendar? If 'Yes' elaborate on challenges encountered and the institutional approaches to overcome these.

- At the beginning of the each academic year, a unitized plan is made by each faculty which is followed up by the Head of department. Hence the institution completes the curriculum well in time and in a planned fashion.

- However under the CBCS semester system, the institute has to regularly conduct several exams which reduce the number of actual teaching days. To cope with the situation, the institute arranges extra classes and the college timings are extended.
- The institute has shortage of staff as there has been no new appointment since 1998 which has made the task of teaching and assessment a mammoth job. To overcome the deficiency of staff, we have tried to accommodate a few lectures and practicals early in the morning before the scheduled institute timings. For example chemistry department starts practical at 8.30 am and Geology, Biotechnology and Zoology at 9.30 am. We also call part-time/Ad hoc/visiting faculty to help us and so there is no compromise on teaching quality.

2.3.11 How does institute monitor and evaluate the quality of teaching learning?

- We have IQAC / the academic committee which keeps a watch on teaching learning evaluation and its requirement.
- We have a suggestion box and grievance redressed cell where students can drop their suggestions or meet personally.
- We try to get feedbacks also. We have regular meetings where discussions about the quality of teaching and students' satisfaction level are debated. Feedback and result analysis also play an important role in evaluating teaching learning process.

2.4 Teaching Quality

2.4.1 Provide the following details and elaborate on the strategies adopted by the institute in planning and management (recruitment & retention) of human resources (Qualified & competent teachers) to meet the changing requirements of curriculum.

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.							
Ph.D.	01	---	21	03	02	05	<u>32</u>
M.Phil.	---	---	01	02	01	01	<u>05</u>
PG	---	---	11	07	04	---	<u>22</u>
Temporary teachers							
Ph.D.	---	---	---	---	---	---	---
M.Phil.	---	---	---	---	---	---	---
PG	---	---	---	---	---	---	---
Part-time teachers							

Ph.D.	---	---	---	---	---	---	---
M.Phil.	---	---	---	---	---	---	---
PG	---	---	---	---	05	04	09

- M.G. Science is a grant in aid Institute. New posts are yet to be sanctioned after the retirement of few faculty members. To ensure students do not suffer, nine part time teachers on Ad hoc basis have been recruited by the approval of management. Provisions have been made for visiting Faculty members also.
- Faculty members are encouraged to participate in national and international conferences. Many faculty members have presented papers in international conferences.

Teachers visited foreign universities for presenting research papers

Sr. No.	Name	Department	Country visited
1	Dr. B. K. Jain	Principal	Australia, Turkey
2	Dr. Vijaya Nadagouda	Biochemistry	USA
3	Dr. Alpna Shukla	Botany	China
4	Dr. J. H. Parikh	Chemistry	USA
5	Dr. P. K. Patel	Chemistry	USA
6	Dr.(Ms) J .C. Patel	Chemistry	USA
7	Dr. B. B. Baldania	Chemistry	USA, Canada
8	Dr. Rina Shah	Chemistry	USA
9	Dr. C. V. Pandya	Physics	Italy, China
10	Dr. D. G. Chaudhari	Physical Edu.	Singapore, China

- Many faculty members have worked as resource persons at KCG (Knowledge Consortium of Gujarat) organized workshops. Some faculty members have also participated in KCG to understand, evaluate and given suggestions to the university regarding the CBCS system introduced in June 2010. Majority of the faculty members are involved in syllabus formation as they are members of board of studies of their subjects. The syllabus of elective course on Biodiversity has been designed by Faculty members of our institute. Nearly 10 faculty members have visited foreign universities for either presentation of research papers or to attend workshops.
- Many faculty members have published books which depict their expertise in the subject.

2.4.2 How does the institute cope with growing demand/scarcity of qualified senior faculty to teach new programmes/modern areas (emerging areas) of study being introduced?

Provide details on the efforts made by the institution in this direction and the outcome during last three years

- The faculty recruitment is done as per UGC/ Gujarat University rules. However no new faculty has been appointed since 1998. To overcome the faculty deficit , With the changing requirements of the curriculum and need for specialized faculty, the Management has also made provisions for 09 visiting faculty (Maths, Physics, and English).
- For the post graduate classes visiting faculty is invited to impart quality teaching.
- In selecting faculty besides academic qualifications and teaching skills, the experience and aptitude of the candidate are also considered.
- The Institute gives ample freedom to each faculty to broaden his/her capabilities. For overall development of its faculty and students they are sent for training in advance techniques, to workshops and seminars. For this they are provided duty leaves also.
- Similar programmes are also organized on campus so that more Faculty members can be trained. Faculty is encouraged to take up minor as well as major research projects.
- M. G. Science Institute is one of the first institutes in Gujarat (Since 1995) to introduce Vocational Biotechnology as a part of its curriculum.
- The institute runs the COP (Carrier Oriented Programme) in Bioinformatics, Chem-informatics as well as in Geo informatics and COC in Embedded System. These programmes attract good number of students. These programs are conducted with the help of Ad hoc and visiting faculty.
- The institute has organized 15 national and state level seminars and around 37 hands-on training programmes to ensure faculty development.

2.4.3 Provide details of staff development programmes during the last four years elaborate on the strategies adopted by the institution in enhancing teaching qualities?

a) Nomination of staff development programme:

- All staff members have completed Orientation course as well as refresher courses. Many staff members have attended KCG staff training programme. Staff members are actively engaged in conducting BISAG programme (A programme introduced by Government of Gujarat)

Academic Staff Development Programmes	Number of Faculty nominated
Refresher Courses	3
Orientation Programmes	2
HRD programmes	18

Staff training conducted by the university	-
Staff training conducted by other institutes	26
Summer / winter schools, workshops etc.	38
BISAG Lectures	18

b) Faculty Training programmes organized by the institution to empower and enable the use of various tools and technology for improved teaching-learning
Teaching learning methods/approaches:

Workshops are conducted by all the departments to orient faculty members and the laboratory staff in the management of tools and technology. The faculty members make use of different kinds of teaching learning methods to provide quality education to the students. The students are taken to multimedia room for the live presentation. Students also get the opportunity to take part in various projects undertaken in the departments. Even the faculty members are provided training in the use of latest technology through various hands on training programmes. The statistics department organized workshop on “Data analysis using MS Excel”. There was a workshop on “**Technology Enhanced Learning**” where teachers were given training for the use of latest technology. The faculty members also participated in the training programme named “**E-content development and management using freeware**”.

Here is an exhaustive list of training programmes attended by the staff members for the improvement in teaching learning approaches.

Sr. No.	Activity
1.	Ms. Sunita Jha, Dr. Vijaya Nadagouda Bioinformatics workshop organized by Dept. of Microbiology under Star College Scheme.
2.	Dr. Vijaya Nadagouda, Assoc. Prof., attended and presented a paper at a seminar conducted by Department of Botany, Gujarat University.
3.	Ms. Diti Chokshi, Assoc. Prof., attended a national workshop and seminar on Nutrigenomics at Hyderabad.
4.	One-day workshop “Techniques in Molecular biology” for the teachers of higher secondary school was organized on 30 Nov. 2011. 12 teachers of different schools of Ahmedabad participated.
5.	3 faculty members of Botany dept. visited to PTC Unit at Mogar, Anand on 28 March 2012.
6.	Three faculty members, Dr. Alpana Shukla, Dr. Nainesh Modi and Shri Dhaval Vaghela attended three-day training in basic Plant tissue culture techniques at PERD centre, Ahmedabad, from 23 rd to 25 th Feb., 2010
7.	Three faculty members, Dr. Alpana Shukla, Dr. Nainesh Modi and Ms. Zankhana Rathod attended “Molecular Biology Workshop” under the DBT Star College Scheme

	in collaboration with Chromus Biotech, Bangalore on 3rd to 5th March 2011, conducted by the Department of Microbiology.
8.	Microbiology Teacher's training programme in Bioinformatics under the DBT Star College Scheme on 11 Feb. 2011. All the participants were highly motivated and benefited from this training. Participants 19
9.	Teacher's training programme in Bioinformatics under the DBT Star College Scheme on 11 Feb. 2011. All the participants were highly motivated and benefited from this training. Participants 19.
10	Teacher's training: "Molecular Biology Workshop" under the DBT Star College Scheme in collaboration with Chromus Biotech, Bangalore on 3rd to 5th March 2011. Faculty members from various departments participated. The expert team from Chromus Biotech provided hands-on training on PCR, GMO detection, RAPD profiling, Restriction mapping, Gene cloning (GFP gene), and DNA sequencing – Chromatogram analysis, etc. Participants 09.
11	A two day workshop on "e-content development and management using freeware" was organized by Prof. U. V. Shah and Dr. V. N. Upasani on 3 rd & 4 th Feb. 2012. Nineteen faculty members different departments of the college participated.
12	Dr. V. N. Upasani attended a "Computer-aided Drug Designing (CADD)" workshop organized by Institute of Life Sciences, Ahmedabad University.
13	Dr. Mahesh N. Jivani, Associate Professor, In-charge Head, Electronics Department, Saurashtra University, Rajkot; Dr. Dilip Barad, Associate Professor, Head, Dept. Of English, Bhavnagar University, Bhavanagar; and Prof. H. I. Sarvaiya, Asst. Professor & Head, Department of English, Maninagar Science College, Ahmedabad delivered lectures and training on "Introduction to ICT and e-content generation", "LMS (Moodle)" and "Video generation and editing" respectively.
14	A lecture on "Different Culture Media and Maintenance of vial cells by Dr. Divya Chandel Assistant Prof., Zoology Department, School of Sciences, Guj.Uni. on 6 th August 2011.
15	A popular lecture was organized by department on "Scope of cell culture technology" by Dr. Hatim Motiwala from Intas Biopharmaceutical Ltd., Ahmedabad on 9 th Aug 2011.
16	A very interesting lecture on "Scope of cytogenetics in clinical laboratory and research related to Animal Cell Culture" was delivered by Dr. Sonal Baxi, Assistant Prof. Biotech Dept., Nirma Univ., Ahmedabad on 27 th Aug 2011.

Handling new curriculum:

With a view to having broader comprehension of newly introduced CBCS system, the faculty members participated in various seminars organized by KCG (Knowledge Consortium of Gujarat). The Principal of the institute Dr. B. K. Jain has done a pioneering work in the initial development of CBCS system in Gujarat. Several faculty members have participated in the workshop organized for the introduction of the CBCS system in Gujarat University. Many staff members have contributed to the writing of textbooks for the new CBCS system. Most of the heads of the departments

are the members of the board of studies so they take part in the design of the new syllabus.

Content/knowledge management

Knowledge management is an area where many faculty members have experimented in their particular conduct of the syllabus. What is taken into account is the student friendly approach from the faculty members, so that the content of the syllabus can become smooth for them. The statistics department introduced MS Excel practical in their syllabus. The students are made aware about the latest books and websites related to their specific subjects. The students are also given the opportunity to attend seminars and workshops to broaden their horizon. The knowledge transfer from teachers to students is an ongoing process at the institute and it is a shared experience.

Selection, development and use of enrichment materials

Many faculty members have worked for the content development for the new syllabus introduced under CBCS system and these books prepared by the experienced faculty reach the students so that they can prepare well for their courses. Dr. Alpana Shukla, Dr. B. K. Jain, Prof. H.H. Rathod, Dr. N.R. Modi and Prof. Dhaval Vaghela scripted the books for the new system. Dr. R. K. Pujara contributed to the preparation of the English Workbook published by the Gujarat University. Many departments prepare the lab manuals for the practical work in the laboratory.

Assessment:

Assessment at M G Science is an ongoing process. There are two midterm exams conducted as mandated by the University. The departments have their own internal evaluation process in which students are given assignments, quizzes and class tests. There is a standard marking system which is computerized also. Impartiality and objectivity are the hallmark of the assessment at MGSc.

Cross cutting issues:

The institute organized several popular lectures, debates and seminars which focus on issues related to gender sensitivity, spirituality, patriotism etc. The CWDC is the major force in the institute which organizes such programmes to inculcate these values among the students. To cite an example, Statistics department organized the quiz program with the theme on “Save the Girl Child”. There are also programmes related to AIDS awareness and other disabilities.

Audio Visual Aids/multimedia



The department of Statistics organized training programme in MS Excel and PASW SPSS 18 to upgrade the faculty on nuances of the software so that this facility can be made use in teaching using multimedia. The administrative staff and faculty were trained in

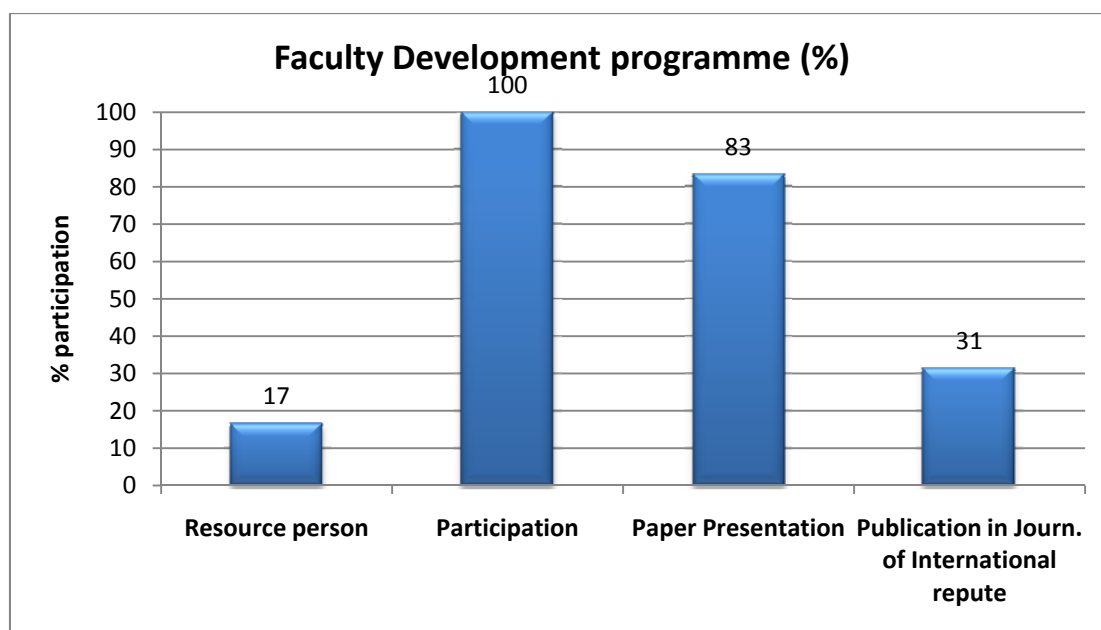
computer and internet use. A workshop was organized for the computer training of non-teaching staff.



Teaching learning material development, selection and use

Most of the faculty members have excelled in writing the books and manuals for their own subjects. Even they are experts at selecting the correct textbooks and reference books for the students. They also provide the information about the latest e-books available on the internet. The faculty members also involved in the process of selecting the reference books for the library use.

c) Percentage of faculty members in:



2.4.4 What policies /system are in place to recharge teachers?(e.g. providing research grants, study leave, support for research and academic publication, teaching experience in other national institution and specialized programmes, industrial engagement etc.)

Teachers are motivated to submit research projects to the various funding agencies which support the professional development of faculty. Staff members are also encouraged to participate and present their research papers in a National or International conferences/symposia. Many of the staff members are engaged in minor and major research projects. We have around 17 ongoing projects and many projects are in collaboration with reputed institutes like SAC, ISRO, GMDC, etc. Many staff members go abroad for presenting papers in international conferences. The institute grants them leaves as well as financial assistance. Some of the departments are Ph. D. centers, so the environment of research stimulates the staff members and students towards the opportunities in the field of research and development. The Geology department and botany departments are engaged in industrial consultancy. Many staff members are visiting Faculty members at the various premiere institutes.

2.4.5 Give number of faculty who received awards/recognition at the state, National and International level for excellence in teaching during last four years. Enunciate how the institutional culture and end environment contributed to such performance/achievement of faculty?

- The institute is listed among the top 50 institutes in the field of education listed in India Today ORG survey.
- Our institute is leading science institute in research activities at undergraduate level. We provide all facilities for research projects and doctorate work. Our institute has been funded by DST under FIST scheme. The Department of Biotechnology, New Delhi selected our institute under Star College scheme and has funded many projects, workshops and grants to purchase instruments. GMDC (Gujarat State Mineral Development Corporation) has recognized our institute as an institute of excellence and funded more than Rs. 30 lac grant to develop new infrastructure.
- Many of the teachers provided their expertise as a recourse person at BISAG on line lectures. This is the initiative of Knowledge Consortium of Gujarat. Our institute provides and promotes a platform for the post graduate, M. Phil. and Ph.D. students from other universities
- Our faculty strives to maintain high standard and makes great efforts to be the bench marks for other institutes.
- Healthy competition between departments, interdepartmental collaborations, mutual appreciation, and departmental evaluation have created healthy environment to strive for high quality standards. For example on teacher's day, we encourage the faculty and students to make posters and decorate the class based on theme which is of scientific and social importance.
- The achievements and performance of our faculty members and students are appreciated in felicitation programme on annual day held once a year.

2.4.6 Has the institution introduced evaluation of teachers by the students and external peers? If yes how is the evaluation used for improving the quality of teaching-learning process?

Yes our institute has introduced teacher's evaluation by students.

- At the end of every academic year, a feedback session is conducted which gives an overall view of teaching quality, syllabus and available facilities. The views expressed in the feedback are discussed in the meeting of IQAC/the academic committee and conclusions are drawn.

FEED BACK FORM

M. G. Science Institute, Ahmedabad - 09

Students' overall Evaluation of programme and Teaching

(To be filled only after the course results are declared)

Department : _____ Course : _____ Teacher : _____ Year : _____

- Your responses will be seen only after your course results have been finalized and recorded.
- The information will be used only for the improvement of the course and teaching in future.
- You need not to disclose your name if you do not wish to.
- You may tick more than one answer to a question to the extent that they do not contradict each other.

1. The syllabus of each course was
a) adequate b) inadequate c) challenging d) dull
2. Background for benefiting from the course was
a) more than adequate b) adequate c) inadequate d) cannot say
3. Was the course easy or difficult to understand?
a) easy b) manageable c) difficult d) very difficult
4. How much of the syllabus was covered in the class?
a) 85 to 100% b) 70 to 85% c) 55 to 70% d) less than 55%
5. What is your opinion about the library material and facilities for the course?
a) more than adequate b) adequate c) inadequate d) very poor
6. To what extent were you able to get material for the prescribed readings?
a) Easily b) with some difficulty c) not available at all d) with great difficulty
7. How well did the teacher prepare for the classes?
a) thoroughly b) satisfactorily c) poorly d) indifferently
8. How well was the teacher able to communicate?
a) Always effective b) sometimes effective c) Just satisfactorily d) generally ineffective
9. How far does the teacher encourage student participation in the class?
a) mostly yes b) sometimes c) not at all d) always
10. If yes, which of the following methods were used?
a) Encouraged to raise questions b) get involved in discussion in the class
c) encourage discussion outside class d) did not encourage
11. How helpful was the teacher in advising?
a) Very helpful b) sometimes helpful c) not at all helpful d) did not advise
12. The teacher's approach can best be described as
a) Always courteous b) sometimes rude c) always indifferent d) cannot say
13. Internal assessment was
a) Always fair b) sometimes unfair c) Usually unfair d) sometimes fair

- We have well established Alumni association, MAA and apparent body which also provides feedback regarding our institute and teaching-learning facilities.
- The feedback forms are analyzed and discussed in meeting with Principal and heads of departments. On the basis of the outcome of such discussions, new strategies are evolved. In case of problem the teachers are counseled.
- Some departments have a suggestion box where the students can express their views fearlessly.

- Our institute holds Parent-teacher-student meeting in Theater No. 5 to have an evaluation by external sources. This also sensitizes parents with respect to their wards' requirements and progress.
- The university exam results are analyzed as one way of evaluation by external sources.
- Since 2007, the Government of Gujarat API- Annual performance Index which is linked to promotion change of scale etc. The institute makes use of this system for improvement of its own faculty.



2.5 Evaluation Process and Reforms

2.5.1 *How does the institution ensures that the stakeholders of the institution especially students and faculty are aware of the evaluation processes?*

The evaluation process is an integral part of teaching learning process of the institute. The students are informed well in advance about the dates of internal as well as external examinations. The rules and regulations regarding the examinations are intimated on the web site as well as on the notice board. Even the faculty members are informed about the paper setting and the procedure for evaluation. Question banks are prepared by departments which help the students about the type and varieties of questions. Previous University examination's question paper's pattern is discussed in class with respect to marking scheme and answer pattern. As a part of our continuous evaluation procedure, we conduct class tests which keep the students on track and update with the course. Impartiality and objectivity are the key aspects of evaluation at M. G. Science. The students are regularly apprised of the system of internal evaluation by the respective faculty members. Evaluation is crucial as the student union is formed on the basis of merits.

2.5.2 *What are the major evaluation reforms of the university that the institution has adopted and what are the reforms initiated by the institution by its own?*

The university has recently introduced CBCS system which has brought about a significant change in the examination pattern. There are two midterm internal tests for both theory and practicals. This has tremendously increased the workload of faculty

members. The internal evaluation has an element of marks allotted to assignments which is a new feature. Monitoring of regular attendance of students is also a part of continuous evaluation. In addition to Gujarat University mandate of two examinations for theory and one for practical, additional class tests and practice tests are helping students to perform better. In addition to the regular written exams, the Institute has introduced student seminars, classroom presentations by way of exam reforms. The institute also gives extra internal marks to the those students who participate in state and national sports and cultural activities.

2.5.3 *How does the institution ensure effective implementation of the evaluation reforms of the university and those initiated by the institution by its own?*

Academic evaluation:

- The institute monitors the progress of the students through tests, tutorials, seminars, project work, laboratory work, field study tours, assignments, popular lectures etc., and communicates it to the student.
- Answer sheets are shown to the students to bring about transparency and also as a check on faculty to ensure implementation of evaluation reforms and proper assessment.
- Extra periods are conducted to solve the academic difficulties of students. Results are displayed on notice board as well as on web site.
- If required, parents are counselled by the teachers for their child's better progress.
- The excellence in academic performance is duly rewarded with the seat in students' union and the endowment scholarship.

2.5.4 *Provide details on the formative and summative evaluation approaches adapted to measure student's achievements. Cite a few examples which have positively impacted the system.*

The formative evaluation is based on the criteria like creativity, performance in extra-curricular activities like drama, dance, debate, classroom test, quiz, poster presentation, etc. To measure the students' achievements, following approaches are taken into account: concepts such as creativity, capacity to think, motivating others, capacity to get along well.

As a part of continuously evaluating students, the activities like NSS, NCC, and Cultural Festival are considered. The performance in such co-curricular activities has a weightage of 5% marks in the university exam.

Regular medical check-ups are conducted to ensure physical and mental fitness of our students. This shows our holistic approach to keep student not only academically updated but also mentally and physically fit. Our Institute has a physical education director who is also responsible for sport activity and well being of the students.

- **Saptdhara:**

Our Principal Dr. B.K, Jain is the district cluster head of Saptdhara. This is the programme initiated by the Govt. of Gujarat to ensure all round development of the students. Hence our institute regularly organizes various competitions of cultural activities like Dance, Music, Drama, debate under the Saptdhara. Many of our students have won laurels for our institute and won medals at the final round of the Saptdhara.

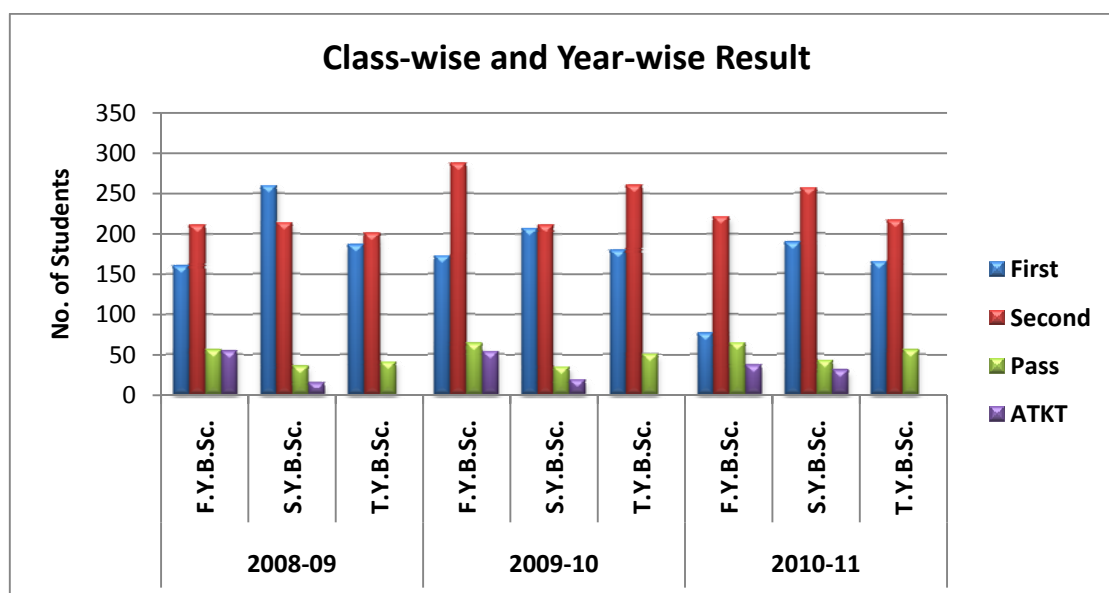
On our annual day the University toppers are felicitated with cash awards and certificates to bring in them a spirit of competition and a focus to achieve the best.

As a part of summative evaluation, we follow the university pattern. The University conducts the final exams that have 70% weightage. 30% weightage is for continuous evaluation entrusted to the College. 25% of these marks are given from the internal exams and 5% are reserved for discipline and attendance. During the annual function, the Principal announces the results and names of those who rank among the first fifty in the University examinations. During the Annual Prize Distribution ceremony the Principal awards the winners in various fields such as sports, extracurricular activities, NCC, NSS and academics. This acts as a great motivating factor for all students.

2.5.5 Enumerate on how the institution monitoring and communicates the progress and performance of students through the duration of the course/programm? Provide an analysis of the students results/achievements (programme/ course wise for last four years) and explain the differences if any and patterns of achievement across the programmes/courses offered.

The institute scrutinizes the progress of the students through its internal evaluation system, and attendance is strictly maintained by each department which is reflected in the internal evaluation. The students with poor attendance are not allowed to take the university exams and their parents are briefed about their performance. The results are displayed on the notice board after every examination. The papers are shown to them to allow transparency in the evaluation system. The final University result is announced and mark sheets are distributed as when the university declares

the results. Those students who figure in the university merit list are duly honoured and rewarded during the annual function. Their names are permanently on display on the display board titled roll of honor.



As indicated by the above chart, M.G. Science has always maintained very high standards in academics. We invariable achieve more than 90 percentile in the university exam year after year and many university toppers belong to M. G. Science. In the CBCS system no students are declared failed as they can be carried forward to the next semester. However, at the departmental level, based on the examination scores, there is a review of results for both internal and external exams. In every semester, departmental meetings with the principal are organized where the performance and problems of students are discussed and new required strategies are developed and implemented. Even the IQAC/academic committee of the institute takes stock of the performance of the students in the university examination. The trend of the result shows the consistent improvement in the academic standard at the institute.

2.5.6 Detail of the significant improvements made in ensuring rigor and transparency in internal assessment during the last four years and weight assigned for overall development of students (weight age for behavioral aspects, independent learning, communication skills etc.)

The institute has standard norms of transparency throughout the evaluation system. It begins from the declaration of exam dates, paper setting, invigilation to the announcement of result. The standard policies are followed in all the aspects of

examination. Answer sheets are shown to the students if they are dissatisfied with their results.

Even the internal marks are put on the notice boards and the students are apprised about the procedure followed in awarding the internal marks. Any discrepancy in the assessment can be brought to the notice of the faculty and rectified. The weightage assigned for the overall development of students is 5% in the annual system.

2.5.7 Does the institute and individual teachers use assessment/evaluation as an indicator for evaluating student performance, achievement of learning objectives and planning? If 'yes' Provide details on the process and cite a few examples.

The individual teachers do consider the evaluation as an indicator of student's level and their requirements. Internal and university exams are one of the major factors of analysis of students - their strength and weakness, their competence and requirements. Individual teachers informally categorize the students into two major groups- weak and highly competent. The weak group is provided remedial courses, extra facilities and personal guidance. If needed they are even allowed to repeat the practicals. Generally students are weak in English and computer usage. So, they are given extra training in language lab and computer lab. We encourage students for SCOPE programs. For the advanced learners, we arrange special workshops for the advanced instruments such as IR, HPLC etc. They are also given information about higher studies, their requirements and facilities. We try to develop their aptitude for research activities. Over the years it is noticed that their involvement in seminars and conferences has increased. They have become now more interested about research projects, research fellowships.

2.5.8 What are the mechanisms for redressal of grievances with reference to evaluation both at institute and university level.

The standard mechanism for redressal of the grievances regarding evaluation works is in place at the institute and this is done as per the rules and regulations of the Gujarat University. The students are shown their answer sheets if they are dissatisfied with their internal exams. Any dissatisfied student may apply for checking the assessed answer books. In case of university tests, tutorial project works, any dissatisfied student may approach (1) the Controller of exams, Gujarat University (2) the HOD (3) Principal for any grievances. Regarding University results, students if disqualified can apply for reassessment within 15 days of declaration of result. The University appoints a neutral panel of examiners for reassessing the answer sheet.

2.6 Student performance and learning outcomes

2.6.1 Does the institute have clearly stated learning outcomes? If 'Yes' give details on how the students and staff are made aware of these?

The main focus of the institute is to create an environment for the all round development of the students in all the spheres of academia which not only includes university results but also their all round development in the fields ranging from sports to cultural activities. The main purpose of our institute is to focus on the learning process which can bring the desired learning achievements. We organize workshops, expert lectures and seminars to provide certain tips to enhance learning abilities of our students. We analyze the results of our students, their weakness and strengths through formative assessments activities. The learning outcomes with respect to academic, sport and extracurricular activities are displayed on the notice board and certificates are awarded every year during the Annual Prize Distribution. There is the roll of honour put up at the entrance of the institute where the names of toppers of each year are listed. The winners in different competitions are felicitated during the annual function. Special coaching to sports persons, special training to those with various talents are arranged especially before the youth festival of the university. Notices are on special display on the main notice boards as mark of our appreciation towards some of our gifted students.

2.6.2 Detail any significant innovations in teaching/Learning/Evaluation introduced by institution?

The major innovation introduced by the institute is hands-on training programmes and the involvement of the students in the projects earned by different departments. The collection of feedback from the students and our annual teaching planner are significant apparatus for the students to keep track of the forthcoming events at the institute. The digital learning facility has gone a long way in improving their teaching-learning experience. Remedial coaching for the disadvantaged section is another innovative practice which has opened the doors for broad based coaching. The students' participation in seminar has broadened the horizon of the students about the latest trends in the specific fields of their interest. Various community services organized by N.C.C. and NSS units have given them the opportunity to experience the life beyond academia.

2.6.3 How are the teaching, learning and assessment strategies of the institution structured to facilitate the achievements of intended learning outcome?

The key aspect for an under graduate college is the conventional classroom teaching and MGSC takes pride in its reputation for the regular classroom teaching. This regular teaching is supplemented by modern means of teaching technology like projectors,

power point presentation, project based learning. Activities like workshops, seminars and hands-on training give them an edge as they are exposed to practical aspects of learning. Every department organizes minimum of four to five workshops or training programme to catapult the learning experience of the participants. The use of advanced instruments generally used in industries gives them the rich experience of dabbling with technology.

For an instance, the institute received the project for soil analysis from the Govt. of Gujarat and the students got the opportunity to put their skills to test for the real time project.

Year	Number of soil sample analyzed	Number of students involved in the analysis
2010-2011	15,177	41
2011-2012	7,972	17
2012-2013	9,687	20

We arrange special workshops/lectures for students regarding NET, SLET, JNU, research fellowship exams. They are also given training for writing research papers and for preparing research proposals.

2.6.4 What are the measures /initiatives taken up by the institution to enhance the social and economic (Quality jobs, entrepreneurship, innovation and research aptitude) of the courses offered?

The institute has adopted a policy to focus on the holistic development of students which equip them for future challenges in the world outside. The extension activities of NSS and NCC help in generating awareness about social issues and problems. The students can connect themselves with the society more easily. The institute organizes lectures on entrepreneurship, development of small scale industries, research awareness etc. We also have campus interviews in collaboration with industries. The institute invites experts from industries to motivate students and provide them information about the nature and quality of jobs they can get. They are also told about the skills and abilities required in industries. We have a Placement Cell which organizes interviews to expose our skilled deserving students to the requirements of various industries. It helps them in getting good jobs as well as discharging their duties with more efficacies. This year, companies such as TCS, Reliance, Star pharma came for campus interviews. Some of our courses have industrial training as part of their syllabus which prepares the students with experience of industries. The

COP courses are designed to train students for career advancement. MGSC offers 4 COPs which has improved the chances of getting jobs for them.

2.6.5 How does the institution collect and analyzed data on students learning outcomes and use it for planning and overcoming barriers of learning?

We get data from university results, internal exams results, seminars feedbacks, job placements records, award of research following, record of the performance of students in various national and state level competitive exams like NET, SLET, different government exams. On the basis of the analysis of these data, we come to know of our weak areas in order to do better. Many students come from Gujarati medium schools and studying in English medium college could be a big handicap, but the Institute offers foundation course in English which helps them brush up their skills in English. We plan some workshops and training sessions to develop the skills of our students in the use of advanced instruments. This helps to develop their research aptitude and research orientation. We run many IT related courses for our students in our self sufficient Embedded System laboratory. We have tie ups with Center for Environment Education (CEE) Ahmedabad and also with Ahmedabad Municipal Corporation (AMC) to extend our services for betterment of society.

2.6.6 How does institution monitor and ensure the achievement of learning outcome?

The true barometer of learning outcome comes through the final result and the placement students find at the end of their course. The university results are by far par excellence and students at M G Science Institute pass with flying colours. The institute has an excellent record when it comes to the placement of the students in the industry. Many students get the admission in the institutes of repute in different parts the country. This is also reflected by the Alumni association of the institute which has many members who have gained prominence in the different walks of life. M.G. Science Institute has remained a top draw for the students in around sixty years of its existence.

2.6.7 What is the graduate attributes specified by the institute/affiliating university? How does the institute ensure the attainment of these by the students?

The graduate attributes of M.G. Science Institute are wedded to its vision. The institute was established at the dawn of India's independence to spread the scientific temper in the pre-dominantly trader community of Gujarat under the inspiration of India's Iron man Sardar Patel. The following graduate attributes are achieved through various

activities like community orientation, environment consciousness, technical training, capacity building, cultural programmes, and many more carried out on the campus.

- Our Institute focuses on all round development of the students that is mental, physical, social, creative and spiritual progress, so that the students can give their very best shot in life.
- The purpose is to develop students in such a way that they may form a highly productive and constructive unit of society. This enables them to serve the society better.
- The graduates are expected to be properly skilled in the use of scientific instruments.
- They should have scientific approach and aptitude for research.
- They are made to be more responsible and committed to society, state, and nation.
- As graduates when they pass out in addition to their subject, they have rational outlook and sufficient knowledge of science and technology.
- They are supposed to be able to visualize future needs and plan accordingly. Our Institute aims and plans continuously to bring in change keeping in mind the requirements of the students and their goals.

CRITERION - III
RESEARCH, CONSULTANCY
AND EXTENSION

CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION

3.1 Promotion of Research

3.1.1 Does the institution have recognized research centre/s of the affiliating University or any other agency/organization?

M. G. Science Institute is a prominent research center where the legendary scientist, Dr. Vikram Sarabhai initiated his research in space science which led to the birth of Physical Research Laboratory. Currently, the institute has state of the art Plant and Animal Tissue Culture centers where Ph. D. students, M. Sc. as well as UG students and various Faculty Members of other institutes use the facilities for their research work. Departments of Chemistry and Microbiology have instrument laboratory where students carry out their Ph. D. work.

3.1.2 Does the Institution have a research committee to monitor and address the issues of research? If so, what is its composition? Mention a few recommendations made by the committee for implementation and their impact.

M. G. Science Institute has a very sound and congenial environment for research in pure and applied sciences. Most departments have state-of-the-art laboratories where faculty members are encouraged to conduct research studies. There is a research committee, mainly to facilitate all research related activities. The committee comprises of the Principal and one faculty member from each department who is actively engaged in research work.

The committee recommended that there should be a workshop / seminar for proposal writing and research methodology so that more and more faculty members can be involved in research. Because of the recommendation of this committee, all departments have successfully organized state or national level seminars.

3.1.3 What are the measures taken by the institution to facilitate smooth progress and implementation of research schemes/projects?

By and large, the chief investigator is given full autonomy and support to carry out the respective research work. Each person is given a work space. Resources are released in time and accounting and auditing is done by the staff of accounts office. The Faculty Members are even supported with advanced training and helped in capacity building. Special leave is granted for attending seminars and paper presentations, and recognition

is always given, not only during the annual day celebrations but time and again, at various academic functions. Infrastructure and technology support such as software (SPSS, GIS, ERDAS, etc.) is offered. The accounting department helps in auditing the accounts and in the timely submission of the utilization certificates.

3.1.4 What are the efforts made by the institution in developing scientific temper and research culture and aptitude among students?

- Students from every department are motivated to conduct a research project. They are encouraged to present these reports during practical exams and present oral or poster presentations at various regional or state workshops, seminars, etc. Students also conduct research seminars themselves.
- The Faculty Members also present their research findings and share other ideas with the students. This is an incentive for both, faculty and students.
- Many students take part in State level seminars and present posters. When National and other seminars are held on campus, it is compulsory for selected students of the respective departments to actively participate as well as volunteer and thus learn the nitty-gritty of holding and participating in academic seminars. (e.g. Botany Department held two major state level seminars: one on Environmental Education & Disaster Management and the other on Biodiversity where, students participated actively either as participants or as volunteers).
- The table given below shows detail of activities and students benefited.

Sr. No.	Activity	Date	No. of Students Benefited
1.	Training in Media preparation	August, 2011	11
2.	Training in sterilization techniques	September, 2011	11
3.	<i>In vitro</i> regeneration of <i>Solanum tuberosum</i> L.	Sept. 2011 to Jan.2012	11
4	Outreach Programme on PTC for School students	29-11-2011	19+1
5.	Workshop on Basic PTC for school students	8-12-2011	20+1
6.	M.Sc. dissertation	Dec.2011 to Apr.2012	1
7.	Workshop on Basic PTC for school students	27-1-2012	20+2

- Students are also taken on study tours/ field trips where they get real exposure to learning through observation. Final year Botany students have been going for Botanical study tours to Daman, Panchmarhi, Mahabaleshwar, Polo forest and Mt. Abu with their Faculty Members and other taxonomists. This, along with the fact that every Botany student completes at least one project as part of the regular syllabus, probably reflects in the high number of Botany students opting for M.Sc. studies. Similarly, students of Geology, Zoology, Physics & Chemistry Departments are also taken for excursion every year to inculcate scientific temperament.
- Students are encouraged to take part in seminars and workshops like the Gujarat Science Congress, SCIXL and GIBiON (Gujarat Integrated Biology Network) and other competitions like Minaxi Lalit awards.
- Students of Biochemistry, Botany, Microbiology, Physics, Chemistry and Geology departments regularly participate in the state level seminars and workshops and give the oral as well poster presentations.
- The Chemistry department celebrated the international year of chemistry in 2011 by organizing popular and technical lectures.
- The Department of Botany organized workshop on Remote Sensing Applications in Ecosystem.
- Students of Botany Department regularly perform research studies and present projects during exams.
- M.G. Science Institute has entered into MoU with CEE for SAYEN (South Asian Environment Network) and students are encouraged to participate in various environment awareness programmes like, planting and adoption of trees, solid waste management, etc. Similarly MOU is also signed with ISR (Institute of Seismological Research).

3.1.5 Give details of the faculty members' involvement in active research (Guiding student research, leading Research Projects, engaged in individual/collaborative research activity, etc.)

Many of the Faculty Members are involved in active research through guiding projects and also in collaborative projects. Last year, the undergraduate students were guided by the faculty of different departments for their project work pertaining to the syllabi. There are 10 Ph. D. guides in various subjects (Botany, Geology, Chemistry and

Microbiology). Some of our Faculty Members have collaborative projects with other institutes and being funded by various funding organizations. They have the following ongoing/completed projects in the last five years.

Details of Research / Consultancy projects

Name of faculty and Department	Duration	Title of the project	Funding agency and sanction no.	Total grant
	Years			
Minor				
Dr. H.V. Pandya - Biochemistry		Bioprospecting of water Hyacinth	(GUJCOST) under student SciTech scheme	25,000/-
Dr. Vijaya Nadagouda - Biochemistry	27-12-2006 to 2009	Screening Of Antimicrobial Principals From Local Mushrooms	UGC (Minor research project)	85,000/-
Dr. B. B. Baldaniya - Chemistry	March 2008 Completed	Synthesis and characterization of some new bioactive molecules	UGC, Govt of India. F No.47- 027/07	90,000/-
Dr. P.K. Patel - Chemistry	In progress	A Green way of corrosion Inhibition of Aluminium in Alkaline Media	UGC (Minor Research Project)	80,000/-
Dr. P.K. Patel and Dr. J.J. Vora - Chemistry	16-01-2008 In progress	Analytical method development and Validation of some Anti-cancer drug doses forms	UGC (Minor Res. Project) (File no. 47-114/07)	75,000/-
Dr. P.M. Solanki - Geology	April 2010 Completed	Prospects of Lignite in Kachchh, Gujarat	Gujarat Council on Science and Technology (GUJCOST)	18,400/-
Dr. C.V. Pandya - Physics	January 2007 Completed	Theoretical Study of electron Impact cross section of some molecules	UGC	70,000/-
Dr. C.V. Pandya - Physics	October 2010 Completed	Calculations of electron molecule ionization cross sections	UGC	1,60,000/-
Dr. M.B. Thaker – Statistics (Co-investigator)	2012 in progress	Comparing diseased and normal human breast cancer tissue fluorescence spectra in visible regime through Statistical tools Viz. ANOVA and Tucky-Cramer post hoc test	UGC	80,000/-
Dr. N G. Kotdiya - Zoology	11-01-2012 in progress	Impact of physico-chemical parameters on plankton diversity in some freshwater ponds of rural area of Ahmedabad, Gujarat	UGC	1,95,000/-

Dr.Z. N. Rathod Botany	25-01-2012 in progress	Phytochemical studies and Propagation of <i>Argyrea speciosa</i> (Linn.F) sweet	UGC	91,000/-
Major				
Dr. B.K. Jain (Botany)	01-04-2010 - 31-03-2011 Completed	Bioclimatic Index	Space Application Centre, ISRO, Ahmedabad	5,00,000/-
Dr. Alpana M. Shukla Botany	March 2008 completed	Coastal Zone management	Space Application Centre, ISRO, Ahmedabad	6,00,000/-
Dr. Alpana M. Shukla Botany	Sept. 2008 onwards	Mapping of Ecological conditions and monitoring of Global Coral Reefs	Space Application Centre, ISRO, Ahmedabad	49,00,000/-
Dr. Alpana M. Shukla Botany	01-06-2012 and ongoing	Microwave Remote Sensing for soil moisture content	Space Application Centre, ISRO, Ahmedabad	18,00,000/-
Dr. Alpana M. Shukla Botany	01-06-2013 and ongoing	Integrated Coastal Zone Management project	Space Application Centre, ISRO, Ahmedabad	25,00,000/-
Prerna Patel - Biochemistry	April 2012 till today.	Monitoring and evaluating the nutritional health status and morbidity of school going children and initiating nutrition health education programme	DST, New Delhi	1,20,000/-
Dr. Rina D. Shah - Chemistry	16-01-2008 Completed	Studies of Phase Transfer Catalysis in the synthesis of aminoheterocycles by Thorpe Cyclization	University Grant Commission, Sanctioned No. 47-122/07 16-01-08	90,000/-
Dr. R.D. Shah - Geology	June 2007 Completed	Snow and Glaciers	Space Application Centre, ISRO, Ahmedabad	21,00,000/-
Dr. R.D. Shah & Dr. N.Y. Bhatt - Geology	October 2008 -March 2010 Completed	Wetland Mapping of India	Space Application Centre, ISRO, Ahmedabad	23,00,000/-
Dr. R.D. Shah - Geology	April 2009 Completed	Lunar Surface Mineral Identification from Chandrayaan -1 data	Space Application Centre, ISRO, Ahmedabad	7,00,000/-
Dr. R.D. Shah - Geology	April 2011 in progress	Monitoring of Himalayan Glaciers Phase - II	Space Application Centre, ISRO, Ahmedabad	21,35,000/-

Dr. N.Y. Bhatt - Geology	11-02-2006 to 31-03-2012 Completed	Subsurface Bioturbation Patterns in a Modern Tidal Flat Environment along the Navinal Coast, Kachchh Window, Gujarat	Department of Science and Technology, Government of India. (DST no.: SR/S4/ES-21/Kachchh Window/P5)	13,96,800/-
Dr. N.Y. Bhatt - Geology	01-07-2009 - 31-03-2013 Completed	Sequence Stratigraphy of the Middle Jurassic sediments of Patcham Islands, Kachchh, Western India: An Ichnological Approach	Department of Science and Technology, Government of India. (DST no.: SR/S4/ES-350/2008)	12,82,200/-
Consultancy				
Dr. R.D. Shah, Dr. N.Y. Bhatt & Dr. P.M. Solanki - Geology	November 2008 - June 2009 Completed	Geohydrological Studies of extension of Mangrol (Vastan) Lignite Mines of GIPCL, Bharuch and Surat District, Gujarat	Gujarat Industries Power Company Limited (GIPCL), Bharuch	3,40,000/-
Dr. R.D. Shah, Dr. N.Y. Bhatt & Dr. P.M. Solanki - Geology	October 2011 - February 2012 Completed	(Bauxite Deposits of Jamnagar District) Geological mapping & rapid reserve assessment for bauxite using satellite images, Remote sensing and GIS techniques in Jamnagar district - Gujarat State	Gujarat Mineral Development Corporation (GMDC), Ahmedabad	1,40,00,000/-

The institute also sends students for training in industries and other organization such as Star Pharma, Anand, Mother Dairy, NIOH, Green Cross Lab., etc. as part of their syllabi.

Faculty members are encouraged to do quality research and those who have not yet completed their doctorate are encouraged to do so. The institute also has links with premier institutes like GMDC, GCRI, PRL, ISRO, Science City, etc. for research related activities. Some of the departments like Biotechnology/Biochemistry, Physics, Geology and Chemistry of the institute have internship programmes in industry as a part of syllabus.

Ten teachers of the institute have been recognized as Ph.D. Guide from various universities like; Gujarat University - Ahmedabad, Kadi Sarva Vidhyalaya University – Gandhinagar, K. S. K.V University - Kutchch. North Gujarat University - Patan, Ganpat University- Kherva & JTT University- Rajasthan.

Table of Ph.D. Guides:

The institute is a throbbing Ph. D centre where so many faculty members are engaged in guiding researchers.

Details of Ph. D. Students

Sr. No.	Research Guide	Affiliating University	No. of Students	
			Ongoing	Completed
1	Dr. B. K. Jain	North Gujarat University	-	10
		Gujarat University	5	-
		Ganpat University	2	1
		Pacific University	1	-
		JJT University	-	-
2	Dr. N. Y. Bhatt	Gujarat University	6	4
		North Gujarat University	1	-
3	Dr. R. D. Shah	Gujarat University	5	-
4	Dr. P.K. Patel	Gujarat University	2	1
5	Dr. J. J. Vora	JJT University	1	-
6	Dr. Paras Solanki	Gujarat University	4	-
7	Dr. Vivek Upasani	KSVV, Gujarat	3	-
		JJT University	1	-

Faculty members participate in conferences and present their research findings. Several Faculty Members have presented papers/posters in the last five years. The College encourages such endeavors by providing infrastructural as well as administrative assistance. Duty leave is also granted.

The concise list of publication:

Books authored (including Visiting faculty)	Nil
Contribution in books	77
Publication in peer reviewed Journals	109
In International data base	3
Oral Presentations	102
Poster Presentations	30

3.1.6 Give details of workshops/ training programmes/ sensitization programmes conducted/organized by the institution with focus on capacity building in terms of research and imbibing research culture among the staff and students.

The following programmes were conducted with a focus on capacity building in terms of research and imbibing research culture among the faculty and students. The College also encourages students to take part in active research, and capacity building workshops are conducted for both faculty and students. Since 2007, various departments have organized the following seminars, workshops and academic activities:

Table shows seminars / conferences organized by the institute:

Title of the seminar Name of the department	Funding Agency	Amount Sanctioned	Date of Organization
Recent Development in Mineral Exploration Technology, Geology	UGC	70,000 /-	29 th & 30 th August , 2008
Frontier Advance in Chemical Science, Chemistry	UGC	55,000 /-	25 th & 26 th March 2008
Chaos Theory, Mathematics	GUJCOST	10,000 /-	10 th & 11 th April 2008
Environment Education & Disaster Risk Reduction, Botany	UGC	45,000 /-	28 th & 29 th January 2009
Teaching Zoology in the 21 st Century: The Road Ahead, Zoology	GUJCOST	50,000 /-	18 th July 2009
Current Trends in Microbiological Science, Microbiology	UGC	1,12,500 /-	23 rd & 24 th Jan., 2010
Impact of Statistics on Science and Society, Statistics	UGC	60,000 /-	25 th & 26 th Feb., 2010
Geomorphology-Evolution of Landforms Through Time, Geology	UGC	84,375/-	8 th & 9 th March,2013
Current Development in Microbial Biotechnology	GSBTM	40,000/-	2 nd Jan., 2011
Creating Awareness and sharing Benefits of Knowledge of Biodiversity	GBB	1,50,000/-	23 rd Jan.,2014
Laboratory Astrophysics-Application to Cosmic Dust	IUCAA & GUJCOST	1,55,000/-	12 th & 13 th Nov., 2010
Biochemistry, A Science beyond compartmentalization	UGC & GSBTM	1,45,000/-	20 th & 21 st Dec., 2013
Climate Change Scenario past, Present & Future	GUJCOST	50,000/-	10 th Aug., 2013
Capacity Building for Laboratory and Administrative Staff: from Instruments to Instruction	UGC	30,000/-	5 th March, 2012
Health, Yogic & Adapted Physical Education in Various Disabilities	UGC	85,000/-	18 th & 19 th Feb., 2013

Details of workshop/training programs/ sensitization programs conducted/ organized by the institution.

Date	Programs/ Topic	Beneficiary
Biochemistry		
30/11/2011	One day workshop : Techniques in Molecular Biology	School teachers of Ahmedabad

8/02/2013	Assessment of Health status based on body composition	Students and Faculty Members
Botany		
4/3/2010	Plant tissue culture – Techniques and Applications	Students
4/3/2010	Prospective of Micropropagation in Agriculture.	Students
10/2/2013	Utility of good conduct in maintaining positive health	Students and Faculty Members
7/3/2013	Lecture on scholarships for higher studies abroad	Students
	Anti mycobacterium drug discovery	Students and Faculty Members
15/3/2013	Hands on Training on plant tissue culture	Ten Faculty Members of various colleges
September 2010 to January 2011	Training on callus generation from leaves of <i>Taebnemontana</i>	T.Y.Students
August 2010	Training in media preparation	Students
September 2010	Training in sterilization techniques	Students
29/11/2011	Outreach programme on PTC	School students
Geology		
19 th Jan., 2009	The memory of late shri Chandan Goswami.	
Mathematics		
10/4/2008 to 11/4/ 2008	GUJCOST sponsored state level seminar on Chaos theory	
16/3/2010	Versatility of MATLAB software for mathematical problems.	Students and Faculty Members
Microbiology		
2/2/2012	Lecture on: Basis of cell culture	Students and Faculty Members
31/8/2012	Biofuels	Students and Faculty Members
8/9/2012	Importance of microbiology	Students and Faculty Members
25/9/2012	Bioinformatics: Introduction and applications	Students
14/2/2013 to 18/2/2013	Immunodiffusion and Ouchterlony techniques	Students
16/2/2013 to 18/2/2013	Rapid identification of bacteria by Hi media:H125 <i>Enterobacteriaceae</i> Kit	Students
16/2/2013 to 18/2/2013	Molecular Biology techniques: gDNA isolation from bacteria and agarose gel electrophoresis	Students
11/5/2013	Lecture on: Probiotics	Students and Faculty Members
24/8/2013	Role of microbiologists in Pharma	Students and Faculty Members
6/10/2012 to 7/10/2012	Two days hands on training workshop for students on MS- Office	Students
11/1/2013	Life style: Killer or Savior (causes and prevention of cancer)	Students and Faculty Members
14/2/2013 to 16/2/2013	Three days seminar (regional) on: Entrepreneurship Awareness Camp	Students
11/3/2013 to 16 /3/2013	Hands on training in Photomicrography	Semester II students
Physics		
11/2/2012 to 12/2/2012	Workshop on E content development and management	Students
29/3/2012	Optical fibers	Students and Faculty Members
Statistics		
8/3/2010	Hands on training workshop: Data analysis using MS-Excel.	Faculty Members

17/1/2012 to 27/1/2012	PASW SPSS-18	Students
6/2/2012 to 16/2/2012	PASW SPSS-18	Students
22/11/2012	Exploring statistics using Microsoft Excel	Faculty Members
Zoology		
6/2/2010	Seminar on Animal tissue culture	Students and Faculty Members
21/12/2010 to 5/1/2011	Biotechnology	Students
26/12/2011 to 5/1/2011	Biotechnology	Students
30/7/2011	Brmhvisfot thi Bombvisfot ni anantyatra	Students and Faculty Members
6/8/2011	Different culture media and maintenance of viral cells	Students and Faculty Members
9/8/2011	Scope of cell culture technology	Students and Faculty Members
24/8/2011	Indian forest service Orientation Camp	Students and Faculty Members
27/8/2011	Scope of cytogenetics in clinical lab	Students and Faculty Members
4/1/2012	Hands on training in media filtration, centrifugation and pH meter	Students
21-23 March 2012 and 26/3/2012	Workshop on Centrifugation and Cell counting by Haemocytometer	Students

3.1.7 Provide details of prioritized research areas and the expertise available with the institution.

Every department has its own priority research area. The College Faculty Members have their following research areas:

Department	Prioritized research area	Expertise available
Biochemistry	Solid Waste management, Effluent treatment biological methods, Pigment production by biological sources, Anti-microbial assessment, Nutraceutical,	Solid Waste Management, Nutrition survey and monitoring
Botany	PTC, Phytochemistry, RS and GIS in Plant Sciences, Biodiversity Conservation, Floristic studies, Embryology, Ethnobotany, Environmental studies	RS and GIS, Allelopathy, Ethnobotany, Floristic studies, soil and water testing
Chemistry	Analysis of API and Intermediate Pharmaceutical preparations by HPLC and LCMS-MS	Corrosion and complex studies, Green Chemistry, Organic Synthetic drugs, Water analysis
English	ELT, Testing	Testing in English
Geology	Hydrogeology, stratigraphy, ecnology, sedimentology, environmental geology	Mining geology, economic geology, hydrogeology, remote sensing and GIS

Mathematics	Applied Mathematics	General theory of relativity
Microbiology	Spirulina as alternative food, potential micro organism of waste degradation	Biodegradation of waste, Mushroom cultivation
Physical Education	All kinds of outdoor games	Sports for mentally challenged children
Physics & Electronics	Solid state Physics, Theoretical Physics, Electroluminescence	Differential scattering, Theoretical Physics
Statistics	Sample Survey, Industrial Research	Business analytics
Zoology	Human genetics, Blood cancer, Thalassemia	Planktons

3.1.8 Enumerate the efforts of the institution in attracting researchers of eminence to visit the campus and interact with teachers and students?

M. G. Science Institute makes sincere and ardent efforts to attract eminent researchers to visit campus and share their knowledge as well as inspire faculty and students. State and National seminars, workshops, special technical and popular lectures are organized where eminent scholars are invited. Workshops for capacity building are organized to enhance knowledge, interaction and learning.

No.	Scientist Visited	Department
1	Dr. D O Shah, Florida University, USA	Chemistry
2	Dr. Jignesh Dalal, Haematologist bone marrow transplant surgeon , Kansas, USA)	Zoology
3	Dr. Unnat Pandit (AGM Calida Pharma)	Chemistry
4	Prof. S. K. Menon(Rtd. Head of Department of Chemistry, Gujarat University	Chemistry
5	Prof. K H. Khikhaliya(Department of Chemistry, Gujarat University)	Chemistry
6	Dr. J J Vora (Head of Department of Chemistry, North Gujarat University	Chemistry
7	Dr, M T Chhabria (Principal L M College of Pharmacy)	Chemistry
8	Dr. Alok Dhavan (Director, Life Science Department, Ahmedabad University)	Botany & Chemistry
9	Dr. Umesh Tarpada (Govt. Science college, Gandhinagar)	Chemistry
10	Dr. Ravi Gor, Director, Babasaheb Ambedkar Open University	Statistics
11	Dr. Bhavin Shah, Professional consultant	Statistics
12	Dr. M. S. Subharekha, Sr. manager, Biomedical data sciences India, GSK Pharmaceuticals Ltd.	Statistics

3.1.9 What percentage of the faculty members has utilized Sabbatical Leave for research activities? How has the provision contributed to improve the quality of research and imbibe research culture on the campus?

Ours is a grant-in-aid College and the Govt. does not easily sanction sabbatical leave. No faculty has applied for sabbatical leave, but many have completed their Ph.D. while

they are in service. Faculty Members have consistently participated in International and National Conferences as well as actively participated in State Level Seminars and Workshops so that they have received international exposure and advantage in research output through publications, interaction with reputed scientists and knowledge sharing. Currently, 03 Faculty Members have enrolled for Ph.D. and 5 have applied for Ph. D. guideship.

Sr. No.	Name of participant	Title of paper	Place	Period	Funding agency
1	B. K. Jain	Traditional medication in Tapkeshwari hill range of Bhuj taluka, Kachhch district, Gujarat (India)	Melbourne, Australia	from 23 rd July to 30 th July, 2011.	AES and Centre for International co-operation in science
2	B. K. Jain	Pre and post pollination changes in amino acid and mineral composition of anther and stigma in <i>Solanum surattense</i> Burm.f..	Melbourne, Australia	from 23 rd July to 30 th July, 2011.	AES and Centre for International co-operation in sciences
3.	B. K. Jain	Antibacterial and antifungal potentiality of leaf extract of <i>Phyllanthus fraternus</i> Webste	Antalya, Turkey	From 2 nd Nov., to 5 th Nov., 2013	UGC, New Delhi
4	P. K. Patel	Investigation of Corrosion Inhibition & Effect of Some Novel organic Dyes on the Corrosion of M575 Aluminium – Magnesium Alloy in alkaline Media	Londoncity Canada	23 rd to 26 th Nov., 2011	UGC, New Delhi
5	J. H. Parikh	2-hydroxy-4-n-Butoxy-5-bromo Acetophenone Thio semicarbazone as an Extraction Spectrophotometric Reagent for Nickle (II)	New Orleans, Louisiana, 70112 United States of America	03-07 March-2008	Self
6	J. H. Parikh	Study of Fungal Cultures for Their Ability to Textile Dyes and Their Use in Industrial Effluent Treatment	Philadelphia PA, USA	17 th to 21 st March 2013	UGC, New Delhi
7	Rina D. Shah	Green Chemistry and Engineering Conference on Green pathways for the synthesis and ring cleavage of tetrazolopyrrolopyrimidines using eco friendly phase transfer catalysis	Meriland, USA	23-25 th June 2009	UGC, New Delhi
8	C. V. Pandya	Electron atom/molecule collision study	Triestey, Italy	20-30 April 2009	International centre of theoretical physics, Triestey, Italy
9	C. V. Pandya	Total ionization Cross sections for Si ₂ , SiC, SiC ₂ and Si ₂ C molecules. (ii) Total ionization Cross Section for fluoro acetylene molecule	Lanzhou-China	24-30 July, 2013	UGC, New Delhi
10	Vijaya Nadagouda	Growth Characterization of Pure Mycelial <i>Ganoderma</i> sp. Culture Isolated from Gujarat, India	Philadelphia PA, USA	17 th to 21 st March 2013	UGC, New Delhi
11	D. G. Chaudhary	Special Olympics world Summer Game, Head of the Deligation, India	Shanghai, China		Bharat Special Olympics
12	D. G. Chaudhary	Trained the Treainers Training Programme	Singapore	28 th To 4 th April 2013	Special Olympics International
13	B. B. Baldaniya	One-Pot Synthesis of Functionalized Tetrahydro-1 <i>H</i> -Pyrimidines via Multicomponent Microwave Assisted Reaction, Characterized by X-Ray Diffraction and Screening for Anti cancer Activity	Toronto, CANADA	20 th -23 rd May 2013	UGC, New Delhi

14	B. B. Baldaniya	Synthesis and characterizations of ethyl 4- {[4-(2-isonicotinoylhydrazino)-6-(aryl amino)-1, 3, 5-triazin-2-yl] amino} benzoates as biological active agents	Toronto, CANADA	20 th -23 rd May 2013	UGC, New Delhi
15	B. B. Baldaniya	Exploring the Diversity on (THPM) Scaffold for Novel Thiazolopyrimidines, Characterization by X-ray Diffraction, Anticancer Activity	MA USA ,	28 th and 29 th April 2011	UGC, New Delhi
16	B. B. Baldaniya	New Synthesis Heterocyclic compounds, Characterization and Biological Activity as Anti-Cancer Drugs	Chicago Illinois, USA	8 th – 13 th March 2009	UGC, New Delhi
17	B. B. Baldaniya	Synthesis, anticancer activity and QSAR studies of some new Tetrahydropyrimidines	Chicago Illinois, USA	25 th Feb – 2 nd March, 2007	UGC, New Delhi

3.1.10 Provide details of the initiatives taken up by the institution in creating awareness/advocating/transfer of relative findings of research of the institution and elsewhere to students and community (lab to land)

In order to create awareness among students, the institute has been organizing research seminars on campus and encouraging students to participate in various seminars and workshops. It has been promoting research culture among its students by making under graduate student take up projects and surveys and present their findings during exams. For this, all the necessary facilities are provided by the institute. Services like soil testing, taxonomical certification and lectures are regularly provided by the Faculty Members to neighborhood Science colleges. Many students of different schools are given training in the laboratories of the Institute and are made aware about the latest techniques in the laboratory.

3.2 Resource Mobilization for Research

3.2.1 What percentage of the total budget is earmarked for research? Give details of major heads of expenditure, financial allocation and actual utilization.

The college does not have any specific budget for research and development; however the college authorities facilitate the use of laboratories, equipment, energy and materials for ongoing research projects.

3.2.2 Is there a provision in the institution to provide seed money to the faculty members for research? If so, specify the amount disbursed and the percentage of the faculty members that has availed the facility in the last four years?

The Institute has not yet provided seed money to faculty members for research.

3.2.3 What are the financial provisions made available to support student research

projects by students?

Student research projects are mainly pertaining to their syllabi and generally do not require any financial support. Still, logistic and material expenses are paid for where ever necessary. The expertise and resources of the Institute are utilized for the research projects of the students. For the student research project grant is available from GUJCOST under SCITECH Scheme. The suitable project will be given up to Rs. 25000/- grant for the research.

3.2.4 How does the various departments/units/staff of the institute interact in undertaking inter-disciplinary research? Cite examples of successful endeavors and challenges faced in organizing interdisciplinary research.

Dr. M. D. Shukla, Dr. J. H. Parikh and Dr. Vijaya N. of the departments of Microbiology, Chemistry and Biochemistry, respectively, have been interacting for interdisciplinary research project of degradation of Azo Dye by using white rote fungus. The challenge, as far as any research in pure or applied science is concerned, is the time management between syllabi completion and time for research.

Dr. Rina Shah of Chemistry Department collaborated with CEPT UNI during 2005-2008 for a project on ‘Zero OPC Concrete Products’.

Dr. Alpana Shukla of Botany Department collaborates with SAC, ISRO in her multidisciplinary project on Microwave remote sensing for soil moisture as well as remote sensing for coral reef mapping. She has been helped informally by Faculty Members of Statistics Department statistical calculations to be included as extra dimension for presentation at seminars. The researchers of all the departments make use of statistics departments for the sampling techniques.

Apart from this, Faculty Members of most departments interact with each other on an informal basis for advice and knowledge sharing for researches.

3.2.5 How does the institution ensure optimal use of various equipment and research facilities of the institution by its staff and students?

The Institute has research facilities in all its departments. The Bioscience facilities include plant tissue culture, DNA finger printing, microbiological studies, protein studies, immunological work and phytochemical analysis. The Chemical lab has facilities for organic synthesis, physical and electro chemistry studies, etc.

Some of the Faculty Members have used these facilities to complete their doctoral work. Some students of Gujarat University also make use of this facility for their Ph.D.

or to complete their M. Phil. and M.Sc. dissertation. Students from other Universities like the North Gujarat Uni. and S. P. Uni. have made use of our facility in the past. The department of Physics has an experimental lab in Embedded Systems where students from Engineering college have used the facility. Departments with research facilities announce hands-on training from time to time for the college students. Students of various institutes of higher learning enroll for the SPSS course in the computer lab of statistics department.

3.2.6 Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facility? If 'yes' give details.

The table given below shows the detail of special grant received from various funding agencies for developing research facility in the institute

Sr. No.	Funding Agency	Project	Department	Amount Received
1	UGC	Instrument Maintenance Facility Career Oriented Courses (Embedded system)	PHYSICS	21,00,000.00 10,00,000.00
2	DBT	STAR College Scheme	MICRO, BOTANY, ZOOLOGY, MATHS, STATS, BIOCHEM	60,50,000.00
3	GMDC	Construction of Geological Museum	GEOLOGY	17,00,000.00
4	FIST-DST	Infrastructural Development of Chemistry Department.	CHEMISTRY	25,00,000.00
5	KCG-Govt of Gujarat	Soil Testing	CHEMISTRY	24,14,160.00
6	UGC	Career Oriented Programmes	CHEMISTRY, MICROBIOLOGY, GEOLOGY	7,00,000.00

3.2.7 Enumerate the support provided to the faculty members in securing research funds from various funding agencies, industry and other organizations. Provide details of ongoing and completed projects and grants received during the last four years.

The Institute is helpful to any of its faculty in all possible ways to secure research funds from various funding agencies. They are provided with timely information about project, encouragement, useful tips for project writing, stationery, travel grant, duty leave etc. Some of the Faculty Members had attended a seminar organized by KCG on the nuances of writing project proposal. Some Faculty Members have also served as resource persons for such programmes.

There are no of research projects completed and ongoing. The exhaustive list is given in 3.1.5.

3.3 Research Facilities

3.3.1 What are the research facilities available to the students and research scholars within the campus?

The library of the Institute is equipped with new books pertaining to a wide range of topics. Journals suggested by different departments are added every year. All departments have internet facilities. The library has INFLIBNET facilities. Faculty member are encouraged to work towards their doctorate or acquire Ph. D guideship. They are also given duty leave for presenting papers in seminars or serve as resource persons. The laboratories in Geology, Microbiology, Botany, Zoology, Biochemistry and Chemistry are equipped with latest equipments which become handy in conducting research in the institute. Students are also given opportunities to carry out research and surveys. Undergraduate students from most departments have to do research under the guidance of a faculty, as part of their syllabi. Scholars and technicians are invited from outside to train students and faculty in advanced skills. (e.g. Microbiology Department organized training on molecular biology) Seminars are also conducted for students and faculty.

The facilities available are:

Sr. No.	Departments	Research Instruments
1	Biochemistry	Cooling Rotary Shaker, UV (trans. Epi) Illuminator, Vacuum Apparatus, Cooling Microfuge, Laminar Air flow, SDS-PAGE Apparatus
2	Botany	Laminar Air flow, Gel Electrophoresis, UV chamber, Autoclave, Colorimeter, Distillation unit, Microscope with Camera
3	Chemistry	FT-IR, UV Spectrophotometer, Digital Melting Point
4	Geology	Theodolite, brunton compass, universal petrological mouse, Carl-zeiss petrologiccil microscope
5	Microbiology	Cooling Centrifuge, Spectrophotometer, Incubator Shaker
6	Physics	Microcontroller kits, Digital storage oscilloscope, 2 LCD projectors
7	Statistics	20 Computers, SPSS, LCD Projector, Two cupboards
8	Zoology	pH meter, TDS meter, E.C. meter, Turbidity meter, Centrifuge, Tronocular Microscope with Microscopy attachment, Electronic Balance
9	Mathematics	10 Computers, MATLAB-software

3.3.2 What are the institutional strategies for planning, upgrading and creating infrastructural facilities to meet the needs of researchers especially in the new and emerging areas of research?

The Institute has been proactive in upgrading and adding new infrastructure facilities as required by the research faculty and the PG centers for Chemistry and Geology. Based on the projects and financial availability upgradation is done. In the last five years various equipments such as FT-IR, UV-Spectrophotometer, Shakers, cooling centrifuge, etc. and software such as SPSS, IGIS, ERDAS, etc. have been added. The Institute has Wi-Fi connectivity which facilitates research work. As many as 14 new journals have been subscribed in the library which can be helpful to all.

3.3.3 Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facilities?? If 'yes', what are the instruments/ facilities created during the last four years.

The Institute collaborates with many industries for internship of its students. Botany, and Geology have collaborative research programmes with nationally acclaimed institutes like SAC, Ahmedabad, Special grants in form of financial aid are offered but not in the policy of the management. Still, internships and training are imparted to UG and PG students by various prestigious industry like Torrent pharma, IFFCO, Maghmani organics, GMDC, GPCB, NIOH, Dishman Pharma, etc.

3.3.4 What are the research facilities made available to the students and research scholars outside the campus / other research laboratories?

The PG students of the department of chemistry are sent on industrial training to various organizations like Torrent, Dishman, IFFCO, etc. Students of Voc. Biotechnology go to other research laboratories like Green Cross and Prathama for training. Students of the COP also have to undertake training with an industry or write a project report. Moreover, the institute has access to INFLIBNET (N-List) on campus which is made use of by our faculty and students. Some faculty and students also make use of facilities at the British Library and Gujarat Uni. Library as well

3.3.5 Provide details on the library/ information resource centre or any other facilities available specifically for the researchers?

The MGSc library offers journals and advanced manuals for most subjects. The library also has INFLIBNET facility which is used by faculty who is in active in research. Computers, internet with Wi-Fi and sophisticated equipments are also available for

researchers at the Institute.

3.3.6 What are the collaborative research facilities developed/created by the research institutes in the college. For ex. Laboratories, library, instruments, computers, new technology etc.

The following facilities were added by the Institute to facilitate research on campus.

1. PASW SPSS-18, a computer software for data analysis, was added,
2. Plant Tissue Culture laboratory
3. Animal Cell Culture laboratory
4. Embedded System laboratory
5. IMF laboratory
6. Microbiology laboratory
7. COP laboratory
8. Instrument laboratory (Chemistry & Microbiology Department)

3.4 Research Publications and Awards

3.4.1 Highlight the major research achievements of the staff and students in terms of:

Patents obtained and filed (process and product): None

Research studies or surveys benefiting the community or improving the services:

- The Biochemistry Department did a survey of Nutritional Health status of school children (age 10-14 yrs). It has also started survey of effect of lifestyle on the stress level and nutritional health status of women (18-50 yrs) in Gujarat.
- The Department of Physics conducted a survey on the choice of subject among the students the institute 2008.
- Microbiology Department conducted a survey of Solid Waste Management at Shivanand Ashram.
- Botany Department conducted a survey of Flora at the campus in three consecutive years- 2012, 2013 and 2014.
- Dr. M. D. Shukla of Microbiology Department has been training women of tribal area in the cultivation of mushroom. This has resulted into a drastic change in their socio-economics status as they can subsist with the income generated from this project.
- The Chemistry Department worked for the soil sample analysis which helped the farmers of Gujarat in determining the quality of the land and the appropriate crop needed for it.

3.4.3 Give details of publications by the faculty members and students:

	Sr. No.	Title	Name of the Journal/Book	Year of Publication
Chemistry				
Dr. J. J. Vora	1	Analytical method validation of stability indicating HPLC method for determination of assay of Memantine Hydrochloride tablet	International Journal of Pharmacy Practice and Drug Research	2014 (Accepted)
	2	The Corrosion and Inhibition Of Copper and Tin-Lead Alloy in Acidic Conditions	Journal of the Indian Council of Chemists	2012
	3	Corrosion Study of Tin-Lead Alloy and Brass by souring substances	Ultra Scientist of Physical Sciences	2002
	4	Corrosion Study of Tin-lead Alloy and Brass by Tartaric and Citric Acids	Transactions of the Saest	2000
	5	Corrosion Study of Tin-Lead Alloy and Brass by Different Organic Acids	Transactions of the Saest	1997
	6	Effect of Cations of Metals on Corrosion of Tin-Lead Alloy and Brass	Transactions of the Saest	1997
Dr. P. K. Patel	1	Estimation of Tadalafil Tablet Dosage Form by High-Performance Liquid Chromatography	Journal of AOAC International (JAOAC)USA	2010
	2	Metal Complexation Studies of 1-(4-carboxy-3-hydroxy-N-methyl phenyl amino methyl) benzotriazole	E-Journal of chemistry	2009
	3	RP-HPLC Method for the Estimation of Donepezil Hydrochloride in Tablet Dosage Form.	E-Journal of chemistry	2009
	4	Synthesis, Antibacterial and Antifungal activities of s-triazine derivatives	E-Journal of chemistry	2009
Dr. Rina D. Shah	1	An improved Synthesis and efficient chemoselective reduction of fused tetrazolopyrimidines under phase transfer conditions	<i>Synthesis</i>	2006
	2	Thorpe Cyclization in the synthesis of pyrazole using phase transfer condition	<i>Synthetic Commun.</i> ISSN 0039-7911	2008
	3	7-(4-Bromophenyl)-9-phenyl-7H-pyrrolo[3,2-e]tetrazolo[1,5-c]pyrimidine,	<i>Acta Cryst.</i> , , ISSN 1600-5368	2010
	4	7-(4-Chlorophenyl)-9-phenyl-7H-pyrrolo[3,2-e]tetrazolo[1,5-c]pyrimidine	<i>Acta Cryst.</i> , , ISSN 1600-5368	2010
	5	7-(4-Methoxyphenyl)-5-methyl-9-phenyl-7Hpyrrolo [2,3:4,5]pyrimido[1,6-d] tetrazole	<i>Acta Cryst.</i> , , ISSN 1600-5368	2010
	6	PTC Assisted Nucleophilic displacements in pyrrolopyrimidines in, 19 (2011).327	<i>Chemistry for sustainable development</i> , ISSN 1817-1818	2011
	7	A comparative Studies on 3-aminothiophenes using PTC	<i>EJChem.</i> , , ISSN 1600-5368	2010
	8	Mukesh M. Jotani and Edward R. T. Tiekink; 12-(4-Chlorophenyl)-7-methyl-10-phenyl-3,4,5,6,8,10-hexaazatricyclo[7.3.0.0.2,6]dodeca-1(9),2,4,7,11-pentaene	<i>Acta Cryst.</i> , , ISSN 1600-5368	2010

	9	12-(4-Methoxyphenyl)-10-phenyl-3,4,5,6,8,10-hexaazatricyclo[7.3.0.02,6]dodeca-1(9),2,4,7,11-pentaene	<i>Acta Cryst.</i> , , ISSN 1600-5368	2010
Dr. B. B. Baldaniya	1	Ethyl (2Z) 2-(2-chlorobenzylidene)-7 methyl-3-oxo-5-phenyl-2,3-dihydro-5H-1,3-thiazolo [3,2-a] pyrimidine-6-carboxylate.	<i>Acta Cryst.</i> (2007).E-63, o1937- o1939.	2007
	2	Ethyl 2-[(Z)2-[3-chlorobenzylidene]-7 methyl-3-oxo-5-phenyl-2,3-dihydro-5H-1,3-thiazolo [3,2-a] pyrimidine-6-carboxylate.	<i>Acta Cryst.</i> (2008). E-64, o739	2008
	3	Crystal structure of(4Z)-2-phenyl-4-(3,4,5-trimethoxybenzylidene)-1,3-oxazol-5(4H)-one. Japan XXI Congress of the International Union of Crystallography.	IUCr August 24 – 25, 2008 Osaka, Japan	2008
	4	Crystal structure of Ethyl (2Z) 2-(4-acetyloxybenzylidene)-7methyl-3-oxo-5-phenyl-2,3-dihydro-5H-[1,3]-thiazolo[3,2-a] pyrimidine-6-carboxylate.	Analytical science (2008) vol-24, The Japan Society for Analitical Science.	2008
	5	Synthesis and Antimicrobial Activity of 5-Imidazolinone Derivatives	Indian j. Pharm. Sci., 2009, 71 (1): 90-94	2009
	6	Synthesis, antibacterial and antifungal activities of s-triazine derivatives,	E-Journal of Chemistry (2009) Vol- 6(3) 673-680	2009
	7	Crystal Structure of Ethyl (2Z, 5R)-2-benzylidene-7-methyl-3-oxo-5-phenyl-2,3-dihydro-5H-[1,3] thiazolo [3,2-a] pyrimidine-6-carboxylate.	Journal of Chemical Crystallography, 39 (12), 898- 901. DOI 10.1007/s10870-009-9587-z	2009
	8	(2Z)-Ethyl 2-(4-methoxybenzylidene)-7-methyl-3-oxo-5-phenyl-2,3-dihydro- 5H-1, 3 thiazolo-[3, 2-a]pyrimidine-6-carboxylate.	<i>Acta Cryst.</i> E66(3), o599-o600. doi:10.1107/S1600536810004812	2010
	9	(2Z)-Ethyl 2-(2-acetoxybenzylidene)-7-methyl-3-oxo-5-phenyl-2,3-dihydro- 5H-1, 3 thiazolo-[3, 2-a]pyrimidine-6-carboxylate.	<i>Acta Cryst.</i> E66(3), o762-o763. doi:10.1107/S1600536810007853	2010
	10	2-Oxo-2H-chromen-3-yl)benzamide	<i>Acta Cryst.</i> E66(4), o778. doi:10.1107/S1600536810008275	2010
	11	4- {[(4Z)-5-Oxo-2-phenyl-4,5-dihydro- 1,3-oxazol-4-ylidene]methyl}phenyl acetate	<i>Acta Cryst.</i> E66(5), o1175. doi:10.1107/S1600536810004911	2010
	12	Synthesis of N^2 -(Aryl)- N^4 , N^6 -bis (6, 7-dichloro-1, 3-benzothiazol-2-yl)- 1, 3, 5-triazine-2, 4, 6-triamines as biological potent agents.	E-Journal of Chemistry (2010) Vol- 7(1) 210-214	2010
	13	Synthesis, Characterization and biological activity of 5-arylidene-3-(6,7-dicloro-1,3-benzothiazol-2-yl)-2-phenyl-3,5-dihydro-4H-imidazol-4 ones.	E-Journal of Chemistry (2010) Vol- 7(1) 81-84	2010
	14	(2Z)-Ethyl2-(3-methoxy-4-acetyloxybenzylidene)-7-methyl-3-oxo-5-	<i>Indian J. Phys.</i> 84 (9) 1177-1182	2010

		phenyl-2,3-dihydro- 5H-1, 3 thiazolo-[3, 2-a]pyrimidine-6-carboxylate.	(2010)	
	15	Synthesis characterization, anticancer activity and QSAR- studies of some new tetrahydropyrimidines, European journal medicinal chemistry,	Med.Che.Res medicinal chemistry research 4-november 2010 DOI: 10.1007/s00044-010-9481-4	2010
	16	Crystal structure optimisization, semi-empirical quantum chemical calculation and antibacterial activity of (4Z)-2-phenyl-4-(3,4,5-trimethoxybenzylidene)-1,3-oxazol-5(4H)-one,	Adv.Appl.Res., vol.5 No2(2013) pp135-140	2013
Dr. N. K. Chavda	1	Synthesis, characterization and antimicrobial study of newly Thiosemicarbazone	Der Chemica Sinica, 2013, 4(4):36-42	2013
	2	Synthesis and characterization of 5,10,15,20-tetra[(3,4-dimethoxy-6-nitro)phenyl]	Der Chemica Sinica, 2011, 2 (1): 21-26.	2011
	3	Evaluation of stability constants of 1-(3-bromo-4-hydroxy-5-methoxy benzylidene) thiosemicarbazide(TRM-1) with copper (II), cobalt (II) and nickel (II) complexes by pH metric method	Der Pharma Chemica, 2013, 5(4):244-251	2013
Dr S. N. Zala	1	Bhavi Bharatna Shilpi - Vivekanand	Pharma Vision-2013	2013
	2	Synthesis, physicochemical and biological activity studies of ion-exchange resin derived from melamine and phenylenediamine with formaldehyde	Journal of Chemical and Pharmaceutical Research,	2013
	3	Campus kahani	Yugdrashta Gujarat	2010
	Biochemistry			
Dr. H.V. Pandya	1	Bioautographicalstudy of staphylococcus aureus inhibition by crude extract of a selected whiterotfungi	Advances in Biological sciences	2008
	2	Antimicrobial activity of fruit body extract from two local mushrooms	Advances in Biological sciences	2008
Dr. V. R. Nadagouda	1	Screening of Fungal Cultures for Their Dye Degradation Or Decolorisation Ability	Research Journal Of Chemistry And Environment	2012
	2	Bioautographical study of Staphylococcus aureus inhibition by crude extract of a selected white rot fungus	Advances in Biological Sciences	2008
	3.	Screening of local mushroom fruit body extract for antimicrobial activity	Advances in Biological Sciences	2008
Pinal Patel	1	Effect of sucrose concentrations on regenerative potential of <i>Bacopa monnieri</i> (L.) PENNELL.	Indian Drugs	2007
	Botany			
Dr. B.K. Jain	1	Allelopathic effects of <i>Chenopodium album</i> L. on <i>In vitro</i> seed germination of <i>Triticum aestivum</i> L. J	J. Indian Bot. Soc.	2009
	2	Effects of lights of different colours on <i>in vitro</i> pollen germination and tube growth in <i>Luffa aegyptica</i> Mill.	J. Swamy Bot. Cl.	2009
	3	Effects of sucrose, boron, calcium magnesium and nitrate during <i>in vitro</i> pollen germination in <i>Luffa aegyptica</i> Mill.	Prajna- A Journal of Life Sciences, S.P.University	2010

4	Ethnobotanical significance of some weed species of Malvaceae, Caesalpiniaceae, Amaranthaceae and Asteraceae of Sabarkantha district of North Gujarat .	Life Sciences Leaflets	2011
5	Study of sacred groves of Poshina range forest of Sabarkantha district of North Gujarat	J. of Ehnobotany	2010
6	Ethnomedicinal uses of some important plants recorded from forest areas of Shoolpaneshwar wildlife sanctuary., Narmada	Ehnobotanists	2009
7	Allelopathic effects of <i>Lantana camara</i> L. on in vitro seed germination of <i>Phaseolus mungo</i>	Inter. Jour Plant Sci	2010
8	Genetically modified crops –issues and challenges -A review.	Inter. Jour Plant Sci	2010
9	Study of sacred groves and sacred plants of Poshina forest range of Sabarkantha district (North Gujarat)	Life Science Bulletin	2010
10	Floristic study of sacred groves of Poshina forest range of sabarkantha district, North Gujarat. – Accepted for publication in	Inter. Jour. Plant Sci.	2011
11	A contribution to the wetlands in Kachchh district of Gujarat. Asian	Jour of Environ. Sci.	2010
12	Reproductive phenology of <i>Rhizophora mucronata</i> Lamk. Mangrove species of Rhizophoraceae in the gulf of Kachchh, Gujarat, India.	Phytomorphology	2010
13	Allelopathic response of <i>Gloriosa superba</i> L. to <i>Avena sativa</i> .	Bioscience Guardian	2011
14	Effect of sucrose, boron, calcium, magnesium and nitrate during <i>in vitro</i> pollen germination in <i>Luffa aegyptica</i> Mill.	Prajna- Journal of pure and applied science	2010
15	Allelopathic effect of <i>Chenopodium album</i> L. on <i>in vitro</i> seed germination of <i>Triticum aestivum</i> L	Jour. Indian Bot. Soc.	2009
16	Ethnobotanical study of sacred groves of Poshina forest of sabarkantha district, North Gujarat .	Inter. Jour. Plant Sci.	2100
17	Allelopathic effect of <i>Digera muricata</i> (L.) Mart on in vitro seed germination of <i>Pennisetum typhoides</i>	Inter. Jour. Plant Sci.	2011
18	Diversity pattern of habitats and vascular plant species in Tapkeshwari Hill Ranges in the Kachchh island, Gujarat, India.	Indian Forester	2100
19	Effect of leaf extract on <i>in vitro</i> pollen germination and pollen tube growth in <i>Luffa aegyptica</i> Mill and <i>Momordica charantia</i> L	The Bioscan	2011
20	The study of socio economic plants of Balaram sanctuary (North Gujarat)	Life Sciences Leaflets	2012
21	The study of anthropogenic pressure on the biodiversity of Balaram sanctuary (North Gujarat) .	Life Sciences Leaflets	2012
22	Taxonomical survey on Balaram sanctuary of North Gujarat.	Bio Chemical Science	2012
23	Quantitative analysis of aquatic macrophytes in certain wetlands of Kachchh district, Gujarat.	Prajna jour. Pure & appli. Sci.	2011
24	Phytochemical analysis of leaf extract of <i>Phyllanthus fraternus</i> . Res.	Jour. Recent Sciences	2012
25	Histochemical localization of some metabolic	Jour. Swami bot. Cl.	2012

		substances in pollen and pollen tube of <i>Luffa aegyptica</i> Mill.		
	26	To study the genetic variations among the <i>Azospirillum lipoferu</i> isolates using randomly amplified polymorphic DNA (RAPD) marker.	Inter. Jour. Scientific Res. and Dev.	2013
	27	Effects of extracts of different parts of <i>Gloriosa superba</i> L. on <i>in vitro</i> seed germination and growth in <i>Avena sativa</i> L.	Inter. J. Pl. Sci:	2013
	28	Ecology and marketing pattern of ethnomedicinal plants of Kachchh district, Gujarat.	Life Sci. Leaflet	2013
	29	Effect of extract of different parts of <i>Gloriosa superba</i> L. on <i>in vitro</i> seed germination and growth in <i>Avena sativa</i> L.	Inter. J. Plant Sci.	2013
	30	Pre and post pollination changes in amino acids and mineral compositions of anther and stigma in <i>Solanum surattense</i> Burm.F.	Prajna- J of Pure and Applied Sci.	2012
	31	Correlation of plankton diversity and density with physicochemical parameters in Godhavi pond, rural area of Ahmedabad.	The Microbes .	2013
Dr. A. M. Shukla	1	Mangrove mapping using Remote Sensing	Adv.Bio.Sci.	2007
	2	Monitoring the impact of anthropogenic activities on the coastal ecosystem using remote sensing satellite data	Life Sciences Leaflets	2012
	3	RISAT-1 SAR Calibration-Recent results	Scientific report SAC/EPSCA/MPSG/CVD/CAL-VAL/09/12	2012
	4	Inventory and monitoring of coral reefs of UAE, Arabian Gulf, using remote sensing techniques	"Climate Change and Island and Coastal Vulnerability", Springer: 2013 Capital Publishing Company	2013
Dr. N.R. Modi	1	A record of tree wealth of M.G.Science Institute	Life science leaflet	2010
	2	Biodiversity Conservation Through Urban Green Spaces: A Case Study Of Gujarat University Campus In Ahmedabad	International Journal Of Conservation Sciences	2013
	3	Ecological Investigations Of Shahwadi Wetland	International Journal Of Pharmacy And Life Sciences	2013
	4	Floristic Wealth Of Kankaria Lake Region In Ahmedabad, Gujarat	Asian journal of conservation sciences (communicated under Review)	Comm.
	5	Application Of The Programming Languages 'C' And 'C++' In Teaching Taxonomy	Wetland science	2011
Dr. Z.N. Rathod	1	Micropropagation of <i>Enicostemma littorale</i> Blume	<i>J of Indian Botanical Society</i>	2008
	2	<i>In vitro</i> regeneration and production of saponins of <i>Bacopa monnieri</i>	Nat Acad Sci Lett	2009
	3	<i>In vivo</i> and <i>in vitro</i> Comparison of Phytosterols of <i>Bacopa monnieri</i> and <i>Centella asiatica</i> Well known Memory Enhancing Plants	<i>J of Indian Botanical Society</i>	2009

	4	Physiology of Floral Initiation A Review	In Flower Retrospect and Prospect; Ed Y Vimala Scientific Publication Delhi	2010
	5	Multiple shoot regeneration from the callus culture of <i>Centella asiatica</i> under the influence of various concentrations of PGRs	<i>Prajna</i> - Journal of Pure and Applied Sciences	2010
	6	Micropropagation Of Selected Medicinally Useful Plants – A Mini Review	Advances in Botany Indian Botanical Society Commemoration Volume	2011
	7	Plantlet Regeneration From Leaf Explant Of <i>Convolvulus Pluricaulis</i> via Somatic Embryogenesis	J. of Indian Botanical Society	2012
Geology				
Dr. N. Y. Bhatt	1	Sequence Stratigraphic Analysis of the Mixed Siliciclastic-Carbonate Sediments (Middle Jurassic) of the Patcham Island, Kachchh, Western India: An Ichnological Approach.	Special Publication No. 1 - Geological Society of India	2013
	2	Facies Controlled Synaeresis Cracks in Mixed Siliciclastic-Carbonate Sediments of Middle Jurassic of Patcham Island, Kachchh, Western India.	Journal of the Geological Society of India.	2013
	3	Significance of trace fossils in Transgressive-Regressive Cycles: an example from the Callovian-Oxfordian sediments of the Gangeswar Dome, SE of Bhuj, Mainland Kachchh, India.	Annual International Conference on Geological and Earth Sciences (GEOS 2012). Copyright c GSTF 2012; ISSN: 2251-3361; doi:	2012
	4	Environmental Significance of Trace Fossils of the Mesozoic rocks of Kas Hills, North-East Mainland Kachchh, Western India.	Gondwana Geological Magazine,	2012
	5	Sedimentology and depositional environment of the rocks of Kaladongar Formation (Middle Jurassic), Patcham Island, Kachchh, Western India.	Gondwana Geological Magazine,.	2012
	6	Trace fossil assemblages in mixed siliciclastic-carbonate sediments of the Kaladongar Formation (Middle Jurassic), Patcham Island, Kachchh, Western India.	Journal of the Geological Society of India.	2012
	7	Ichnology of the Jurassic sediments of Gangeswar Dome, Southeast of Bhuj, Mainland Kachchh, India.	Gondwana Geological Magazine.	2012
	8	Sedimentological Significance of the Subsurface Bioturbation Patterns in Tidal Flat Environment along the Navinal Coast, Kachchh, Western India.	Gondwana Geological Magazine	2010
	9	Sequence Stratigraphic Significance of Sedimentary Cycles and Trace Fossils in the Middle Jurassic Rocks of Kuar Bet Area, Patcham Island, Kachchh India.	Gondwana Geological Magazine,	2010
	10	Burrowing Activities of Goby Fish in the Recent Intertidal Mud Flats along the Navinal Coast, Kachchh, Western India.	Journal of the Geological Society of India.	2009

	11	<i>Asteriacites quinquefolius</i> - Asteroid Trace Maker from the Bhuj Formation (Lower Cretaceous) of the Mainland Kachchh, Western India.	Journal of the Geological Society of India.	2008
	Statistics			
Dr. M. B. Thaker	1	An empirical analysis for the determinants of bank deposits of Urban Cooperative Banks in Gujarat	Sankhya vignana	2007
	2	Milk growth in cows and buffeloes of Prantij using homeopathic medicines”, Sankhya Vignan	Sankhya vignana	2007
	3	An application of operating characteristics curve in online strength monitoring of ready mixed concrete	New Building materials and construction world, (International Journal)	2007
	4	Data envelopment analysis	Sankhya vignana	2008
	5	Efficacy of homeopathic treatment in malaria : A study in slums of Ektanagar and Borsad Chowkdi areas of Anand	Sankhya vignana	2008
	6	Education, Economic Growth and Economic development of India	Sankhya vignana	2009
	7	Petro Retail Mix Elements: A Study of Indian Market	Journal of International Business and Economics	2012
	8	Data analysis of fungal mycelial radial growth on different nutritional media using statistical tools	IJAR (International Journal for academic reviews), ISSN: 2347-7997	2014
Dr. R. D. Chaudhari	1	Model-based variance estimation under unequal probability sampling	Metrika	2003
	2	On variance estimation for the GREG estimator	Prajna- Journal of Pure and Applied Sciences	2011
	Zoology			
Dr. N. G. Kotdiya	1	Determination of Water Quality Index and Suitability of a Rural Freshwater body in Ghuma Village, District Ahmedabad, Gujarat.	Life Science Leaflet	2013
	2	Comparative study of phytoplankton diversity in two fresh water body of rural area of Ahmedabad.	Life Science Leaflet	2013
	3	Plankton diversity and density in Ghuma lake, rural area of Ahmedabad.	Global Research Analysis	2013
	4	Correlation of plankton diversity and density with physico-chemical parameters in Ghuma lake, rural area of Ahmedabad.	Global Research Analysis	2013
	5	Correlation of Plankton Diversity and Density with Physico-Chemical Parameters in Godhavi Pond, Rural Area of Ahmedabad	The Microbes	2013
	6	Seasonal variation and analysis of plankton in Manipur lake rural area of Ahmedabad.	Life Science Leaflet	2013

3.4.2 Does the Institute publish or partner in publication of research journal(s)? If ‘yes’, indicate the composition of the editorial board, publication policies and whether

such publication is listed in any international database?

The Institute does not publish or partner in publication of research journal(s).

3.4.4 Provide details (if any) of Faculty members who have received awards:

Recognition received by the faculty members from reputed professional bodies and agencies, nationally and internationally

Dr Alpana Shukla received “President’s Appreciation Medal” for services done in the Indian Society of Geomatics, in 2013

Incentives given to faculty members for receiving state, national and international recognitions for research contributions.

The meritorious announcement is displayed on the college notice board and mentioned in the college magazine also.

3.5 Consultancy

3.5.1 Give details of the systems and strategies for establishing institute-industry interface?

There is a constant interaction between the industry and the institute. Many of the Alumni members are also industrialists and the institute is successful in establishing links with them.

The placement cell is also active in the collaboration with the industry. There are instances when the industry felt that the syllabus of a particular discipline is not as per the need of the industry, so the institute invited the experts from the industry to orient students about the latest development in the industry. To cite an example, the statistics department established the linkage with TCS, Epoch Research Centre, and Pharmastat to make the students aware about the latest trends in the industry. There are workshops organized at the institute where experts from the various disciplines are invited to guide the students regarding the requirement of the industry. SPSS course is developed at the institute at the behest of the industries like TCS and Pharmastat.



3.5.2 What is the stated policy of the institution to promote consultancy? How is the available expertise advocated and publicized?

The institute is at the forefront in promoting research and consultancy. It gives total freedom to its faculty members who are actively engaged in consultancy. The management also allows the faculty to share profit in the revenue generated from the consultancy. The management share from the profit earned is also utilized in the development of infrastructure on the campus.

3.5.3 How does the institution encourage the staff to utilize their expertise and available facilities for consultancy services?

The institute encourages consultancy services, and offer expertise to other bodies. The faculty members have total autonomy to use their expertise and indulge in consultancy services. They are allowed to co-ordinate their teaching and consultancy simultaneously.

3.5.4 List the broad areas and major consultancy services provided by the institution and the revenue generated during the last four years.

The table below shows the consultancy services that have been given:

Name of Consultancy service	Department	Total amount received	Duration
Soil Testing	Chemistry	24,14,160.00	3yrs.
Geology	Geology	1,40,00,000.00	1yr

3.5.5 What is the policy of the institution in sharing the income generated through consultancy (staff involved: Institution) and its use for institutional development?

In order to encourage consultancy service, the institute has a well stated policy in revenue sharing where the major part goes to the faculty engaged in consultancy while the remainder of the money- the management share is also utilized by the institute for the infrastructural development of the institute. The institute also encourages free consultancy to encourage the spirit of knowledge sharing and expertise.

3.6 Extension Activities and Institutional Social Responsibility (ISR)

3.6.1 How does the institution promote institution-neighbourhood-community network and student engagement, contributing to good citizenship, service orientation and holistic development of students?



The outreach programmes of the Institution generate a lot of interest among the students, thus paving the way for their all-round development. The outreach programmes are in tune with the mission and goals of the institution. The programmes include environmental awareness camps, tree-plantation weeks, sports meet, literacy drives, blood donation

camps, voluntary services to Blind People's associations, health and hygiene awareness programmes.

Empowerment of Tribal Women, A project of Microbiology Department

The students and faculty members of the microbiology department has been visiting the tribal areas of Gujarat and working for the empowerment of tribal women. They imparted them the training in mushroom cultivation and helped them in earning their livelihood. The students had also trained 300 women in Chhota Udaipur region in mushroom plantation. This project of M.G. Science Institute has made a huge difference in the lives of these tribal people as they become financially independent. The students also received service training, which contributed to community development. The research of Dr. M. D. Shukla, a faculty member of Microbiology Department in mushroom cultivation has benefited the under-privileged sections of society in a major way.

A Sports Meet for mentally challenged Children



The institute was a host to the Special Olympics for the mentally challenged children. The sports director of the institute is actively involved in hosting and guiding mentally disabled children in the participation of various sports. Under his leadership, the sports meet for the mentally disabled children was organized in Surat in the year 2010. In this meet more than 700 students from 26 districts of Gujarat participated.

Blood donation camps

Blood Donation Camp is an annual feature of the college activities. The college is abuzz with blood donors when such a camp is organized in the college. The college in collaboration with the Red Cross, organizes blood donation camps. The success of this blood donation camps is gauged from the fact that a large amount of blood is collected every year from this institute. The students of the college work as volunteers in these camps and help create awareness regarding the importance of donating blood.



Health awareness camps

The Faculty Members of Microbiology Department deliver lectures at various places on various health issues. Dr. Vivek Upasani of Department of Microbiology presented programmes on AIDS awareness. The Microbiology Department arranged a Thalassemia awareness programme and the student of first semester are checked up for thalassemia. A leading gynecologist was invited to deliver a lecture for girl students on 'womanhood'. The Biochemistry Department arranges talk shows on nutrition and waste disposal.

Environment awareness programmes



ainable environment practices. Under the co-ordinatorship of Dr. Alpana Shukla, faculty, Botany Department there is a 'mitti club' in the institute, which organizes 'tree plantation and adoption

The Institute has entered into an MoU with CEE (Centre for Environment Education, Ahmedabad) and SAYEN- South Asian Youth Environment Network Club for



programmes' on the campus and spreads environmental awareness. The lush green landscaping of the campus is the result of the efforts made by the Botany Department of the college. The club also organizes poster competition, cleanliness drive, and talk and film shows on environment issues in the institute. The Institute makes an attempt to include the topics like green house effect, climate change etc in the syllabi through the various faculty members who are the members of the various board of studies. The entire Sem-II has been given the elective course on 'Environmental Science'. State level seminar on Environmental Education and Disaster Management was organized by the Botany Department. Some environmental awareness games played then, were the highlight of the event, apart from talks by renowned Environmentalist Shri Kartikeya Sarabhai, Director, Center for Environment Education, Shri. Sahu, Zoo Superintendent, Dr. A.S. Reddy, and others.

Participation in Science Exhibition & Science Fairs

The students regularly participate in science exhibition and seminars organized at different places all over India. Many students of the institute participate in the Science Excellence programme of Gujarat University and win many prizes.

3.6.2 What is the Institutional mechanism to track students' involvement in various social movements / activities which promote citizenship roles?

The institute takes keen interest in the matters related to socially important issues. Through the activities of NCC and NSS, the social activities are undertaken and promoted. The students organize various programme on the campus and create awareness about the issues relevant to the youth.

The rally was organized under the banner of red ribbon club to make students aware about AIDS and blood donation.

The coordinators of NCC and NSS keep track of students' involvement in such activities.

3.6.3 How does the institution solicit stakeholder perception on the overall performance and quality of the institution?

The institute receives rave reviews from various stake holders for their activities which promote all round development of students. NAAC accredited M.G. Science with an 'A' grade previously. The institute has also received the grant under DBT star college scheme. India Today has included MG. Science as one of the best 50 science colleges in India. The media also take note of MG. Science as a prominent college

for its contribution in the field of academics. The rush of the students for the first year admission is indicative of the popularity of the institute in Gujarat.

3.6.4 How does the institution plan and organize its extension and outreach programmes?

Budgetary details for last four years, list of major extension and outreach programmes and their impact on the overall development of students.

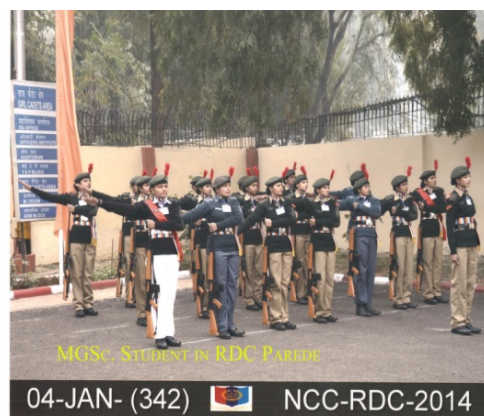
The institute has a number of outreach programmes. They are funded through UGC, DBT and ALUMNI. Under the extension activity grant of UGC, the VISA club of Microbiology Department has written and published booklets for creating awareness on diabetes, cancer and AIDS. These booklets were distributed amongst the rural populace. The Microbiology department organized the health camp in the slum area of Dudheshwar, Ahmedabad where the people were tested for their blood sugar and blood pressure. The whole programme was handled by the students of Microbiology department under the guidance of faculty members. Under the STAR college scheme of DBT, the students of the prominent schools of Gujarat studying in the 11th Science were given hands-on training on the plant tissue culture which is the part of their syllabus. Similarly the teachers of the various colleges of Ahmedabad were also given hands-on training on the similar aspect. The Alumni of the institute also fulfilled the needs of the economically backward students by paying their fees.

3.6.5 How does the institution promote the participation of students and faculty members in extension activities including participation in NSS, NCC, YRC and other National/ International agencies?



and 26th January. The students are also getting opportunities to attend RDC at New Delhi. Many students clear C –certificate exams. The NSS centre is recently started

The institute has a vibrant NCC set up which conducts various activities for promoting nationalism among the students. They actively participated in the programmes on 15th August



and they are planning many activities to create socially conscious students. Through the efforts of Dr. Alpana Shukla of Botany Department., the institute has entered into an MoU with CEE (Centre for Environment Education, Ahmedabad) and SAYEN- South Asian Youth Environment Network Club for sustainable environment practices. The institute undertook *chiranjeev* programme to train the children of class-4 employee of Ahmedabad Education Society.

3.6.6 Give details on social surveys, research or extension work (if any) undertaken by the college to ensure social justice and empower students from under-privileged and vulnerable sections of society?

The Microbiology department under the stewardship Dr. M.D. Shukla undertook the extension activity to help the tribal women from the backward sections of society. They were trained in mushroom cultivation using compost to make them financially self-reliant. They also wrote and published the booklets on cancer, diabetes and AIDS to create awareness about the diseases in the rural masses.



3.6.7 Reflecting on objectives and expected outcomes of the extension activities organized by the institution, comment on how they complement students' academic learning experience and specify the values and skills inculcated.

The extension activities of the institute inculcate the values like altruism, self-less service, environment awareness. By participating in extension activities, they turn out to be socially responsible citizens. The promotion of blood donation at the institute has created a lasting impact among the students' community. All these activities are carried out along with their regular academic studies. It is a sight to behold when the students of the institute enter the slum areas and educate the people about the various killer

diseases like diabetes and cancer. They also learn the lessons of environment consciousness by participating in activities like tree plantation. The students are seen counseling the first year admission aspirants about the different courses available on the campus.

3.6.8 How does the institution ensure the involvement of the community in its reach out activities and contribute to the community development? Detail on the initiatives of the institution that encourage community participation in its activities?

The various activities of the institute are the talk of the community and they are appreciated and well received by the common public. The Institute celebrates flag hoisting ceremony on 26th January and 15th August with great fanfare. The community in the neighborhood takes interest in our celebrations and some of them participate in the function organized by the institute. The school children from science stream of various schools in Ahmedabad takes advantage of our laboratories and get benefited by the training programmes. The institute regularly organizes a number of workshops, seminars, training programmes and many faculty members of rural colleges get the opportunities to participate in self development programmes. Dr. Jagruti Patel of Chemistry department with the help of her students undertakes yeoman services in creating awareness about cancer treatment among women at the Oncology centre Vasna. The women coming from lower economic strata of society are given financial help to meet the expenses involved in it. R. K. Patel of Chemistry department takes active interest in the tree plantation efforts on the campus.

3.6.9 Give details on the constructive relationships forged (if any) with other institutions of the locality for working on various outreach and extension activities

The faculty members have a working relationship with the institutes like CSC, ISRO, SAC, CEE for the number of extension activities. There are collaborative projects, knowledge sharing and related activities which help in creating scientific temper among the community.

3.6.10 Give details of awards received by the institution for extension activities and/contributions to the social/community development during the last four years.

We have so far not received any award for the extension activities; the institute receives appreciation letters from the blood banks for contributing to the cause of blood donation.

3.7 Collaboration

3.7.1 How does the institution collaborate and interact with research laboratories, institutes and industry for research activities. Cite examples and benefits accrued of the initiatives – collaborative research, staff, exchange, sharing facilities and equipment, research scholarship, etc.

The institute has a number of research projects in collaboration with the institutes of national repute. It has resulted in numerous benefits for the institute. Such efforts in collaboration have resulted into mutual benefits for both the institute and collaborating agency.

With Research laboratories	Purpose of Collaboration	Beneficiary Department
SAC	Research Project	Geology, Botany
PRL	Coastal Zone management	Botany
ISRO	Research Projects	Geology, Botany
GUJCOST	Equipment/Seminar /mineral study	Biochemistry, Geology
GIPCL Gujarat Industries Power Company Limited	Geohydrological Studies	Geology
Gujarat Mineral Development Corporation (GMDC)	Geological mapping	Geology
GBB Gujarat Biodiversity Board	Preparation of Biodiversity Register of 10 villages of Gujarat	Botany

3.7.2 Provide details on the MoUs/collaborative arrangements (if any) with institutions of national importance/other universities/ industries/Corporate (Corporate entities) etc. and how they have contributed to the development of the institution.

We have two MoUs, as under:

- 1) With Center for Environment Education, CEE, Ahmedabad for SAYEN (South Asian Youth Environment Network) for three years starting 2013.
- 2) With the Institute of Seismological Research, Dept. of Science and Technology, Raysan, Gandhinagar for the dissertation and research training of the M. Sc. and research students, faculty exchange and laboratory facility.

3.7.3 Give details (if any) on the industry-institution-community interactions that have contributed to the establishment / creation/up-gradation of academic facilities,

student and staff support, infrastructure facilities of the institution viz. laboratories / library/ new technology /placement, services, etc.

The institute has extensive networking with neighbouring institutes like PRL, SAC-ISRO, CEE.

Geology department has undertaken a consultancy project with Gujarat Mineral Development Corporation (GMDC) and the fund received from the work has been utilized in creating the Geological museum which has resulted into massive upliftment of facilities in the Geology Department.

The Zoology Department has an understanding with the INTAS Biopharmaceutical company which has immensely help the students of the Zoology department in their skill development and the technique of animal cell culture. The industry has also helped in the upgradation of the syllabus related to Biotechnology and Zoology. The design of the new laboratory for animal cell culture was suggested by the industry.

The institute has a thriving placement cell which has developed a constructive linkage with many pharmaceutical and chemical industries in Gujarat. This has resulted into fruitful placement activity in the campus.

3.7.4 Highlighting the names of eminent scientists/participants who contributed to the events, provide details of national and international conferences organized by the college during the last four years.

The Institute has organized approximately 15 Seminars, Conferences, National Workshops and State Level Workshops. The following eminent researches came to our Institute and shared their knowledge and views with Faculty and students:

No.	Name	Department	Affiliating Institute
1	Dr. Suman Govil	Microbiology	Advisor DBT, New Delhi
2	Dr. Bharat Chattoo	Microbiology	Co-coordinator, Dept. of Biotechnology, M.S. University, Baroda
3	Dr. Manjitsingh	Microbiology	Director, Mushroom research Centre, Solan, HP
4	Dr. T. Satyanarayana	Microbiology	Professor, Dept. of Microbiology, Delhi University, South Campus
5	Dr. Gita Sharma	Microbiology	Consultant in Biotechnology, Former R&D Head Zydus Cadila
6	Dr. Rohit Sharma	Microbiology	Dept. of Biotechnology, Punjab University, Chandigadh
7	Dr. Monica Sharma	Microbiology	Dept. of Biotechnology, Punjab University, Chandigadh
8	Dr. Rustom Modi	Microbiology	Former CSO, INTAS Biopharma, Ahmedabad

9	Dr. C. G. Joshi	Microbiology	Professor, Animal Biotechnology, AAU, Anand.
10	Dr. Datta Madamwar	Microbiology	Professor, Dept. of Biosciences, S. P. University, Vallabh Vidyanagar.
12	Dr. Shilin Shukla	Microbiology	Director, GCRI, Ahmedabad.
13	Dr. M. C. Sharma	Microbiology	Prof. & Head, Dept. of Biotechnology, Kadi Sarva Vishwavidyalaya
14	Dr. Rajiv Shukla	Microbiology	Professor, Animal Biotechnology, AAU, Anand.
15	Dr. Ajit Menon	Microbiology	Manager, Astron Pharmaceuticals, Daman.
16	Prof. Subrata Lahiri	Statistics	Professor, International Institute of population Studies, Bombay
17	Dr. Subharani	Statistics	Biostatistician, Synchron Research Services Pvt. Ltd.
18	Dr. M. S. Subharekha	Statistics	Sr. Manager, Biomedical Data Sciences India, GSK Pharmaceuticals Ltd.
19	Mr. Sudeesh	Statistics	Sr. SAS Trainer, SAS India Pvt Ltd.
20	Dr. Ravi Gor	Statistics	Director, Babasaheb Ambedkar Open University
21	Dr. Bhavin Shah	Statistics	Professional consultant
22	Prof. A. P. Gore	Statistics	Professor, Depart. Of Statistics, University of Pune
23	Prof. Sarayu Paranjape	Statistics	Professor, Depart. Of Statistics, University of Pune
24	Dr. K. V. Palanichamy	Statistics	Director, Biostatistics and Statistical Programming, Kendal Research
25	Jagannatha P S	Statistics	Senior Manager Biostatistics and Programming GlaxoSmithKline Pharmaceuticals Ltd., Biomedical Data Sciences India,
26	Dr Kamlesh Patel	Statistics	V. P. Statistics Department Lemda therapeutics research
27	Dr. Sood	Zoology	Former Professor Saurashtra University.
28	Dr. H. S. Singh,	Botany	Chairman, Gujarat Biodiversity Board, Gandhinagar
29	Dr. A. P. Singh	Botany	Member Secretary, Gujarat Biodiversity Board, Gandhinagar
30	Dr. Ramesh Savalia	Botany	Programme Co-ordinator, CEE, Ahmedabad
31	Dr. Aeshita Mukherjee	Botany	State Project Coordinator, UNEP-GEF Project, GBB, Gandhinagar
32	Prof. P.C. Mankodi	Botany	M.S. University Baroda
33	Prof. H.C. Patel	Botany	Head, Horticulture Department, Anand Agriculture University, Anand
34	Prof. Minoo Parabha	Botany	Former Professor, VNSGU Surat
35	Prof. Dr. O. P. Saxena	Botany	Former Head, Botany department, School of Sciences, Gujarat University.
36	Dr. Kartikeya Sarabhai	Botany	Director, CEE, Ahmedabad
37	Dr A. S. Reddy	Botany	Prof. S. P. University

38	Shri. Sahu	Botany	Superintendent of Zoo, Ahmedabad
39	Dr. M. T. Chhabaria	Botany,	Prof. L. M. College of Pharmacy
40	Dr. Alok Dhawan	Botany, Chemistry	Director, Institute of Life Science, Ahmedabad University.
41	Dr. Viral Vaidya	Botany	Doctor of Ayurveda
42	Dr. Ajai	Botany	Group Director, SAC ISRO.
43	Dr. A. S. Rajawat	Botany	Senior Scientist, SAC ISRO.
44	Dr. Y. T. Jasrai	Botany	Head, Department of Botany School of sciences, Gujarat University.
45	Dr. Pranav Trivedi	Botany	Environmental Scientist
46	Dr. Anjana Vyas	Botany	Prof. CEPT University
47	Dr. Neeta Srivastava	Botany	Sr. Scientist, PERD Center
48	Dr. L.S. Chamyal	Geology	Head & Professor, Department of Geology, M.S. University of Baroda, Vadodara.
49	Dr. Nilesh Bhatt	Geology	Professor, Department of Geology, M.S. University of Baroda, Vadodara.
50	Dr. D.M. Maurya	Geology	Associate Professor, Department of Geology, M.S. University of Baroda, Vadodara.
51	Dr. Navin Juyal	Geology	Scientist, Physical Research Laboratory (PRL), Ahmedabad.
52	Dr. B.K. Rastogi	Geology	Director General & Scientist, Institute of Seismological Research (ISR), Gandhinagar.
53	Dr. A.S. Rajawat	Geology	Scientist, Space Application Centre (SAC), ISRO, Ahmedabad.
54	Dr. I. Bahuguna	Geology	Scientist, Space Application Centre (SAC), ISRO, Ahmedabad.
55	Dr. R.D. Deshpande	Geology	Scientist, Physical Research Laboratory (PRL), Ahmedabad.
56	Dr. A.K. Singh	Geology	Head & Professor, Department of Civil Engineering, Pandit Dindayal Petroleum University (PDPU), Gandhinagar.
57	Dr. Sandip Trivedi	Geology	Head & Professor, Department of Civil Engineering, Indus University (IU), Ahmedabad.
58	Dr. A.V. Kulkarni	Geology	Eminent Scientist, Indian Institute of Science (IISc), Bangalore.
59	Dr. Niraj Patel	Geology	Scientist, Gujarat State Petroleum Corporation Ltd., Gandhinagar.
60	Dr. Amit Thakkar	Biochemistry	Wyoming University, USA
61	Dr. Meghna Patel	Biochemistry	Cambridge University UK
62	Dr. Munjal Acharya	Biochemistry	University of California, USA.
63	Dr. Highcinth Highland	Biochemistry	Zoology Dept, School of Science, Gujarat University.
64	Dr. Harish Padh,	Biochemistry	Vice- Chancellor, S.P. University, Chancellor, S.P. University,
65	Dr. Ketan Shukla	Biochemistry	Deputy Director General, Mahatma Gandhi Labour Institute

66	Dr. Datta Madamwar	Biochemistry	Prof. Bio Science Department, S. P. University. Vallabh Vidyanagar, Anand.
67	Dr. Savita Yadav	Biochemistry	Additional Professor, All India Institute of Medical Sciences, New Delhi.
68	Dr. Jayesh Sheth	Biochemistry	DIRECTOR, Institute of Human Genetics, Ahmedabad.
69	Dr. Linz-Buoy George	Biochemistry	Department of Zoology, School of Sciences, Gujarat University, Ahmedabad.
70	Prof. J.N. Desai	Physics	Eminent Scientist, PRL, Ahmedabad.
71	Dr. D. B. Vaidya	Physics	Former Professor, Gujarat college, Ahmedabad.
72	Prof. Ranjan Gupta	Physics	IUCAA, Pune.
73	Dr. Shashikaran Ganesh	Physics	Eminent Scientist PRL Ahmedabad.
74	Prof. Anand Rao	Physics	Eminent Scientist PRL Ahmedabad.
75	Prof. U. C. Joshi	Physics	Eminent Scientist PRL Ahmedabad.
76	Prof. K. P. Subramanian	Physics	Eminent Scientist PRL Ahmedabad.
77	Dr. Kuljit K Marhass	Physics	Eminent Scientist PRL Ahmedabad.
78	Prof. Abhijit Sen	Physics	Institute of Plasma Research, Bhat, Gandhinagar.
79	Prof. S. K. Sharma	Physics	Bose Institute, Kolkatta
80	Dr. Sandeep Sahij Pal	Physics	Punjab University

3.7.5 How many of the linkages/collaborations have actually resulted in formal MoUs and agreements? List out the activities and beneficiaries and cite examples (if any) of the established linkages that enhanced and/or facilitated

a) Curriculum development, enrichment

The linkages with industries have a positive impact in the design of syllabus. The Statistics Department developed their syllabus for SPSS course after taking tips from the renowned industries like TCS, Epoch research center. Even the Zoology Department consulted and used their linkages with the industry for the design of Biotechnology syllabus. Gujarat is the hub of Pharmaceutical industries and many of the students of the institute are recruited as employees. The Chemistry Department gets the benefit in the design and conduct of the syllabus through these industries.

b) Internship/on the job training

The departments of Vocational Biotechnology and Chemistry (for PG) have internship. The Geology Department sends the students for on the industrial training. The Botany Department has sent three students to Gujarat pollution Control Board for training during summer break.

c) Summer placement

The Institute organizes placement activities round the year as and when the companies approach the institute for their requirement of human resources.

d) Faculty members exchange and professional development

As the MoUs have been signed, now there will be opportunities for the faculty exchange. At present many faculty members work as visiting faculty in the institutes of repute.

e) Research

The Institute has a dynamic relationship with prominent research institutes like IPR, SAC, PRL and ISRO which has helped in the professional development of the faculty.

f) Consultancy

Any faculty or the department receives the consultancy project, the principal and the management encourages to take-up the assignment. Such consultancy has been received by the Geology Department from GMDC and GIPCL. This has resulted into the mutual benefits for both the parties.

g) Extension

In collaboration with the Red Cross, the institute organizes blood donation camps every year.

h) Publication

This association with the industry and research institutes has helped the faculty and the research students to publish their work in national and international journals.

i) Student placement

The students who have been trained at the research institutes and the industry have found it easier to find the placement in the particular industry.

j) Twinning programmes

Though the twinning programmes could be very useful, the institute could not initiate the same.

k) Introduction of new courses

The institute started SPSS course in the Statistics department which was the result of its linkage with the industry.

l) Student exchange:

Gujarat University has a student exchange programme with a university in Japan. Our students appear in the selection process, but so far no student has been selected.

3.7.6 Detail on the systemic efforts of the institution in planning, establishing and implementing the initiatives of the linkages/collaborations.

The institute has been supporting activities related to collaboration and linkages and there is a constant focus to implement such activities. The management also gives instant nod for the activities related to collaboration with external agencies. The Collaboration with Community Science Centre, PRL, SAC- ISRO, GUJCOST, GBB, etc. have been embarked on to facilitate the overall development of the institute in different spheres of academia.

CRITERION - IV

INFRASTRUCTURE AND

LEARNING RESOURCES

CRITERION IV: INFRASTRUCTURE AND LEARNING RESOURCES

4.1 Physical Facilities

4.1.1 What is the policy of the Institution for creation and enhancement of infrastructure that facilitate effective teaching and learning?

The institute has one of the best infrastructures available from the academic point of view. It has big theater like class rooms, a seminar hall, reading room for students, a spacious Library, big play grounds, separate parking facilities for boys & girls, separate ladies room, water coolers, botanical garden etc. Separate offices are available for sports, NCC, CWDC, Student's Union Room and Placement cell activities. The available infrastructures are conveniently used during cultural festivals as well as other academic and extracurricular activities. The institute is recently adding a Geological museum as an extension to the Geology department for the overall benefits of the graduate and post graduate students of Geology department. This facility is sponsored by the Gujarat Mineral Development Corporation.

Some of the infrastructure facilities are:

1. 7 Theatre like class rooms, 6 big class rooms.
2. Central Library
3. One auditorium with audio visual facility.
4. English Language Lab (24 Computers)
5. 7 State of the art Computer laboratories with internet facility
6. A laboratory with 20 Computers with **PASW SPSS 18** Licensed software in the Statistics department
7. A laboratory with 10 Computers with **MatLab** Licensed software in the Mathematics department
8. Plant Tissue Culture lab in Botany department
9. Animal Tissue Culture lab in Zoology department
10. Instrument Lab in Chemistry department
11. Instrument Lab in Microbiology department
12. A big Seminar Hall with a capacity of 200 people
13. Zoological Museum consisting of varies species of animals
14. Botanical museum with various species of plants

15. Geological Museum
16. RO Drinking water facility
17. Hostel for Boys and Girls
18. Ladies Room
19. OHP, LCD Projector
20. Spacious parking facility
21. Fully equipped Laboratory for embedded system
22. Specious Play ground for various sports
23. Gymkhana for indoor game
24. Huge parking space for both staff and students
25. Auditorium GMDC Bhavan

4.1.2 Detail the facilities available for

a) Curricular and co-curricular activities – classrooms, technology enabled learning spaces, seminar halls, tutorial spaces, laboratories, botanical garden, Animal house, specialized facilities and equipment for teaching, learning and research etc.

(1) Class Rooms:

The College has very good infrastructure – 6 airy classrooms, 7 theaters. There are proper arrangements of fans, lights and black boards and sitting facilities which are very conducive for learning. We have one class room with audio visual facility which is routinely used for scientific presentation/seminars and discussions.

(2) Technology and enabled learning space:



The institute has six well furnished computer laboratories along with internet connection. These laboratories also have licensed software for different add-on courses available on the campus. The laboratories in all the departments have projectors and computers for audio visual presentations.

There are 7 fully equipped computer centers / labs with 150 computers.

The following table shows the individual departmental computer facilities:

Sr. No.	Name of the Department	No. of Computers	Software (if any)	Funding Agency
1	Statistics	10 10	SPSS – PASW Statistics - 18	DBT UGC
2	Mathematics	10	MATLAB	DBT
3	Chemistry	15	-	FIST-DST
4	English - Language Lab	24	-	KCG-GOVT OF GUJARAT
5	Physics – a. Embedded System b. IMF	10 18	-	UGC UGC
6	COP (Chemistry, Geology, Microbiology)	15	-	UGC
7	Office	07 01	Accounting Software (DOS Based)	UGC IGNOU

For conducting large classes, the faculty members are provided with wireless (Portable) Class Room Talky.

(3) Seminar Hall:

The institute has central common seminar hall equipped with audio-visual facilities, internet with a seating arrangement for 200 people.

(4) Laboratory:

The heart of any science institute lies in its research facilities and laboratory infrastructure. The institute has many advanced instruments that can be used for the PG and research work. Being a multidisciplinary institute, interactive projects and research work are carried out on a large scale.

Each of the departments, viz., Physics, Chemistry, Microbiology, Botany, Zoology, Geology, Biochemistry have well designed and equipped laboratories with individual gas and water connections which suffice all the practical and experimental needs. Mathematics and Statistics departments have computer laboratories with licensed software like PASW Statistics-18(SPSS) and Matlab. These laboratories have projectors with computers for audio visual presentations. The Botany department has established a Plant Tissue Culture lab while the Zoology department has established Animal Tissue Culture lab where the students undertake projects for their respective disciplines. The office is also having computer lab, where all college data are computerized. The Physics department has special computer laboratory for embedded system.

The following is the list of laboratories in the different departments:

Department	F.Y.	S.Y.	T.Y.	M. Sc.	Research	Total
Botany	1		1		1	3
Biochemistry			1			1
Biotech		1				1
Chemistry	1	1	1	1	1	5
Geology			1	1		2
Zoology	1		1		1	3
Statistics			1			1
Physics	1	1	1	(Darkroom facility is available)		3+1 (D.R.)
Electronics		1	1			2
Microbiology		1	1			2
Total	4	5	9	2	3	23 + 1 (D.R.)

(5) Botanical garden:

The institute has a well developed Botanical garden with variety of species.

(6) Animal house:

Due to license constraints and permission our institute does not possess an animal house.

(7) Specified facilities and equipment for teaching:

Almost every department has LCD projectors, overhead and slide projectors, laptops/desktops, separate broadband internet connections which enable and ignite a scientific temper amongst the students.

The Statistics department of our college is the only UG department of Gujarat of its kind to have licensed software of “PASW Statistics 18”. The Statistics department is running a short term course on “Introduction to PASW Statistics-18” for the benefit of the students. This facility is also availed by the students of various institutes in the vicinity.

- The Mathematics department also has well equipped computer laboratory (10 PC) with licensed software of “MatLab”.
- The Physics department is running a COC on Embedded System which is the USP of this institute.
- The English department has a separate Language Laboratory having 25 computers. The department is also inspiring and giving training to the students for SCOPE examination.
- The Chemistry department is having 6 laboratories. The department is running COP course on Chem-informatics. The department has FTIR and *UV visible spectrophotometer* for advanced molecular biological studies. The dept. also offers PG and Ph. D. programmes.

- The Geology department has a wide range of collection of stones, fossils, rare specimens etc. This is the only department having both UG and PG Programs of Geology in entire Gujarat. The department is also running COP course on Geo-informatics. The Geology department has recently received the grant from the GMDC to set up the Geological Museum.
- The Botany department has a Plant Tissue Culture laboratory. Not only college students but other college students and school children are taking the benefit of this laboratory.
- The Biochemistry department has *cooling ultra* centrifuge which can do DNA isolation. It also has a *Plant growth chamber* and *Laminar flow hood* for plant tissue culture. It also has a rotary shakers, incubators for microbiological work and facilities for immunology experiments.
- The Zoology department possesses an Animal Tissue Culture laboratory with *Laminar air flow* and CO₂ incubator.
- The Microbiology department has many advanced instruments like *Soxlet* with which bio extractions of any microbes can be done. *Environmental shaker* manages different speed of rotation and temperature. *Bio incubator*: It maintains low temperature with moisture for fungal research. *Deep freezer* preserves microbiological culture at low temperature (-20 degree) for long duration. *Microscope* with microphotography facility.

(8) Learning and research:

[A] Academic activities:

Most of the departments are equipped with basic infrastructure and equipment facilities to pursue research. There are 23 laboratories with the state of the art facilities. There are separate 10 departments for all the disciplines, so students get opportunity to interact with the faculty. The heads of the department have separate cabins for the smooth administration of the department. The institute possesses 7 computer laboratories with more than 100 computers. There is also a language lab, a conference room in the neighborhood, an audio-visual room with a computer and an LCD projector, a common gas connection, two tube wells, research laboratories where latest equipment and facilities are centrally located. Many of the faculty members are Ph.D. guides, and they have their own research space for conducting research projects. Under them research students are carrying out research activities for Ph. D. degree. This creates an atmosphere of quality research in the institution and such activities inspire UG and PG

students to take research as a career. Leading schools of the state and city make use of the facilities available at the institute.

- The Geology department has completed 9 projects of various sponsoring agencies like SAC, ISRO, GMDC etc.
- In the Chemistry department 4 faculty members have completed minor research projects and one has major research project.
- The Botany department has completed 4 major and 2 minor research projects. The department has developed the state of the art PTC lab having instruments like Laminar air flow, Auto clave, Tissue culture lab, Distillation unit, Digital balance, Gel electrophoresis etc.
- Statistics department of the college is the only UG department in Gujarat having “PASW Statistics-18” software. The department has conducted 7 training programs related to the software for the students and for the faculty members also. The faculty members of the department are also guiding PG and research students.

b) Extra –curricular activities – sports, outdoor and indoor games, gymnasium, auditorium, NSS, NCC, cultural activities, Public speaking, communication skills development, yoga, health and hygiene etc.



The College has an auditorium, gymnasium and an open-air theatre that also can house more than 200 students. There is also a bigger auditorium in the vicinity where annual functions and seminars are organized. There are several rooms for co-curricular activities, and separate rooms for the women’s cell, placement cell, credit society, NCC room, sports, and counseling.

The institute has a separate ground for football, basketball, volleyball, cricket, a 400m track and necessary items for weight exercises, and for field and track events. It also has facilities for table tennis. The in-house auditorium has been used for all the major activities of the College.

NCC:

The NCC programmes are coordinated by the NCC in charge. The students of the institute take active interest in NCC and also participate in various camps organized by Indian Navy. Frequently the cadets are selected to participate in Republic Day Celebrations (RDC), New Delhi.

Health and Hygiene:

The institute has a full time sweeper and gardener to take care of cleaning the campus and nurturing the greenery of the campus. There is a systematic disposal of wastes in the institute. Dustbins are kept at various places to manage the waste properly.

The institute has collaborated with the Ahmedabad Municipal Corporation to put in place the system of waste management.

4.1.3 How does the institution plan and ensure that the available infrastructure is in line with its academic growth and is optimally utilized? Give specific examples of the facilities developed/augmented and the amount spent during the last four years (Enclose the Master Plan of the Institution / campus and indicate the existing physical infrastructure and the future planned expansions if any).

We at M. G. Science always try to utilize our infrastructure to the maximum in the following way:

- The institute possesses huge classrooms, library, reading rooms, theatres and multiple labs, computer rooms and admin office to cater to the academic and non-academic needs of the Institute.
- M.G. Science has acted in response to the rising academic demands by improving the facilities available on the campus. To augment the academic performance at the institute, the institute has developed six fully equipped computer labs with more than 100 computers. The Institute has also extended the girls' hostel from the grant received from the UGC. The Geology museum is also developed with the help from GMDC. The four new class rooms are also under construction to enhance the academic space at the institute.
- The following is the list of new infrastructure developed at the institute in last five years.

Sr. No.	New Infrastructure	Department	Amount Spent
1	Instrument Maintenance Facility	Physics	7,48,502/-
2	Lab. for Embedded System	Physics	8,85,094/-
3	DBT – Plant Tissue Culture Lab, Animal Tissue Culture Lab. Computer lab (MATLAB) Computer lab (SPSS)	Botany Zoology Mathematics Statistics	31,06,000/-
4	Language Lab.	English	2,07,884/-
5	Career Oriented Programme Lab.	Chemistry, Geology & Microbiology	9,09,259/-
6	FIST-DST Lab.	Chemistry	21,46,489/-
7	Geology Museum	Geology	33,00,000/-
8	Extension of Woman's Hostel	Institute	52,45,781/-

- As the Govt. of Gujarat made it mandatory for all faculty members and students to appear for SCOPE examination, the institute has set up an English language lab with the Government aid to meet this need.
- The number of students who have opted for computer training has increased in the recent past on account of CBCS. In order to meet the demand, six new computer labs have been set up.
- All the departments are equipped with computer and internet facility. The campus is partially Wi-Fi enabled, so the departments can make use of internet.
- Separate washrooms are constructed for men and women in the main building. Some new equipment, and AV aids such as LCD projectors (4) are purchased with DBT, DST and UGC grants.
- As the institute is within a kilometer range of Gujarat University and has an excellent infrastructure facility, the University Examinations are conducted regularly at M. G. Science Institute.
- The institute also provides its premises to other external agencies like Banks, IGNOU, UPSC, GPSC, CA association etc. to conduct their exams.
- The college has a well-known cricket ground which is not only used by the college students, but is also a hot destinations for the budding cricketers of Gujarat. The institute provides its ground for summer / regular coaching camps. Earlier the institute had two grounds of which the bigger ground was used by the Gujarat Cricket Association for their Ranji Trophy and major tournaments.

Recently the bigger ground is used for constructing an academic institute by the Ahmedabad University.

- The gymkhana of our college also houses a health club to encourage both the students and faculty to keep them physically fit.

4.1.4 How does the institution ensure that the infrastructure facilities meet the requirements of students with physical disabilities?

There is an easy excess to the institute for the students with various physical disabilities. Separate cabins are provided during the exam for the students with physical disabilities.

4.1.5 Give details on the residential facility and various provisions available within them:

➤ **Hostel Facility – Accommodation available**

The boy's hostel is situated at a distance of one kilometer from the institute. It is being used by all the AES colleges. There are 115 rooms with the occupancy of 2 or 3 students in each room. The rooms in the hostel are furnished with a set of a chair and a table, a cot and storage space for each occupant. The hostel has 24 hour water supply and a water cooler. There is a television set, a well maintained playground & the facility of telephone. The hostel arranges cultural/ social programmes for the occupants.

Similarly at a shorter distance, there is a girls' hostel, in which the rooms are well furnished, with all the facilities

➤ **Recreational facilities, gymnasium, yoga center, etc.**

The hostel is in close proximity of Gujarat University campus, so facilities available there are utilized by the students.

➤ **Computer facility including access to internet in hostel**

Computer facility is not available in the hostel, as this can be availed by the students at the neighboring Gujarat University campus.

➤ **Facilities for medical emergencies**

The Institute utilizes the University health center facility which is almost a kilometer away from the institute. In the case of emergencies, the institute uses the facilities of the doctors who are on the panel of AES.

➤ **Library facility in the hostels**

The hostel has a reading room with local dailies. Moreover students utilize the Gujarat university central library which is very close to the Hostel.

➤ **Internet and Wi-Fi facility**

The institute does not provide Wi-Fi facility in the hostel, but students can utilize the internet facility available in the institute as well as in the Gujarat University Campus.

➤ **Recreational facility-common room with audio-visual equipments**

Both the hostels have a common TV room.

➤ **Available residential facility for the staff and occupancy Constant supply of safe drinking water**

The institute does not provide residential facility to the academic staff, but the class III and IV employees are provided with quarters on the campus.

➤ **Security**

The institute has an excellent security both at hostels and at the institute. There are security cameras installed at different locations to safeguard the security of its huge premises. The security is outsourced to the reputed agency.

4.1.6 What are the provisions made available to students and staff in terms of health care on the campus and off the campus?

Every year, the University Health Centre conducts mandatory health checkups for students. The institute is very close to the Gujarat University campus. The Gujarat University has a health center situated nearby in the same campus. The affiliated college students, teaching and non-teaching staff members can make use of this facility. The college maintains a first aid kit, readily available for any kind of emergency.

4.1.7 Give details of the Common Facilities available on the campus—spaces for special units like IQAC, Grievance Redressal unit, Women's Cell, Counseling and Career Guidance, Placement Unit, Health Centre, Canteen, recreational spaces for staff and students, safe drinking water facility, auditorium, etc.

➤ **IQAC:**

Currently the IQAC coordinator is the Head of English Department. The Institute has a separate room for IQAC.

➤ **Grievance Redressal unit:**

In striving for excellence, our institute encourages the students/visitors/faculty members to voice their opinion by installing a common suggestion box in front of the Principal's room. The Principal checks the suggestion box periodically and takes necessary action.

➤ **Women's Cell:**

A separate room is allotted to this where all the students are encouraged to discuss their problem with the CWDC board members.

➤ **Counseling and Career Guidance:**

The students are counseled at the placement cell of the institute.

➤ **Placement Unit:**

A committee headed by the Head of Biochemistry department looks after the placement activity. A separate room is allotted for placement unit.

➤ **Health Centre:**

The institute does not have a health center. The Institute utilizes the University health center facility which is almost a kilometer away from the institute.

➤ **Canteen:**

The institute has a separate kiosk for the staff and students where Tea, coffee, cold drinks and light refreshments are available. There are also other common canteens belonging to the sister institutes available in close proximity in the campus.

➤ **Recreational spaces for staff and students:**

There is a gymnasium available on the campus where staff members can play some indoor sports. The lush green campus of the institute is an ideal place for various leisure activities.

➤ **Safe drinking water facility:**

The institute has three RO plants for the pure drinking water for the students and the staff members.

➤ **Auditorium:**

There is a big auditorium with a seating capacity of around 200 persons. The auditorium has audio-visual facility.

4.2 Library as a Learning Resource:

4.2.1. Does the library have an Advisory Committee? Specify the composition of such a committee. What significant initiatives have been implemented by the committee to render the library, student/user friendly?

Yes, the institute has a library advisory committee comprising all HODs as members. The Librarian is the convener and the Principal is the Chairman of the committee. The

advisory committee advises the library for the purchase of books, journals and the improvement of library information services.

We have also another Library Development Committee (LDC). Members of Library Development Committee are:

1. Dr. B. K. Jain (Principal),
2. Smt. S. P. Pandya (Head, Microbiology Department),
3. Dr. V. N. Upasani (Microbiology Department),
4. Smt. Bhavanaben Hathi (Head, Statistics Department) and
5. Shri H. H. Rathod (Physics Department).
6. Smt. Kaminiben (Librarian)

Each department is allotted a specific amount of money every year to purchase books. The Head of the Departments in consultation with the faculty members decides on the list of books to be purchased. The Library Development Committee (LDC) is always working to improve the services of the library as far as possible with the help of the all faculty members, staff and students. All books are bar-coded and SOUL programme is also used.

The significant initiatives that have been implemented by the committee to render the library, student/user friendly are:

1. Adoption of modern technology and digitalization of the library.
2. Provision of display racks and library notice boards for announcing new arrivals of books, journals and magazines.
3. Provision of reprographic facility to cater to the needs of users.
4. Extension of library timings beyond class hours.
5. Computers with SOUL software are available in the library.

All the above initiatives ensure the library user – friendly.

Major responsibilities of the committee are as follows:

1. The committee formulates development plans and recommends facilities for implementation.
2. The committee gives guidelines for the procurement of costly books, internet journals, hardware and software necessary for the library.
3. The committee ensures the optimal use of library facility by staff and students.
4. The committee organizes book fairs in institute.
5. It ensures the availability of latest syllabi in the library.

6. It takes up remedial actions towards the grievances expressed by the students and staff.

The functions of the library advisory committee are as follows:

1. The Library Advisory Committee meets periodically.
2. It takes stock of the availability of books, Journals etc.
3. It takes decisions on new additions to the library stock, on Providing better access to the students and on the funds needed.
4. They pass necessary resolutions and forward them to the management for execution.



4.2.2 Provide details of the following:

Total area of the library (in Sq. Mts.):	2000
Total seating capacity:	Reading room capacity of 80 students.
Working hours	11.00 am to 5.30 pm
On working days : Before examination days : During examination days :	Working hours on working days, before examination days, during examination days, are from 11.00 a.m. to 5.00 p.m. On holidays, the library remains closed unless there is a preparation for youth festivals, debates etc. Library works for extra hours during the examination time for the benefit of the students.
During vacation:	8.00 am to 1.00 pm
Layout of the library	Separate Reading Zone Lounge area for relaxed reading, IT zone for accessing e-resources

4.2.3. How does the library ensure purchase and use of current titles, print and e-journals and other reading materials? Specify the amount spent on procuring new books, journals and e-resources during the last four years.

1. Each faculty member is encouraged to suggest the titles of book and journals to cater to the recent development and to enrich both learning and teaching process. This is

forwarded to the Head of the Department. The library procures these after cross checking the availability of these in the library. In case, copies are available but are not sufficient or not of the latest edition, procurement is done in consultation with the concerned faculty.

2. The library committee meets at regular intervals and discusses about the current titles, important journals and other reading materials to be added to the library.
3. Whenever the syllabi are changed, the Library Committee passes resolutions on adding new books and journals accordingly.
4. Heads of the Departments and all the other faculty members are also consulted. The student's suggestions are also taken into account.

The following table displays the purchase of books from various grants:

YEAR	UGC GENERAL DEVELOPMENT GRANT		UGC REMEDIAL GRANT		UGC NET/SLET GRANT		DBT / FIST		Library Fees	
	BOOKS	COST	BOOKS	COST	BOOKS	COST	BOOKS	COST	BOOKS	COST
2008-09	45	13,848/-	-	-	-	-	-	-	205	62426/-
2009-10	22	18,515/-	-	-	-	-	227	1,73,796/-	176	45799/-
2010-11	117	45,306/-	58	22,534/-	-	-	-	-	70	14460/-
2011-12	189	77,880/-	433	1,55,989/-	300	1,26,563/-	257	1,52,142/-	17	7028/-
2012-13	-	-	68	26,446/-	127	74,538/-	229	1,21,010/-	65	30785/-

Amount spent on new books and journals w.e.f. 2007-08 to 2012-13:

Library holdings	2007-08		2008-09	
	Number	Total Cost	Number	Total Cost
Text books	44	11000/-	52	15600/-
Reference Books	193	62664/-	198	60674/-
Journals/ Periodicals	06	3115/-	04	2485/-
e-resources	---	---	---	---
Library holdings	2009-10		2010-11	
	Number	Total Cost	Number	Total Cost
Text books	130	35750/-	55	13750/-
Reference Books	295	202360/-	190	68550/-
Journals/ Periodicals	08	7503/-	11	10000/-
e-resources	---	---	---	---

Library holdings	2011-12		2012-13	
	Number	Total Cost	Number	Total Cost
Text books	350	96250/-	175	43750/-
Reference Books	846	423352/-	314	209029/-
Journals/ Periodicals	08	6150/-	19	18320/-
e-resources	---	---	31	775/-

N.B.

1. In the past five years, 14 periodicals and 2 journals have been donated by the different publishers to the institute
2. The library possesses 345 CDs / DVDs containing data file, add-on resources, video lectures, e-books.

4.2.4. Provide details on the ICT and other tools deployed to provide maximum access to the library collection?

OPAC (Online Public Access Catalogue.)	SOUL software
Electronic Resource Management package for e-journals	Not available
Federated searching tools to search articles in multiple databases	No such tool has been deployed.
Library Website	There is no separate Library Website.
In-house/remote access to e-publications	Every department has internet facility to access e-resources
Library automation	Library automation has been done through SOUL Software where as OPAC is used for indexing.
Total number of computers for public access	Two
Total numbers of printers for public access	One
Internet band width/ speed	2 Mbps. The college has internet facility from BSNL.
Institutional Repository	No such tool has been deployed.
Content management system for e-learning	No such tool has been deployed.
Participation in Resource sharing networks/consortia (like Inflibnet)	There is participation in INFLIBNET. Every faculty member is allotted user-id and password.

4.2.5. Provide details on the following items: Persons per day

Average number of walk-ins	30
Average number of books issued/ returned	On an average around 20 books issued
Ratio of library books to students enrolled	1:12
Average number of books added during last three years	644
Average number of login to OPAC	Nil
Average number of login to e-resources	Nil
Average number of e-resources downloaded/printed	Nil
Number of information literacy trainings organized	As per the need of users as well as directions of members of the Library Committee.
Details of “weeding out” of books and other materials	The books specially backdated/ less important are identified by the concerned faculty members, after which they go through an internal maintenance process [for further use after treatment or to keep those in a separate room to protect other documents from decay]. With the approval of the advisory committee; proposal is passed for weeding books. Management is informed accordingly and books are weeded.

4.2.6. Give details of the specialized services provided by the library:

Manuscripts	Manuscripts are not available in our college.
Reference	The institute provides this service.
Reprography	The institute provides this service.
ILL (Inter Library Loan Service)	The institute doesn't provide this service.

Information deployment and notification	The institute provides this service.
Download	The institute provides this service.
Printing	The institute provides this service.
Reading list/ Bibliography Compilation	The institute provides Reading list only.
In-house/remote access to e-resources	The institute provides this service.
User Orientation and awareness	The institute provides this service.
Assistance in searching Databases	The institute doesn't provide this service.
INFLIBNET/IUC facilities	The institute library subscribes to the N- list scheme of INFLIBNET.

4.2.7. Enumerate on the support provided by the Library staff to the Students and teachers of the college.

The support provided by the Library staff to the students and teachers of the institute is in the form of:

1. Computers
2. Internet
3. Reprographic Facility
4. Overnight issue of reference books
5. Reading room for students
6. Separate study tables for the staff
7. Timely issue/return of books
8. Maintaining peaceful and academic environment
9. Subject wise catalogue is available and well displayed on the racks for easy identification.
10. New books, journals, magazines are displayed on a separate display board for the students to easily identify once they enter the library.
11. A number of journals national and international, subject and GK oriented Magazines; Employment News and news papers are available for the students and faculty.
12. Old question papers of internal tests and university exams in all the subjects are made available to the students.

13. Copies of syllabi prescribed by the university, with question-wise division of marks etc. are also available to students for ready reference.
14. The library staff keeps the faculty and the students updated regarding its latest acquisitions.
15. The new titles are displayed on the display boards at the entrance of the Library.
16. Help in locating the books

4.2.8 What are the special facilities offered by the library to the visually/physically challenged persons? Give details.

Till date the college did not have any visually disabled and physically challenged students. Hence the library offers no special facilities in this regard.

As regard to the physically challenged students, the library staff assists the physically challenged student in obtaining materials/ documents. They are also given top priority while issuing books.

Physically disabled student are provided guidance about the use of library facilities. The books or reference material whatever they need is supplied to them to their seat in the library. The library assistant will take care of them in all aspects for the comfort within the library.

4.2.9 Does the library get the feedback from its users? If yes, how is it analysed and used for improving the library services. (What strategies are deployed by the Library to collect feedback from users? How is the feedback analysed and used for further improvement of the library services?)

Yes, the library gets the oral/informal feedback from its users in the form of complaints, suggestions and recommendations. The library committee analyses and submits the report to the Principal for the initiation of appropriate steps for improving the facilities in the library. Such constructive feedbacks renders the library student/user friendly.

4.3 IT Infrastructure

4.3.1 Give details on the computing facility available (hardware and software) at the institution.

- **Number of computers with Configuration (provide actual number with exact configuration of each available system):** The institute has around 150 computers for students and staff members. The configurations range from i5, Dual Core to P4.
- **Computer-student ratio:** 1: 11

- **Stand alone facility:** Currently in all computer laboratories, computers are linked with individual server while every head of the department has an independent computer portal.
- **LAN facility:** Every Lab has its independent LAN facility.
- **Licensed software:** The following licensed software have been purchased by the institute. Windows Server 2008, XP, Windows 7, MS-Office 2007 and 2010, PASW Statistics – 18, MATLAB, SOUL.
- **Number of nodes/ computers with Internet facility:** All Computers of our institute are with Internet facility.
- **Any other:** M. G. Science Institute is a Wi-fi enabled zone and this facility is available to the faculty and students in a limited way. The DELL Computer lab for SCOPE examination is set up with 25(1 Server+24) terminals.

4.3.2 Detail on the computer and internet facility made available to the faculty and students on the campus and off-campus?

The institute has more than 150 computers available to the students as well as staff members. These computers have internet facility, so the students and the staff get the access to the computer round the clock. There is also Wi-Fi facility available in a limited way.

4.3.3 What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities?

The institute has developed fully equipped 7 computer labs in the past five years.

The institute further plans to develop its digital capacity by adding many more computers in different departments. The institute also wants to add a computer center attached to the library. The strengthened digital capacity will help conduct online examinations in the future.

All the departments have LCD projectors connected with computers but in the future the institute is planning to install projectors in all the class rooms.

4.3.4 Provide details on the provision made in the annual budget for procurement, upgradation, deployment and maintenance of the computers and their accessories in the institution (Year wise for last four years)

	2008-09	2009-10	2010-11	2011-12	2012-13
Procurement	54250/-	49700/-	98050/-	-	39500/-
Up gradation	-	-	51550/-	-	33961/-
Accessories	-	-	-	14276/-	-
Maintenance	-	105840/-	-	94000/-	-
Total	54250/-	155540/-	149600/-	108276/-	73461/-

4.3.5 How does the institution facilitate extensive use of ICT resources including development and use of computer-aided teaching/ learning materials by its staff and students?



Staff members of our institute make use of computer and internet facility for making teaching learning process interesting and interactive. They also prepare power point presentation for effective class room teaching. The laboratories in all the departments have projectors connected to

computers for audio visual presentation. Many staff members are connected with Alumni and students on the social sites for various information related to academia. We also exhibit BISAG lectures to the students in the auditorium of our institute.

4.3.6 Elaborate giving suitable examples on how the learning activities and technologies deployed (access to on-line teaching - learning resources, independent learning, ICT enabled classrooms/learning spaces etc.) by the institution place the student at the centre of teaching-learning process and render the role of a facilitator for the teacher.

Though institute doesn't have the ICT enabled class rooms but the auditorium has ICT facilities which are used by the faculty for their regular lectures as well as for seminars and workshops. As many of the laboratories in the departments are equipped with LCD projectors with internet connections that enables the faculty to make the live presentation of the experiments.

All the departments possess computers with internet facilities which are also accessible to the students. This facility is extremely useful while preparing the projects.

4.3.7 Does the Institution avail of the National Knowledge Network connectivity directly or through the affiliating university? If so, what are the services availed of?

M. G. Science Institute is networked with the INFLIBNET facilities and many staff members make use of this facility while preparing their research papers.

4.4 Maintenance of Campus Facilities

4.4.1 How does the institution ensure optimal allocation and utilization of the available financial resources for maintenance and upkeep of the following facilities (substantiate your statements by providing details of budget allocated during last four years)?

M. G. Science Institute has a dedicated team of workers and technicians to maintain the huge campus. The institute has a gardener, an electrician, gas mechanic, two technicians (under UGC - Instrument Maintenance Facility scheme) for the upkeep of different instruments. Our management deputes various technicians and workers for carrying out the repairs / damages.

Building: The Ladies room has been refurbished recently. The entire building which is a immense heritage value being 66 years old, has its roof renovated with eco-friendly roof-tops sponsored by various industries. All wash rooms used by students are recently renovated. An entirely new floor for the women's hostel has been constructed under the 11th plan period of UGC. As a part of infrastructure development, four new class rooms are being built. The Geology museum sponsored by Gujarat Mining Development Corporation is under construction.

Furniture: Whenever there is a requirement the repair work is done by the in-house carpenter on the campus. The new furniture, if required, is supplied by the management.

Computer: Our institute possesses more than 150 computers. And for the maintenance – AMC is given to an external agency.

Equipment: The institute has funds under Instrument Maintenance Facility Scheme of UGC. Two technicians are appointed under this scheme to look after the maintenance of the equipment. Similarly the institute has also been given grants under FIST of DST by which the instruments purchased under this scheme are maintained.

Sr. No.	Particular	Year					
		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
1	Building	181500/-	408000/-	17500/-	705000/-	1300000/-	2200000/-
2	Furniture	38500/-	21000/-	12000/-	25000/-	25000/-	35000/-
3	Computer	---	---	---	25000/-	---	38000/-

4.4.2 What are the institutional mechanisms for maintenance and upkeep of the infrastructure, facilities and equipment of the college?

The institute follows the standard practice for the maintenance and upkeep of the different facilities of the campus. The management has appointed an estate manager who manages the maintenance of the institute and works in coordination with the Principal. There are fulltime - permanent government appointed technicians i.e. Electricians, Gas Mechanic, Gardner to look after campus maintenance.

4.4.3 How and with what frequency does the institute take up calibration and other precision measures for the equipment/instruments?

Every department carries out calibration and repair of different equipment on a yearly basis. If an instrument becomes dysfunctional, immediate repair is carried out by the technicians appointed under IMF scheme of UGC.

4.4.4 What are the major steps taken for location, upkeep and maintenance of sensitive equipment (voltage fluctuations, constant supply of water etc.)?

Our institute has been supplied with UPS from the State government to regulate the voltage fluctuation. However we are not facing a major problem of erratic electric supply in Ahmedabad. The institute has a well connected and huge network of water supply connected to the main tank and bore well.

Any other relevant information regarding Infrastructure and Learning Resources which the college would like to include.

Recently our institute has undertaken a major step towards environment protection by replacing its roof top made of asbestos with eco-friendly metal sheets.

CRITERION - V

STUDENTS SUPPORT AND

PROGRESSION

CRITERION V: STUDENT SUPPORT AND PROGRESSION

5.1 Student Mentoring and Support

5.1.1 Does the institution publish its updated prospectus/handbook annually? If 'yes', what is the information provided to students through these documents and how does the institution ensure its commitment and accountability?

The Institute distributes a document about the available courses along with the admission forms. This document gives the details about different courses offered, subject combinations, rules and regulations of the college, academic calendar, facilities of library, faculty information, etc. The same information is available on our college website too, which is updated regularly.

The college publishes a magazine titled 'Expressions' containing information about academic calendar, facilities of library, faculty information, outlines of co-curricular activities of Sports, NCC, NSS, Youth festival, Talent morning, Alumni programs, Tree plantation, Blood donation, etc. It also covers information about several activities and special achievements as well as the scholarly articles of teachers and students. The Institute ensures its commitment by giving an annual profile in the college magazine in which, a detailed report of activities done by the institute during the year, report of participation and organizations of events as well as achievements of students and faculty are highlighted. Usually, the institute highlights all the activities of the year with photographs and also enlists the forthcoming events.

5.1.2 Specify the type, number and amount of institutional scholarships / freeships given to the students during the last four years and whether the financial aid was available and disbursed on time?

Total No. of Students availing financial support	2008-09	2009-10	2010-11	2011-12	2012-13
OBC	51	80	82	148	188
SC	06	02	08	31	15
ST	04	02	05	10	72
Total amount (in Rs.)	308428	257140	426280	351182	611465

We provide UGC sponsored scholarships to 20 students from the UGC fellowship scheme.

There are different grants and scholarships available to the students. The details are as

follows:

Central government:

- 1) National Merit Scholarship

State government:

1. Higher Education Scholarship.
2. Gujarat State Fellowship Scholarship.
3. Economically Backward Class Freeship.
4. Physically Handicapped Scholarship.
5. Backward Class Scholarship.
6. Socially & Backward Class Scholarship.

College Scholarships:

- 1) Scholarships from the poor boys fund to the deserving students.
- 2) Scholarship from M.G. Science Alumni Association

5.1.3 What percentage of students receives financial assistance from state government, central government and other national agencies?

The following table enumerates percentage of students receiving financial assistance from state and central government.

Agencies	2008-09	2009-10	2010-11	2011-12	2012-13
State government	8.64	8.42	14.09	3.15	15
Central government	1.25	1.29	1.66	1.45	1.22
Other national agencies	—	—	—	—	—

5.1.4 What are the specific support services/facilities available for

Students from SC/ST, OBC and economically weaker sections

Our institute encourages SC/ST and OBC students to apply for the freeships and scholarships by the government. We also provide part payment or installment facility in the payment of fees for the economically weaker students. The details of free ships and scholarships given to SC/ST and OBC students are as mentioned above in point 5.1.2. Various books for competitive examinations, journals and encyclopedia are available in the library and these are utilized by the needy students. Career guidance is given to the SC, ST, OBC and Economically weaker sections by faculties as well as by guest lecturers.

Remedial coaching is imparted to the students belonging to the SC/ST/OBC/Minorities. NET/SLET coaching is provided to the PG students of Chemistry and Geology

departments. The students of Biochemistry and Microbiology are given free and extensive coaching under GSBTM programme of Gujarat government for cracking various entrance exams at the PG level.

Students with physical disabilities

Physically challenged students are given proper care at the time of admission as well as afterwards. Ramp facility is not available yet, but student volunteers always look after their special needs.

Overseas students

Overseas students have to get the admission through the Gujarat University. The university checks their eligibility and according to the guidelines and directions of the university, the college admits such students.

We have recently admitted two overseas students. (In Geology department, one student from Zimbabwe has taken admission for B.Sc. programme and second one from **Ethiopia**, for PhD program.)

Earlier we had three students from Iran, Iraq and African countries. The office staff and teachers were specially instructed to see that they study comfortably at our college. They were given priority in providing the hostel facility. They were accepted very well at our institute, culturally and socially. The Principal and the Rector of the hostel monitored their activities by providing them any kind of help they needed.

Students to participate in various competitions/National and International

We always encourage the students to participate in competitive examinations like:

- Kishor Vaigyanik Purashksar Yogana(KVPY), New Delhi
- Indian Association of Physics Teachers (TAPT) Examinations
- R. Rao Mathematical Competition
- On line examination in Chemistry
- University level Competitive examinations for various jobs.
- "Minaxi Lalit Science Award Test" conducted by Gujarat Science Academy every year.
- We help them in on line submission of the form.
- We display on notice board any information about examinations as and when we get it.
- We also guide the post graduate students for CSIR-NET, SET, and UGC-NET etc.
- Hundreds of students participate in various events of cultural activities organized

under *Saptadhara*, KCG, the Govt. of Gujarat and the Youth Festival organized by Gujarat University.

Medical assistance to students: health centre, health insurance etc.

- A first Aid kit is available in all the departments of the institute. University medical health centre is near our campus, and our students get advantage of its medical facilities. Our college has signed an MOU with some of the doctors for workshops on yoga. We regularly arrange Thalassemia checkup camps for the benefit of students.
- Our management has started a health care centre named ‘Setu’ in the ladies hostels campus where medical facilities are available from expert doctors. Especially on every Friday, a gynecologist visits between 5 to 7 pm.
- All our students have been covered with an accident policy of Rs. 100000/- by the Gujarat government under the "Shahid Vir Kinariwala Vidhyarthi Suraxa Juth Vima Yojna" scheme.

Organizing coaching classes for competitive exams

- We inform the students about the opportunities in their respective subject during and after their post graduation. We also encourage them for GRE/ SLET Examinations.

Coaching for NET	SC Students	ST Students	Students from Minority Communities IOBC	Teachers engaged	No. of Period taken	No. of tests held	No. of Pages /typed material given
Geology	3	1	11	5	52	3	5
Chemistry	3	2	19	9	32	3	4

We also arrange different lectures for career counseling which help the students in their choice of career.

- M.G. Science Institute organized special coaching course for NAVY entrance exam. This was the initiative sponsored by the employment office of the Govt. of Gujarat in 2010.

Skill development (spoken English, computer literacy, etc.)

- We have a well developed English Language Laboratory with Internet facility and it is available to all students. We also inspire them to participate in SCOPE examination organized by Gujarat Government to enhance proficiency in English language. We offer "Communication Skill" as an elective paper to all the students.
- Our institute has special software of English language to improve the English

speaking skills. We have full-fledged English language lab as well as computers in the library. In every department, we provide computers with internet facility for the students under the UGC-NRC scheme. We have enough number of books and video lectures for proficiency in English. We encourage the students to prepare for the International exam for English language training BULATS under the SCOPE, Govt. of Gujarat. Around 1000 students took Cambridge University BULATS exam and they were given training in appearing for online examination.

- Under the Remedial coaching, around 67 students of the Institute were given computer training in the year 2009-10.

Support for "slow learners"

Remedial classes are conducted regularly for slow learners to improve their learning. Tests are also arranged frequently to improve their learning. The faculty members meet slow learners to encourage and motivate them and arrange special extra classes and practical for their revision to give them better confidence and enhance their performance. We arrange special unit tests for them. During the 11th plan around 108 students belonging to various categories like SC/ST/Minorities took advantage of Remedial coaching at the institute. The following is the details of no. of students who participated in remedial coaching.

UG	SC Student	ST Student	Students from OBC Minority Communities		Teachers engaged	No. of Period taken	No. of tests held
Subject			OBC	Minority			
Microbiology	5	2	13	1	7	28	2
Zoology	6	3	39	2	3	53	2
Botany	2	1	10	--	3	14	2
Statistics	8	1	12	--	3	7	2
Computer Training	21	7	77	3	1	32	2
Total	21	7	77	3	Total Students		108

Exposures of students to other institution of higher learning/corporate/ business house etc.

We arrange study tours of our students particularly in Botany, Zoology, Geology and Physics to **make them familiar with various institutes, industries, natural habitats** and their working requirements and available current technology. Our students also

take part at State/National level seminars/Conferences organized by other institutions of higher learning. Our Alumni who are placed in different industries help our students in providing exposure and training. We have network with reputed industries for providing industrial training and opportunities for our students.

Sr. No.	Institute visited	Details of programme	No. of students
1	Ganpat university, Kherva	Isolation of Genomic DNA	35
2	St. Xavier's College, Ahmedabad	JNU M. Sc. Biotech Entrance Examination Training	15
3	Ganpat university, Kherva	Molecular Biology Workshop	04
4	Agricultural University, Anand	Plant Tissue Culture Techniques	50
5	Apollo Hospital	Stem Cell Culture Laboratory	10
6	Ganpat university, Kherva	Molecular Biology Workshop	03
7	Shri Biocare Research Ltd., Ahmedabad	Biofertilisers Productions	05
8	Katchch University	Workshop on Mangroves	02

Publication of student magazines

The Institute has been publishing college magazine - "EXPRESSIONS". This magazine is edited by the students under the guidance of teachers and the major contribution comes from the students themselves.

The students of Sem-I of year 2011-12 of Zoology subject have prepared a study book of their current syllabus under the guidance of their faculty. That time no book was available in the market so, some enterprising students took upon themselves to prepare the reference book for the newly introduced CBCS syllabus. Their efforts won rave reviews not only from the teaching fraternity, but also from the media.

5.1.5 Describe the efforts made by the institution to facilitate entrepreneurial skills, among the students and the impact of the efforts.

The promotion of self-employment is one of the objectives of the employment/career guidance cell. We arrange seminars to facilitate entrepreneurial skills, leadership skills, and public speaking and to get required information about government policies concerning the industry. Due to these efforts some students have successfully started small scale industries too on their own. Under the EDI (Entrepreneurship Development of India), we have arranged special lectures on entrepreneurship.

5.1.6 Enumerate the policies and strategies of the institution which promote participation of students in extracurricular and co-curricular activities such as sports, games, Quiz competitions, debate and discussions, cultural activities etc.

The institute has special policy to promote participation of students in extra-curricular activities. For all such students participating in various activities like sports, games, quiz competition, cultural activities, etc., we arrange special practical, so that they can devote their time for their respective extra-curricular activities. The students winning in such competitions are honored and given certificates during the annual day celebrations. Not only this, their names are also mentioned in the reports published college magazine. The biggest motivation comes from the fact that we give them extra internal marks when they reach a certain level in the various competitions.

Additional academic support, flexibility in examinations

We arrange extra practicals for the students participating in such activities and even arrange separate exams at their convenience. If a student shines in these activities, they are encouraged by giving up to 3 additional internal marks.

Special dietary requirements, sports uniform and materials

Our students are doing very well at sports also and we take special care in their diet, and nourishment. We give them apt uniforms and also provide them with good quality sports materials which encourages them to work harder. The students participating in various sports are provided with required sports kit. At the Annual Day celebration, the best athletes are given special track suits, shoes, etc. as prizes.

Any other

The institution always tries to attract students for participating in various extracurricular activities by ensuring consistent encouragement and motivation. The students who participate in extracurricular activities are provided with extra classes to compensate for their loss in studies. If they miss their internal examinations due to participation in extra-curricular activities, extra arrangement for retest is made for them without any charge.

The institute promotes extra-curricular activities like sports, games, debates and fine arts and students are encouraged to participate in different events. The Institute receives a grant of Rs. 60,000 per year from KCG, Govt. of Gujarat, to promote such activities. In sports, there is a provision for both indoor and outdoor games. The institute has a huge sports ground where a number of sports events are organized. It also has a

gymkhana with fitness equipments which are extensively used by the students. The following is the list of participants in various competitions in sports.

Year 2009-10								
Name of Tournament		Inter college		Inter Zonal		Interuniversity		Total
No.	Game	Male	Female	Male	Female	Male	Female	
1	Athletics	6	6	6	6	0	0	24
2	Badminton	4	4	4	4	0	0	16
3	Basketball	0	12	0	12	0	3	27
4	Chess	3	3	3	3	0	0	12
5	Cricket	16	0	3	0	2	0	21
6	Judo	2	2	0	0	0	0	4
7	Kho-Kho	12	0	12	0	0	0	24
8	Swimming	2	2	2	2	0	0	8
9	Table Tennis	4	4	4	4	0	0	16
10	Volleyball	12	12	12	12	2	1	51
	Total	61	45	46	43	4	4	203

Year 2010-11								
Name of Tournament		Inter college		Inter zonal		Interuniversity		Total
No.	Game	Male	Female	Male	Female	Male	Female	
1	Athletics	8	8	8	8	0	0	32
2	Badminton	4	4	4	4	0	0	16
3	Basketball	0	12	0	12	0	3	27
4	Chess	3	3	2	2	0	0	10
5	Cricket	16	0	5	0	3	0	24
6	Judo	2	2	0	0	0	0	4
7	Kho-Kho	12	12	12	12	0	0	48
8	Swimming	2	2	0	0	0	0	4
9	Table Tennis	4	4	4	4	0	0	16
10	Volleyball	12	12	12	12	3	2	53
	Total	63	59	47	54	6	5	234

Year 2011-12								
Name of Tournament		Inter college		Inter-zonal		Interuniversity		Total
No	Game	Male	Female	Male	Female	Male	Female	
1	Athletics	10	10	8	8	0	0	36
2	Badminton	4	4	4	4	0	0	16
3	Basketball	0	12	0	12	0	3	27
4	Chess	4	4	4	4	0	0	16
5	Cricket	16	0	3	0	2	0	21
6	Judo	2	2	0	0	0	0	4
7	Kho-Kho	12	12	12	12	0	0	48
8	Swimming	3	3	0	0	0	0	6
9	Table Tennis	4	4	4	4	0	0	16
10	Volleyball	12	12	12	12	2	2	52
	Total	67	63	47	56	4	5	242

Year 2012-13								
Name of Tournament		Inter-College		Inter-Zonal		Interuniversity		Total
No	Game	Male	Female	Male	Female	Male	Female	
1	Athletics	10	10	10	10	0	1	41
2	Badminton	4	4	4	4	0	0	16
3	Basketball	0	12	0	12	0	3	27
4	Chess	4	4	4	4	0	0	16
5	Cricket	16	0	4	0	3	0	23
6	Judo	2	2	0	0	0	0	4
7	Kho-Kho	12	12	12	12	2	0	50
8	Swimming	3	3	0	0	0	0	6
9	Table Tennis	4	4	4	4	0	0	16
10	Volleyball	12	12	12	12	2	1	51
11	Football	12	0	0	0	0	0	12
	Total	79	63	50	58	7	5	262

Cricket	Year			
	2009-10	2010-11	2011-12	2012-13
Major Cup	16	16	16	16
Gordhandas Cup	16	16	16	16
Chimanbhai Cup	16	16	16	16
Open Volleyball	12	12	12	12

A number of exciting in-house cultural activities like dance, drama, music and literary activities and competition are arranged by our institute on a regular basis. The cultural festival of M.G. Science Institute is the talk of the town. It receives huge participation from the students. The students also participate in various state and university level competitions and win laurels for the college. The following is the list of no. of students who have participated in Gujarat University Youth Festival and Govt. of Gujarat cultural competition, 'Saptadhara'.

Sr. No.	Name of the event	2008-09	2009-10	2010-11	2011-12	2012-13
1	Gujarat University Youth Festival	34	30	23	29	30
2	Saptadhara (Govt. Of Gujarat)	--	--	36	08	24
3	Talent Program	120	102	119	114	120

5.1.7 Enumerating on the support and guidance provided to the students in preparing for the competitive exams, give details on the numbers of students appeared and qualified in various competitive exams such as UGC-CSIR-NET, UGC-NET, SLET, ATE/CAT/GRE/TOFEL/GMAT/Central/State services, Defense, Civil Services, etc.

- The institute motivates and assists the students for appearing in competitive exams.

We ensure that the students are constantly updated on information about competitive

exams. The college library also is well equipped with adequate learning resources on competitive exams.

- We organize Mock General Knowledge MCQ test for job oriented competitive examinations.
- We provide coaching to the post graduate students of Chemistry and Geology under UGC NET/SLET scheme.
- We inform the students about the opportunities in their respective subjects after their post graduation. We also encourage them to appear for GRE/ SLET Examinations.
- M.G. Science Institute organized the special coaching course for NAVY entrance exam. This initiative of the Institute was sponsored by the employment office of the Govt. of Gujarat in 2010.

List of 'C' certificate pass students in NCC

Year	2009	2010	2011	2012	2013
No. Of Cadets Passed 'C' Certificate Exam	1	2	6	11	5

- **Name of the candidates who are successful and selected in Central/State services, Defense, Civil Services in last five years.**

Name	Job
Nir Bavra	Air force
Shukla Avdhesh	Air force, Delhi
Shah Bansri	Pilot, Air India
Shah Pratik	Geology asst.
Chaudhari Man	Geology asst.
Vyas Maharshi	Geology asst.
Tanveer Saiyad	Geology asst.
Alakh Premhani	Geology asst.
Patel Devendra	Talati
Makwana Hiren	Bank manager
Patel Shivam	Officer, Oriental insurance

5.1.8 What type of counseling services are made available to the students (Academic, personal, career, psycho-social, etc.)

M.G. Science Institute takes pride in providing the students with different kinds of counseling services. It not only includes the academic and career oriented but also,

personal, psycho-social counseling. Faculty members guide and orient the students in academic and personal matter by offering required help. All teachers provide academic counseling, and personal counseling.

Academic and career counseling:

The students at the time of admission are helped by our faculty by briefing them about the various opportunities and scopes in the industry, civil services, academic career, research career etc. They are given right kind of counseling which helps them to shape their career. During the term, various lectures are organized for career counseling as can be seen in the table below:

Academic and career counseling Lectures

Name of the Speaker	Topic of the lecture
Dr. Hatim Motiwala 2010-11	Biotechnological Industries
Ms. Deep contractor 2011-12	For IFS (Forest Department)
Mr. Himanshu Dharmdarshi 2012-13	For UPSC exams

Personal and psychosocial counseling:

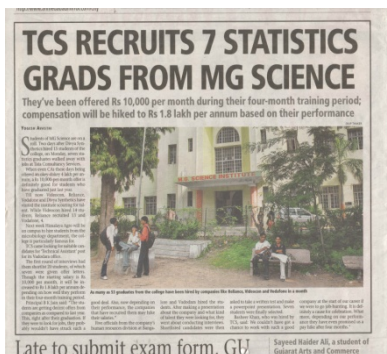
Our faculties are very supportive in guiding the students to face any social problems that they may have. They are counseled and motivated to become better citizens and advised to stand upright for any social cause.

Human development and personality sessions are conducted regularly in the college. In collaboration with Gujarat University, Ahmedabad, we arrange campus interview for Jobs.

- We arrange expert guest lecture sessions to educate the students on how to face the interviews.
- University level "Career Guidance and Personality development" Shibir is also organized by our institute.
- Three days crash programme for admission in M.Sc. Bio-tech course.
- MCQ book with solution for various subjects.

We organized a seminar for students on the newly introduced CBCS pattern to provide them information about it and guidance about selection of subjects. The teachers are in constant touch with students and a good rapport is developed between them. It makes students feel free to approach teachers and discuss not only their academic but also personal, social and psychological or health and financial problems.

5.1.9 Does the institution have a structured mechanism for career guidance and placement of its students? If 'yes', detail on the services provided to help students identify job opportunities and prepare themselves for interview and the percentage of students selected during campus interviews by different employers (list the employers and the programmes).



Ours is a UG college and almost 80% of the students opt for higher studies after graduation. Yet, the students from two PG courses as well as some students of UG programme do wish for placement. M.G. Science has a thriving placement cell which arranges campus interviews, guest lectures and counselling sessions to help such students to explore job opportunities in different industries. The guidance is provided to the students about various facets of interview techniques. Experts in the field of career counseling are invited to provide guidelines to aspiring job seekers. The following is the list of campus recruitment arranged by the placement cell of M.G. Science Institute in the last four years.

Sr. No.	Name of Company	No. of students selected
1	Alpaine Health Care	08
2	Fivestar Pharma Company	02
3	Claries Pharma	06
4	Cadila Zydus	02
5	Indonesia Biscuit company(INBISCUS)	01
6	Reliance Group of Industries, (Jamnagar)	04
7	TCS, Baroda	07

5.1.10 Does the institution have a student grievance redressal cell? If yes, list (if any) the grievances reported and redressed during the last four years.

- The institute has an active grievance redressal cell which is headed by the Principal. The cell addresses the grievances of students and gives a hearing to the disputes of the students. Taking senior faculty members into confidence, the principal arrives at a decision by consensus and mutual agreement.

- There is a separate women's cell (CWDC) which strives for better working condition for female employees & students of the college. The Women's Cell gives counseling to the female students and works for sensitizing the men towards the women's issues.
- So far no such serious incidents have been reported. Minor issues have been resolved amicably at the departmental level.
- There is a suggestion box stationed near the principal's office for raising the grievances.

5.1.11 What are the institutional provisions for resolving issues pertaining to sexual harassment?

The institute possesses a very dynamic CWDC (Collegiate Women's Development Cell) as per instructions of Gujarat University. This cell has the principal, two lecturers (one of them is convener), a non teaching faculty, two students (Ladies Representative of the college included) and a member from any NGO. This cell not only looks after the welfare of the women on the campus but also acts as the grievance redressal cell. It arranges lectures, workshops & educates women on the campus about their rights. There are no cases of sexual harassment reported so far. In the case of such eventuality, the coordinator of the CWDC and the concerned head of the department arrive at the final decision.

There was one case of eve-teasing which was resolved by counselling the concerned individual by the convener and the head of the microbiology department over a couple of weeks.

5.1.12. Is there an anti-ragging committee? How many instances (if any) have been reported during the last four years and what action has been taken on these?

As per the guidelines of the UGC, the college has formed an anti ragging committee headed by the principal and other heads of the department as members. The committee, with the support of the senior students, creates friendly environment for the freshers. The admission process is undertaken in a cordial environment which helps the first year students to feel comfortable in the initial phase of the admission.

5.1.13 Enumerate the welfare schemes made available to students by the institution.

There are various welfare schemes available for the benefit of the students on yearly basis. They mainly include financial support from the state government, central government, Alumni association and the institute.

Currently there are following welfare schemes for the students:

- Health welfare – under this scheme there is compulsory health check up of the first year students
- Fee waiver for economically needy students
- Poor boys library fund
- State Government insurance cover for all college students – under this, students are compensated in the case of fatal injury & death.
- Different types of Government schemes for SC/ST & OBC students
- Government scholarship for handicapped students.

The following is the list of various scholarship schemes for the year 2012-13.

Name of the scheme	Number	Amount (in Rs.)
Endowments	Table Below	
Freeships SC, ST	112	1,74,053
BAXI	175	2,74,610
Scholarship(Government)		
Scholarship(Institution)	No	
No. of loan facilities	No	
Any other financial support scheme		

Here is the list of the categories of the endowment scholarship sponsored by various donors:

Award for	Name of the Donor	Rs.	Total Rs.
For Securing the highest number of marks at the	Dr. A.M. Trivedi Prize	110.00	
F.Y. B. Sc. Uni. Exam	Smt. Panachand P. Shah Prize	550.00	
	Dr. R.D. Desai Prize	550.00	
	Shri R.K. Gange Prize	66.00	
	Shri M.B. Munshi Prize	135.00	
	Shri Vinayak R.Jani Prize	110.00	1521.00
For Securing the highest number of marks in Maths			
at F.Y. B. Sc. Uni. Exam. (A Group)	Shri R. K. Gange Prize	66.00	66.00
For Securing the highest number of marks at the	: Dr. R. D. Desai Prize	550.00	
S.Y. B. Sc. Uni. Exam	: Shri M. B. Munshi Prize	135.00	
	: Shri Vinayak R. Jani Prize	110.00	795.00

<i>For Securing the highest number of marks in</i>			
Microbiology at S.Y.B.Sc. Uni. Exam	Shri R. K. Gange Prize	66.00	66.00
For Securing the highest number of marks in	Shri R. K. Gange Prize	66.00	
Microbiology at T.Y.B.Sc. Uni. Exam	Smt Khatunbanu S. Pathan Prize	500.00	566.00
For Securing the highest number of marks at the	Shri J. M. Shah Prize	165.00	
T.Y. B. Sc. Uni. Exam	Dr. R. D. Desai Prize	550.00	
	Shri M. B. Munshi Prize	137.00	
	Shri Vinayak R. Jani Prize	110.00	962.00
For Securing the highest number of marks in	Shri R. K. Gange Prize	66.00	
Chemistry at T.Y. B. Sc. Uni. Exam	Dr. J. J. Trivedi Prize	330.00	
	Shri Rajabkhan S. Pathan Prize	500.00	
	Shri Harshadkumar R. Patel Prize	165.00	1061.00
<i>For Securing the second highest number of marks in</i>			
Chemistry at T.Y. B. Sc. Uni. Exam	Dr. J. J. Trivedi Prize	220.00	220.00
<i>For Securing the highest number of marks in</i>			
Physics at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	500.00
For Securing the highest number of marks in	Prof. N. J. Patel Prize	1100.00	
Physics at T.Y. B. Sc. Uni. Exam (for Male Candidate)	Shri M. V. Mistry Prize	165.00	1265.00
For Securing the highest number of marks in	Prof. N. J. Patel Prize	1100.00	
Physics at T.Y. B. Sc. Uni. Exam (for Female Candidate)	Shri M. V. Mistry Prize	165.00	1265.00
For Securing the highest number of marks in	Dr. Miss A. V. Vyas Prize	165.00	
Botany at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	665.00
For Securing the highest number of marks in	Prof. S. Mukherji Prize	650.00	
Geology at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	1150.00
<i>For Securing the second highest number of marks in</i>			
Geology at T.Y. B. Sc. Uni. Exam	Prof. S. Mukherji Prize	450.00	450.00

<i>For Securing the highest number of marks in</i>			
Mathematics at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	500.00
<i>For Securing the highest number of marks in</i>			
Zoology at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	500.00
<i>For Securing the highest number of marks in</i>			
Statistics at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	500.00
<i>For Securing the highest number of marks in</i>			
Biochemistry at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	500.00
<i>For Securing the highest number of marks in</i>			
Electronics at T.Y. B. Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	500.00
<i>For Securing the highest number of marks in</i>			
Geology at M.Sc. Uni. Exam	Shri Rajabkhan S. Pathan Prize	500.00	500.00
For Securing the highest number of marks in	Dr. C.G. Dave Scholarship		
Chemistry at M.Sc. - II Uni. Exam	Prize Fund	550.00	550.00
<i>For Securing the highest number of marks in</i>			
Chemistry at T.Y. B. Sc. Uni. Exam	Satyaprem Foundation Trust	1222.00	1222.00
Transferred to Poor Boy's Fund (College)	Jashubhai Patel Gold Medal P. Fund	220.00	220.00
		Total	15544.00

5.1.14 Does the institution have a registered Alumni Association? If, 'yes', what are its activities and major contributions for institutional, academic and infrastructure development?

The institute has a registered Alumni association called M. G. Science Alumni Association (MAA) which came into being in the year 2005. REG. NO: **F/12103/Ahmedabad, Date: 30th June, 2006.**

The Alumni association actively involves in academic as well as nonacademic activities of the institute. It consists of distinguished personalities i.e. Doctors, Eminent Scientists, Engineers, Vice Chancellors, Industrialists and top bureaucrats, professionals, etc.

The Alumni association works with the following objectives:

- To provide a forum to establish a link between the Alumni, staff and students of the Institute.
- To participate in activities which would contribute to the general development of the Institute.

- To give prizes and scholarships, and render financial aid to deserving students of the Institute.
- To promote facility of a 'Book Bank' ' to help those students who are in need.
- To provide a platform for organization of programs on personality development, interview techniques, leadership development, education on health, science, yoga, culture, literature, sports, etc., for overall development of students and the society in general.

The Alumni association organizes various cultural functions, scholarship facilities and farewell parties for the final year students. The Alumni have committed support for the various infrastructural development activities of the institute.

5.2 Student Progression

5.2.1 Providing the percentage of students progressing to higher education or employment (for the last four batches) highlights the trends observed.

Student progression	2008-09	2009-10	2010-11	2011-12	2012-13
UG to PG	Approximately 80% of the students enroll for PG studies.				
PG to M. Phil	--	--	--	--	--
PG to Ph. D	03	01	01	-	01
Employed Campus selection	-	10	05	08	02
Employed Other then campus recruitment	-	04	11	15	05

5.2.2 Provide details of the programme wise pass percentage and completion rate for the last four years (cohort wise/batch wise as stipulated by the university)? Furnish programmewise details in comparison with that of the previous performance of the same institution and that of the Colleges of the affiliating university within the city/district.

Year	Name of the Course/Programme	Applications Received	Selected	Enrolled		Pass percentage
				M	F	
2008-09	F. Y. B. Sc.	6884	1206	659	457	79.60 %
	S. Y. B. Sc.	573	573	259	319	94.58 %
	T. Y. B. Sc.	471	471	227	244	89.16 %
	M. Sc. – I (Chem.)	998	35	27	8	76%
	M. Sc. - II (Chem.)	-	34	17	17	98%
	M. Sc. – I (Geo.)	11	09	8	1	100%
	M. Sc. – II (Geo.)	11	11	2	9	100%
2009-10	F. Y. B. Sc.	8590	1693	903	790	85.00 %

	S. Y. B. Sc.	529	529	254	275	96.00 %
	T. Y. B. Sc.	531	531	228	303	93.00 %
	M. Sc. – I (Chem.)	35	35	19	16	72.00%
	M. Sc. - II (Chem.)	19	19	16	03	94.00%
	M. Sc. – I (Geo.)	18	14	07	07	
	M. Sc. – II (Geo.)	08	08	07	01	
2010-11	F. Y. B. Sc.	4000	838	436	402	79.00 %
	S. Y. B. Sc.	577	577	269	309	96.00 %
	T. Y. B. Sc.	493	493	221	272	93.00 %
	M. Sc. – I (Chem.)	34	34	19	16	68.00%
	M. Sc. - II (Chem.)	24	24	14	10	98.00%
	M. Sc. – I (Geo.)	20	15	08	07	
	M. Sc. – II (Geo.)	12	12	06	06	
2011-12	B. Sc. Sem - I	4800	787	419	368	56.26 %
	B. Sc. Sem – II					
	S. Y. B. Sc.	500	500	274	226	87.15 %
	T. Y. B. Sc.	529	529	229	300	86.00 %
	M. Sc. – I (Chem.)	34	34	22	12	80.00%
	M. Sc. - II (Chem.)	33	33	18	15	100%
	M. Sc. – I (Geo.)	27	14	12	02	100%
	M. Sc. – II (Geo.)	15	15	08	07	100%
2012-13	B. Sc. Sem - I	5000	1096	542	554	55.92 %
	B. Sc. Sem – II	1090	800	387	413	67.40 %
	B. Sc. Sem – III	550	550	274	276	57.25 %
	B. Sc. Sem – IV	550	550	274	276	72.94 %
	T. Y. B. Sc.	471	471	247	224	79.00 %
	M. Sc. – I(Chem.)	33	33	18	15	91.00%
	M. Sc. - II(Chem.)					
	M. Sc. - III(Chem.)	33	33	21	12	98.00%
	M. Sc. - IV(Chem.)					
	M. Sc. – I (Geo.)	25	15	08	07	
	M. Sc. - II (Geo.)					
	M. Sc. - III (Geo.)	14	14	12	02	
	M. Sc. - IV (Geo.)					

5.2.3 How does the institution facilitate student progression to higher level of education and/or towards employment?

As far as higher education is concerned, most of the interested students are well aware of various courses offered by Gujarat University. Still, the institute organizes some short term courses, training programs, seminars, workshops and expert lectures from academic field and industries to sensitize students towards higher studies and good courses run in other well known institutes and universities. A crash workshop is always organized to prepare the students for JNU entrance exam.

The placement cell of M. G. Science organizes campus interviews for the job placements and the institute is successful in attracting major industries like TCS, Reliance etc., for the campus recruitment. We also arrange lectures on interview techniques. On the basis of analysis of the feedback from the industries, market and the advance academic fields, the college organizes required training programme. Apart from these things, for the benefit of our students, we keep displaying news about admission, job placement and other training programs of other institutes and organizations from time to time.

5.2.4 Enumerate the special support provided to students who are at risk of failure and drop out?

There are special remedial classes for those students who are poor at academics. The subject teachers spot out those students who are not at par with other students in a particular subject. They are given extra coaching and special practical sessions.

Every effort is made to see that no student drops out of the studies due to financial constraints. The institute has arranged a poor boys' fund which provides financial assistance to the needy students. The Alumni association of M. G. Science regularly provides monetary help to the economically backward students. For the girl students who are married, the family members are counseled and encouraged to help the students to attend college regularly.

AGENCY FOR FINANCIAL SUPPORT	2008-09	2009-10	2010-11	2011-12	2012-13
Poor Boys Fund		Rs. 5085/-	Rs. 2920/-	Rs. 9615/-	Rs. 10020/-
Alumni Association	Rs. 3500/-	Rs. 8000/-			

5.3 Student Participation and Activities

5.3.1 List the range of sports, games, cultural and other extracurricular activities available to students. Provide details of participation and program calendar.

The institute has a wide range of extra-curricular activities for the students. They not only participate in various sports activities like athletics, badminton, swimming, etc., but also in cultural activities like folk and classical dance, singing, rangoli and debating competitions like extempore, group discussions etc. Here is an exhaustive list and calendar of cultural and sports events:





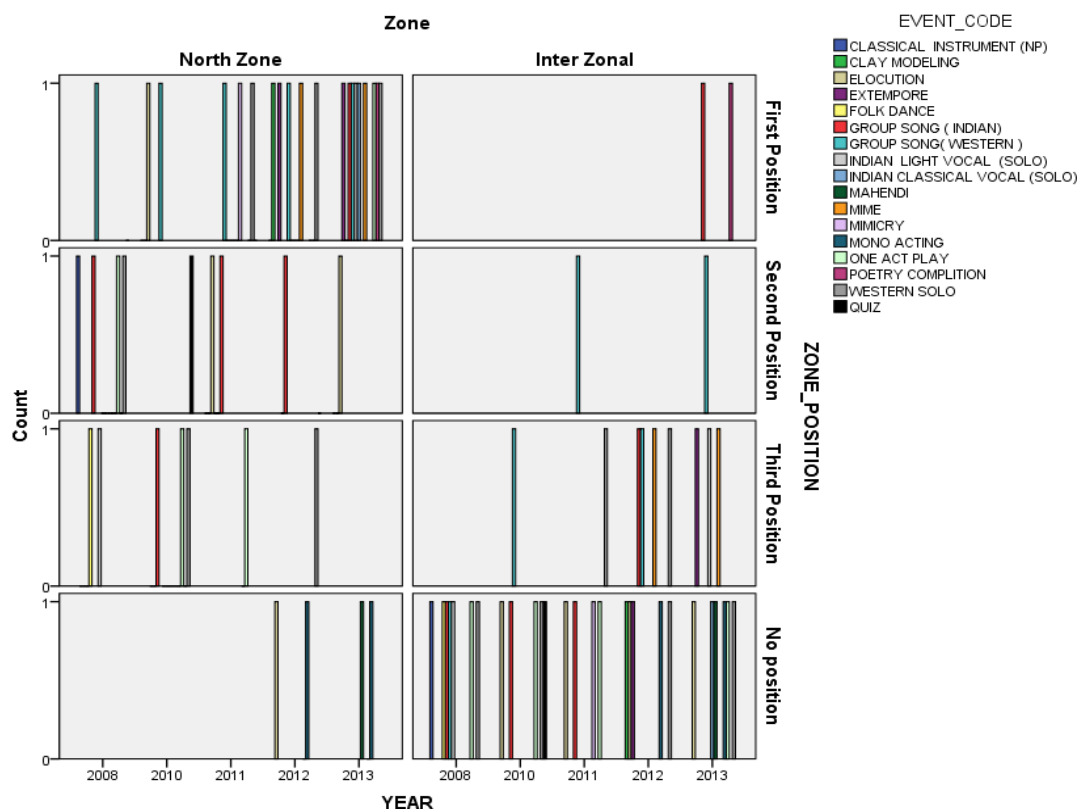
Table of participation in Cultural Events

Activity	Event	Year			
		2009-10	2010-11	2011-12	2012-13
Youth Festival (Aug.-Sep.)	Dance	11	10	9	7
	Music	13	12	11	11
	Theatre	25	27	21	26
	Literary	6	5	6	5
	Fine Arts	7	6	7	7
Talent (Jan.)	Dance	18	33	28	26
	Music	17	15	14	16
	Theatre	35	37	40	41
	Literary	7	11	8	20
	Fine Arts	25	23	24	17
Saptadhara State Level (Dec.)		-	36	8	24

Table of participation in Sports Events

There has been a tremendous participation in sports even though this is a science college. It's a matter of pride for us when our cricketers are selected in Gujarat Ranji Trophy cricket team. This can be seen in detail in 5.1.6.

5.3.2 Furnish the details of major student achievements in co-curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc. for the previous four years.



5.3.3 *How does the college seek and use data and feedback from its graduates and employers, to improve the performance and quality of the institutional provisions?*

The institute, through its placement cell keeps in touch with various demands of the industry. During the campus interview, the feedback is sought about the performance of the graduates and post graduate students of the institute. Such interactions with prospective employers help us improve the quality of various programmes and courses and their syllabi. The feedbacks received from the past students of the institute go a long way in streamlining the different academic and extra-curricular activities on the campus. Actually it helps in bridging the gap between the industry and the academia. To cite an example, the institute has introduced a certificate course in SPSS keeping in mind the burgeoning demand of business analytics in the industry. The idea of the SPSS course was born out of the result of the interaction between the industry, institute and former students. Many students and faculties have benefited through the SPSS course.

5.3.4 *How does the college involve and encourage students to publish materials like catalogues, wall magazines, college magazine, and other material? List the publications/ materials brought out by the students during the previous four academic sessions.*

The college Magazine: “Expressions” is a much sought after annual activity which creates much enthusiasm among the students. The magazine receives many articles ranging from literature to science, poems and anecdotes from the students. Photographs of various events and achievements are also included in the magazine. The students of different departments don their creative caps and immensely contribute to the successful publication of the magazine. The magazine is edited by the students themselves under the guidance of the faculty members. The magazine also highlights the year round activities conducted during the academic year and their reports.

The Geology Department circulates a news letter carrying the articles related to the subject, recent events and other information about the students.

The students from the various departments collect scientific articles from various sources and put them on display on the departmental notice boards. Students themselves also make efforts to write articles on various current topics and these are also exhibited on the departmental notice boards.

Lecture schedules and other important notices related to academic and extra-curricular activities are put on the notice boards.

5.3.5 Does the college have a Student Council or any similar body? Give details on its selection, constitution, activities and funding.

The students' council is an integral part of college management. As per the instructions of Gujarat University, the institute does not hold the election of the students' council. The council is constituted on the basis of merit. The academically brighter students of the Institute take the leadership and assume responsibility for different activities and events organized on the campus. There is also a provision for co-opting students who are active in sports and cultural activities. The membership of students' council is a prestigious spot and the members of the council create an atmosphere of harmony, verve and co-ordination in the day to day running of the college. The fund for the students' union comes from the semester fees collected by the Institute.

They actively take part in organizing various events like talent, youth festival, on-campus co-curricular activities, sports day, blood donation, tree plantation etc.

5.3.6 Give details of various academic and administrative bodies that have student representatives on them.

The students' Union comprises of members from different classes and subjects. The cultural and sports, cleanliness and library committees have a number of student members. The CWDC which looks after the interests of the fair sex on the campus has student members. Both NCC and NSS have profuse number of student members. These committees have a broader say in the day to day functioning of the above mentioned activities in the institute. At the time of admission, the committee of the senior students is given the responsibility of counseling to the admission seekers. There are various bodies functioning in the institute that have student representation.

5.3.7 How does the institution network and collaborate with the Alumni and former faculty of the Institution.

The institute has a highly active Alumni association. The members of its executive committee meet regularly to discuss aims and objectives of the Alumni association. They have created a vibrant network of the past and present students. The decisions are circulated among the members through various social media and phones. The institute remains in constant touch with the Alumni and apprise them about the latest developments on the campus. Various functions are organized in which present and former faculty members are invited. There is a comprehensive record of all the retired professors as well as administrative and laboratory staff. The institute often uses their

expertise in the interests of students. The Institute also invites the former faculty members to deliver lectures and also to conduct practical on regular basis.

Any other relevant information regarding Student Support and Progression which the college would like to include.

The M.G. Science Institute provides immense opportunities to the students to prove their metal and for their all round development and their progress has been tremendous.

CRITERION - VI

GOVERNANCE, LEADERSHIP

AND MANAGEMENT

CRITERION VI: GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 Institutional Vision and Leadership

6.1.1 State the vision and mission of the Institution and enumerate on how the mission statement defines the institution's distinctive characteristics in terms of addressing the needs of the society, the students it seek to serve institution's traditions and value orientations, vision for the future, etc.?

MISSION

M. G. Science Institute is committed to impart holistic knowledge in basic, pure and applied sciences with interdisciplinary approach to students from all sections of society. We shall instill high level of moral values and scientific skills in our students so that they become enlightened individuals and improve the living standards all around. Our special endeavour will be to develop our institute as a "Centre of Excellence" in teaching, research and service in the field of science.

VISION

We, at M. G. Science Institute envisage building a progressive learning community with scientific aptitude. We set global standards to make our students scientifically and ethically stronger, and they, in turn, will serve the nation and the human society to improve the quality of life.

The avowed objective of the institute is to provide students with a high quality science education while developing in them a sense of ethics and social responsibility. Although the courses are technical in nature, leaving little scope for inculcating core values, the institute strives to integrate its broad vision in the curricula by arriving at the judicious amalgamation of academic and non-academic activities. The academic activity at the institute aims at promoting excellence in learning, which is reflected in the sterling performance of students in various university examinations. This is only the partial fulfillment of our mission. But when we find our students participating with gusto in non-academic activities like blood donation camps, community services, tribal welfare, relief camps, literacy drives, research projects, environmental activities, we feel elated

and realize that we have taken yet another step towards realizing our mission of promoting learning for the benefit of community. The goals of M. G. Science Institute is to make possible all round development of the students. We strive to align our vision and mission to achieve the mental, physical, cultural, social, development of our students not forgetting the basic values like integrity, industry, honesty, justice, and tolerance.

The mission statement delineates the institute's unique character in terms of addressing the needs of society. M. G. Science Institute is a melting pot which attracts the students from different regions, different sections of society irrespective of class, caste, and creed. The institute takes the leadership when it comes to the service to humanity, be it environment issues, conservation efforts or spreading the scientific temper, the institute is at the forefront.

6.1.2 What is the role of top management, Principal and Faculty in design and implementation of its quality policy and plans?

It is the earnest endeavour of the principal, management and the faculty to constantly improve the standard of quality in terms of course delivery, examination and activities related to research. M. G. Science Institute is run by the Ahmedabad Education Society which has been making pioneering efforts for the spread of quality education since **1935**. The quality is the core value and fundamental ideal across as many as **26** institutes under its ambit.

The principal co-ordinates quality aspects through periodic meetings with the representatives of the management. In such meetings new initiatives and plans are discussed threadbare and steps are taken to ensure excellence at various levels of quality education. This is in line to meet the vision, mission and goals of the institute. The Principal and the Governing Body take up the responsibility of ensuring that the vision and mission of the institute are followed strictly. Developmental plans are deliberated in great detail and debated at the Governing Body meeting which is held monthly. The governing body discusses, appraises and prepares the roadmap for the future, discussing the viability and significance of ideas that aid the institute to flourish.

Apart from the meetings with the management, the Principal also arranges the meetings

with the heads of the department to discuss different quality issues in the actual teaching-learning process. The meetings of the HoDs happen at the regular intervals. It monitors the ongoing running of the College. The execution of policies is now taken over by the HoDs who look after the day to day management in partnership with the teaching and non-teaching members of the department.

The IQAC at the institute also prepares the concrete details regarding the quality issues. They prepare in advance proposals related to workshops, seminars and other infrastructural requirements. The meetings of the heads of the department which forms the part of IQAC are the regular features which oversee the day to day function of the institute.

6.1.3 What is the involvement of the leadership in ensuring:

The policy statements and action plans for fulfillment of the stated mission:

The principal is the obvious and natural leader in implementing the stated mission of the institute. The institute also encourages multiple leaderships providing the opportunities to the heads of the departments to set an example for the faculty members. They also make every effort of taking students together to meet the stated mission of the institute. The action plan for the fulfillment of the mission is achieved through the coordinated efforts of all the stake holders- principal, HODs, and faculty members. Everybody labours to achieve the excellence which is the desired goal of the institute. The goal is the fulfillment of the key policies and stated objectives of the institute.

formulation of action plans for all operations and incorporation of the same into the institutional strategic plan.

Action plans are prepared and put into practice by the HoDs in the partnership with the teaching and non-teaching members of the department. Action plans for the academic and co-curricular activities like internal exams, institute calendar, result preparation, cultural festival and several others are made at the beginning of semester. The principal coordinates the action plan for the year round activities with the help of the heads of the departments. The students are also involved through the interaction and mediation with students' union. The plans for such activities are often reviewed midway through the semester to evaluate the efficacy of the strategies.

Interaction with stakeholders

All the stake holders are taken into confidence at all the levels of the decision making. The interaction is a key activity which covers all the stakeholder- students, faculty, and heads of the department, the principal and the management. There are periodic meetings of heads of the departments which is chaired by the principal. The faculty and the students have the free access to the principal to deliberate the issues which require policy decisions. If there are any grievances, they are resolved amicably through discussion with all the stakeholders. There are also meetings of the student's union to chart out the plans for the year round activities. Such meetings also involve the representatives from the faculty to keep an eye on the events planned by the students. The Principal is aided by the heads of the department when it comes to dealing with the students on the various issues related to education, discipline, authority, co-curricular activity or personal affairs. The students' union committee along with the faculty collaborate with students at all the functional levels which result into collective interaction in the diverse areas ranging from development, counseling, research, and guidance. The employers who give opportunities to our students by providing them jobs are also our important stake holders and their views are also taken into account while framing different policies.

Reinforcing the culture of excellence

Excellence is an ideal we are aiming at in all endeavours. M.G Science has carved a niche for itself not only in the field of pure science, but also in allied disciplines like Information Technology, SPSS to cater to the demands of the industry. Various academic programmes and other activities of the institute are weighed at various levels on the scale of excellence, bringing into focus the entire stake holders- principal, management, HODs and above all students. The goal is to ensure high quality in the effective delivery of all the programmes, with the best possible use of available resources. Excellent university result, superlative performance in sports and cultural activities, national seminars, and workshops, successful delivery of UGC sponsored courses prepare the path of excellence for the institute. The culture of excellence is reinforced when the institute receives rave reviews from the different sections of the society.

Champion organizational change




Although the organizational set up is fixed and there is little scope for the change, we appreciate the dynamic ideas coming from the various stake holders which provide fluidity to the workings of the organizational set up. Administrative changes are implemented when it is required to achieve the growth. What is valued is the march towards excellence by the different organs of the organization.

6.1.4 What are the procedures adopted by the institution to monitor and evaluate policies and plans of the institution for effective implementation and improvement from time to time?

The institute has a time tested policies developed since its inception for monitoring and evaluating improvement in different spheres. We have constituted many smaller committees. Every committee has at least one senior member to guide and check the working of the team. The terms of reference of all the committees are well defined. Main committees of the college are, central committee, coordination committee, examination committee, student council, discipline committee, collegiate women's development cell. These committees have a convener. The convener keeps a watch on the proceedings and report to the higher ups. These are the teams which directly deal with the student problems. Prior to any event the members of the concerned team sit together, discuss the event, visualize problem areas and come to a common conclusion through democratic consensus. Responsibilities are shared voluntarily and the qualities are maintained and checked. Also, the committee comprising principal, vice principal and the office superintendent looks into the working of non-teaching staff. The office staff caters to the needs of students as well as the teaching staff. The committee keeps a watch on the work efficiency of the non-teaching staff and directs them for better interaction with students and teaching staff. The heads of the various departments monitor their non teaching staff and guide them to improve their competence.

6.1.5 Give details of the academic leadership provided to the faculty by the top management?

The Ahmedabad Education Society (AES) was established under the inspiration of Late Shri Sardar Vallabhbhai Patel, the first Dy. Prime Minister of Independent India, as a part of freedom struggle on the education front.

Shri G V Mavlanker	Shri Kasturbhai Lalbhai	Amrutlal Hargovandas
		
The First Speaker of the Indian Parliament	An Industrial Magnet and Philanthropist With Foresight	An Eminent Industrialist

The visionary trustees of the management as illustrated in above pictures provided the extraordinary leadership in the field of education by setting up the institutes of excellence in arts, commerce and science faculty. This rich tradition which began way back in 1935 has cultivated the idea of quality leadership in the subsequent principals. At present also the current principal is inspired by the vision of the past luminaries. The Principal is the main architect of the academic leadership under the guidance of the management. He provides the astute direction in all the different aspects of the academia. He guides, nurtures, and prepares the roadmap for the future growth. His vision of excellence is reflected in the various academic, administrative, co-curricular initiatives carried out at the institute. The principal is the role model for the faculty members to charter the path of progress. The management supports the participation of the faculty members in the international conferences by providing financial grant. The principal and management encourage the faculty to pursue research and avail research and development grants. They provide infrastructural and administrative support for the same. Their support has made it possible for the institute to be selected and funded by the DBT Star College Scheme” by the Department of Biotechnology, New Delhi from 2009 for promoting and strengthening infrastructure and training in life sciences.

6.1.6 How does the college groom leadership at various levels?

The institute grooms multiple leaderships providing each one to explore opportunities for this important trait. The principal is the fulcrum around which the leadership begins and spreads across the different organs. The administrative leadership is shouldered by the office superintendent under the guidance of the principal. The

heads of the department provide the academic leadership in the organization of workshops, seminars and functions. Students also learn the lessons of leadership when they actively participate in group activities of the department. The General Secretary and other members of the students' union have the fertile ground to execute different activities such as cultural festival, social activities, sports competitions, and popular lectures. The interclass cricket tournament is a fine example of leadership building exercise where the students of different classes compete for the honour and learn the precious lessons of teambuilding and co-ordination. These future leaders set the example of true leadership through their conduct and behaviour during the various activities on the campus. Seminars and workshops on entrepreneurship and cultural values are organized.

6.1.7 How does the college delegate authority and provide operational autonomy to the departments / units of the institution and work towards decentralized governance system?

The decentralization of power at the department level helps function better and also keeps a check on quality. As far as the academic activities are concerned the departments are free in terms of work load distribution, arrangement of the departmental time table etc. The head of the department is responsible for the quality checks at the departmental level. They in turn are answerable to the vice principal and principal.

The college has various committees to co-ordinate and monitor the academic as well as non-academic activities. The Academic Committee of the heads of the departments under the chairmanship of the Principal charts the academic calendar of the year. The committee prepares the basic framework of all academic activities of the college. The Academic Committee performs three basic functions:

[1] Academic co-ordination:

The academic co-ordination among different departments is essential for the smooth functioning of the college. The Academic Committee undertakes this task keeping in mind the needs and demands of the various departments. The committee prepares annual academic plan. It also fixes the course contents for various internal tests. This central committee also gives guidelines to the examination committee. The committee prepares and sanctions the financial outlay of every department. The committee pays frequent visits to all the departments to get the idea of various departmental activities.

The committee also co-ordinates with the university for various academic issues like new appointments, course revision, financial aids, admission policy, enrollment, etc.

[2] Research & development

The Research committee plays a key role in research and developmental activities of the college. The committee in consultation with the research committee evaluates the research projects of faculty members and gives a final go-ahead. It also assists the departments in activities like seminars, workshops, industrial visits, and guest lectures. It co-ordinates with various external agencies in conducting research and development activities. It also arranges resources for all these activities. The committee also weighs up proposals for new projects and courses. The committee also works for the maintenance of the existing infrastructure as well as developing new infrastructures.

[3] Supervisory function

The committee also monitors the academic inputs of lecturers. It also monitors the completion of teaching as per the syllabus. While assuring academic freedom of the teachers, the committee goes into the details of academic plans, remedial lectures, actual teaching in the classroom. The committee is vested with broad powers of taking disciplinary actions against erring teachers.

The college has various other committees to oversee the all round development of the students. Some of the committees are as follows:

1. Time table committee- prepares the time table of the college.
2. Examination committee- prepares the examination schedule of the college.
3. Committee for extra-curricular activities- arranges the cultural activities like annual festival, dance and music competitions, debating competitions etc. with the active participation of students. The committee selects and sends the students for various state and national level competitions. It also prepares the students for university youth festivals.
4. Discipline committee- is responsible for the discipline on the campus.
5. Placement/Career Counseling committee: Arranges placement and training activities.
6. Magazine Committee: is responsible for the publication of college magazine.

All the management resolutions are implemented. The management gives directions towards the admissions, exams and the general discipline which are strictly followed.

6.1.8 Does the college promote a culture of participative management? If ‘yes’, indicate the levels of participative management.

The institute ensures the contribution of all the stake holders- management, principal, faculty and students in its working and administration. The three layers of the administrative system consisting of the Governing body, Academic committee and a Student union makes certain that students and faculty are constantly consulted for their active participation in various activities. Same structure allows the management to get the reviews and feedback and feel the pulse of the stakeholders. It also serves to communicate clearly to the stakeholders, the vision-mission and the concerns of the management.

6.2 Strategy Development and Deployment

6.2.1 Does the Institution have a formally stated quality policy? How is it developed, driven, deployed and reviewed?

The institute has a formally stated quality policy. This policy is developed and implemented keeping in mind over all vision of the management. The management of M G. Science Institute believes in “**Global Education at local cost**”. This axiom is interwoven in over all focus on quality science education at a lower cost. High quality science education is the benchmark, we all have strived to achieve in all the different areas of academia-admission, curriculum delivery, allied professional courses, examination, guest lectures, seminars and workshops and university results. The major contributors to the development of quality policy are: the management with their global vision, the dynamic leadership of the principal and the academic committee consisting of the heads of the departments.

To ensure the quality performance in all the different spheres of education, key policies and strategies are prepared by the principal under the guidance of the management. The IQAC and the academic committee of the institute prepare the ground work for the quality management. To cite an example, the institute receives more than 8000 applications for the first year admission, but the institute sticks to the ‘**merit only**’ as the sole criterion for the admission. The academic committee

also takes the decision regarding the workshops, seminars, hands-on training for the faculty and students giving them an opportunity to enhance the quality of teaching-learning process. It is the sincere endeavour of the institute to provide quality driven input to the students to strengthen their performance in the areas of their choice. The institute is the recipient of the DBT Star College grant which has provided the students the platform to excel. They can use the latest instruments, participate in the training programmes, and attend the seminars and workshops at different research centres.

The quality is sustained through the regular teaching work which is the hall mark of M.G. Science. The students have an opportunity to have a one on one discussion with the faculty and explore deep in the areas of their interest. They can also make use of the fully equipped laboratories which help them in their experimentation work. The on-going projects at the institute give them a chance to dabble in the world of research. The library and the computer centres provide them an opening to discover the newer areas of learning. The students also get the chance to improve their personality by participating in cultural fiesta, sports competitions at state and national levels and other intellectual activities.

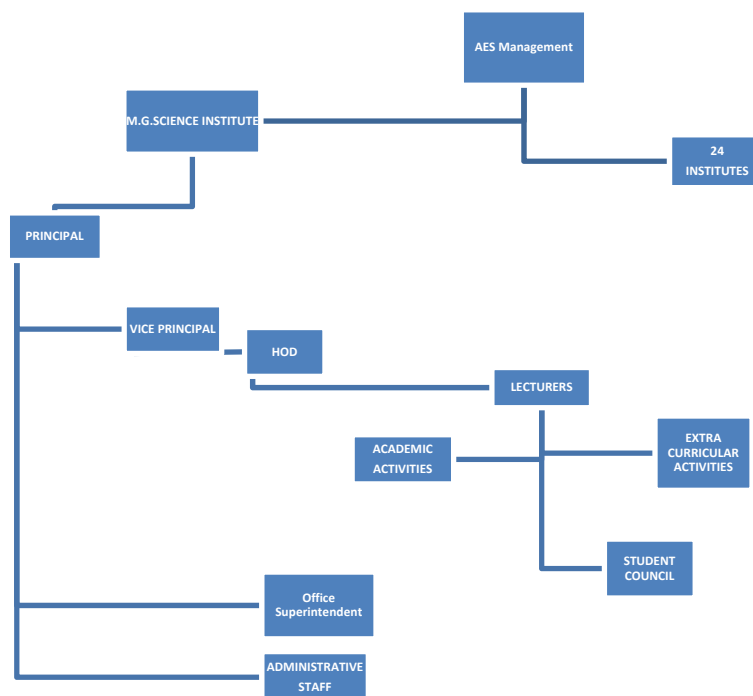
Academic excellence is a primary objective which is driven in terms of well-designed instructions, need analysis, clear appraisal, and standard monitoring. It consists of the scrutiny of final year result and also undertaking corrective action both at the personal or group level. The same practice is followed in co-curricular activities.

6.2.2 Does the Institute have a perspective plan for development? If so, give the aspects considered for inclusion in the plan.

As has been mentioned in the vision statement the institute has envisaged an overall perspective plan in accordance with the development plans visualized by the management. The institute wants to see itself as one of the leading institutes spearheading in the field of research & academic excellence.

- Improvement in the existing infrastructure keeping in mind the modern ideas
- More focus on research and outreach programmes
- Strengthening linkages with the industry and more opportunities for the placement
- Introduction of more PG programmes

6.2.3 Describe the internal organizational structure and decision making processes.



The management is the germinating point where new ideas are debated and discussed. There are regular meetings between the principal and the management to chart out the strategies for the new initiatives and even on the ongoing activities on the campus. The academic calendar is prepared according to the schedule prepared by the university. The plans and programmes for the fresh academic year are discussed in the meetings of the heads of the department. The onus to execute the policy decisions made in the meetings of the HODs (Academic Committee) is now on the shoulders of the HODs who handle the administration of the department bringing together the teaching and support staff. The academic calendar is uploaded on the website of the college and students' community can remain abreast with the day to day happening at the institute.

6.2.4 Give a broad description of the quality improvement strategies of the institution for each of the following.

Teaching & Learning

The best way to improve the quality is to introduce the technology in the teaching-learning process. The institute possesses fully equipped laboratories in the ten

departments. The institute makes the optimum use of the grants available for the purchase of the new instruments which upgrades the laboratories for providing the students an opportunity to do their practical with effectiveness. The library with rich resources of reference books and text books, and even internet resources are the principal indicators of better-quality teaching-learning. UGC grants, DBT New Delhi Star College Scheme grant and other grants from the Govt. of Gujarat have enabled all the departments and faculty to have an access to computer as well as Internet facilities. The campus is also partially Wi-Fi enabled so faculty can use their laptops as well on campus.

Faculty members are groomed in technologically friendly environment and are also trained in the use of new teaching-learning technologies, so the delivery of course content becomes high tech providing the students with improved teaching-learning experience. All the departments have got LCD projectors for effective teaching. Provision has also been made for common audio-visual and computer rooms as part of this strategy.

Another important aspect of quality improvement is bringing new career oriented courses for the benefits of learners. The institute has launched UGC sponsored and career oriented programmes and DBT sponsored certificate course to give an edge to the learners in the highly competitive market. We also offer Biotechnology as a vocational course. These career-oriented courses go a long way in improving the quality of learning experience of the students. Such courses are collaborative in nature and hence require the partnership with the industry in the neighbourhood.

Research & Development

Research and development is a key area for teaching and knowledge and M. G. Science takes pride in its performance in this field. The faculty members are actively involved in the research activities and have brought laurels to the institute. M. G. Science has a research committee consisting of experienced faculty members who encourage and promote research activities initiated by different faculty. Microbiology, Biochemistry, Chemistry, Geology and Botany departments are engaged in research projects worth crores of rupees. Almost 8 faculty members are PhD guides which create the atmosphere of extensive research in the institute.

The institute has organized more than 16 national and state level seminars, and more than 40 workshops and hands-on training programmes which give continuous

exposure to the students in the different disciplines of science.

The following is the list of research projects and special grants received by different faculty.

Details Of Research Projects			
Name Of	Department	Amount	Funding Agency
Ms. V.R. Nadagauda	Biochem	55000.00	U.G.C.
Dr. A. M. Shukla	Botany	275000.00	SAC - ISRO
Dr. P. K. Patel	Chemistry	57500.00	U.G.C.
Dr. B. B. Baldaniya	Chemistry	67500.00	U.G.C.
Dr. J. H. Parikh	Chemistry	46900.00	U.G.C.
Dr. Rina D. Shah	Chemistry	60000.00	U.G.C.
Dr. J. J. Vora	Chemistry	52500.00	U.G.C.
I.M.F. – I/C. Mr. U. V. Shah	Electronics	2135000.00	U.G.C.
Dr. R. D. Shah (G.M.D.C.Project)	Geology	340000.00	G.M.D.C.
Dr. R. D. Shah (Ganga River Project)	Geology	1830000.00	SAC – ISRO
Dr. R. D. Shah (Snow & Glaciers Project)	Geology	2100000.00	SAC - ISRO
Dr. N. Y. Bhatt (D.S.T. Kachchh Project)	Geology	700000.00	SAC – ISRO
Dr. M. D. Shukla (Mushroom Project)	Microbiology	281000.00	GUJCOST
Dr. V. N. Upasani	Microbiology	74000.00	Private
Dr. C.V. Pandya	Physics	60000.00	U.G.C.
Dr. B. K. Jain (Bioclimatic Index)	Botany	500000.00	SAC-ISRO
U.G.C. 11th Plan Grant (20%)		145656.00	U.G.C.
U.G.C. 10 th Plan Grant		624240.00	U.G.C.
Dr. V. N. Upasani (Coordinator)	Microbiology	60,50,000.00	DBT

The students also get the benefits of the research activities undertaken in various departments. Some former students also work as research assistants and contribute to the research activities. To cite an example the Microbiology department assigns some small projects to the students along with their regular studies and this initiative exposes them to the latest techniques in research. Such projects enable them get employed in advanced industries like Sun Pharma, Alembic, Torrent Pharma, and Claris etc. Such

highly research oriented students get employed in the foreign countries in the leading multi-national companies. Students trained in the in-house projects get appreciated even in the gulf countries as managers of different industries. Some of the trained students have become entrepreneurs creating jobs for the youth. Past students of the Microbiology department are pursuing Ph.D. work under the guidance of Dr. V. N. Upasani.

The institute encourages the faculty members to complete their doctoral research giving them the facilities for undertaking experiments in the research laboratory of the institute. There is an all round support for the researchers both in terms of resources and even finances. Special leave is granted for attending seminars and paper presentations. Many students and faculty members have won prizes for their research presentation.

Community Engagement

The prominent researchers of the institute are engaged in science-based, community oriented projects, involving the tribal community of the backward regions of Gujarat. Through these projects, students and faculty of various departments have provided a means of livelihood to the local populace by teaching them how to cultivate mushroom.



Under the *chiranjeev* project the students of M. G. Science tutored the children of non-teaching-class –iv employee of the M. G. Science Institute and it brought a lot of positive results among the community and even the media also took notice of this step. To create awareness about the dwindling bio-diversity, the students of M. G. Science hired three stalls in the exhibition called '*green-haat*' and this initiative generated awareness about pro-biotics, synbiotics among the rural community and the students. The students of the institute spread the idea of the proper solid waste management through biodegradation in the in the Satellite area of Ahmedabad. The students of the institute took active participation in the collaboration with the Ahmedabad Municipal

Corporation through rallies and processions.

The students and the faculty of Microbiology and Biochemistry departments undertook a project to train the farmers of the Saurashtra region for the proper usage of bio-fertilizers and bio-pesticides.

The students and teachers of the institute have been working to inculcate the idea of nutrition among the school students of various age groups at Community Science Centre through training and lectures. The faculty members and the students of the institute help the students of the rural schools of Gujarat for various science fairs and community based activities. The whole idea is to spread the scientific temper.

The Botany department of the institute has trained the students of the prominent schools in Ahmedabad in the field of plant tissue culture, under the DBT Start College Scheme. The faculty members of different science colleges were also given hands-on training on the plant tissue culture.

Human resource management

Human resource management is a key area for the self development of the employees of the institute. The Ahmedabad Education Society provides full freedom to the employees in realizing their true potential. The AES management gives the financial aid to the faculty members who go abroad for paper presentation at the international conferences.

The list of participants attended and presented research paper in International conference / seminar / symposium

Sr. No.	Name of participant	Title of paper	Place	Period	Funding agency
1	Dr. B. K. Jain	Traditional medication in Tapkeshwari hill range of Bhuj taluka, Kachh district, Gujarat (India).	Melbourne, Australia	from 23 rd July to 30 th July, 2011.	AES and Centre for International co-operation in science
2	Dr. B. K. Jain	Pre and post pollination changes in amino acid and mineral composition of anther and stigma in <i>Solanum surattense</i> Burm.f.	Melbourne, Australia	from 23 rd July to 30 th July, 2011.	AES and Centre for International co-operation in sciences and
3	Dr. B. K. Jain	Antibacterial and antifungal potentiality of leaf extract of <i>Phyllanthus fraternus</i> Webster	Antalya, Turkey	From 2 nd Nov., to 5 th Nov., 2013	UGC, New Delhi
4	Dr. A. M. Shukla	Studying the impact of Spatial resolution on coastal zone mapping	Beijing, China.	September 2009	SAC-ISRO
5	Dr. P. K. Patel	Investigation of corrosion Inhibition & their Inhibitive effect of some novel organic dyes on the corrosion of MSYS Aluminium-magnesium Alloy in alkaline media	London City Canada	From 23 rd to 26 th Nov, 2011	UGC, New Delhi

6	Dr. B. B. Badaniya	One pot synthesis of functionalized tetrahydro pyrimidine	Toronto Canada		UGC, New Delhi
7	Dr. B. B. Badaniya	One pot synthesis of functionalized tetrahydro -1-H Pyrimidines via multicomponent real time characterization by x – ray diffraction and anti cancer activity	Toronto Canada	From 20 th to 23 rd May - 2013	UGC, New Delhi
8	Dr. J. H. Parikh	Study of fungal cultures for their ability to textile dyes and their use in industrial effluent treatment	Philadelphia USA	17 th to 21 st March, 2013	UGC, New Delhi
9	Dr. V. R. Nadagauda	Study of fungal cultures for their ability to textile dyes and their use in industrial effluent treatment	Philadelphia USA	17 th to 21 st March, 2013	UGC, New Delhi
10	Dr. Rina D. Shah	Green pathways for the synthesis and ring cleavage of tetrazolo pyrrolopyrimidines	USA Maryland	June- 2009	UGC, New Delhi
11	Dr. D. G. Chaudhary	Special Olympic World summer game. Head of the delegation , India	Shanghai China	2007	Bharat Special Olympic
12	Dr. D. G. Chaudhary	Trained the trainers training programme	Singapore	28 th to 4 th April, 2013	Special Olympic International , USA
13	Dr. J. C. Patel	Estimation Zeludronic acid (Cancer Drug) by HPLC	Chicago, USA	03 rd to 09 th March 2009	UGC, New Delhi
14	Dr. C. V. Pandya	Electron atom / Molecule Collision Study	International Centre of Theoretical Physics, Trieste – Italy.	20 - 30 April 2009.	UNESCO
15	Dr. C. V. Pandya	Total ionization Cross sections for Si ₂ , SiC, SiC ₂ and Si ₂ C molecules	Lanzhou-China	24-30 July ,2013	UGC, New Delhi

When it comes to participating in the international symposium, the management provides the financial aid to the staff members. Paid leaves are granted for the participation in workshops and seminars. There is a lot of liberty to the staff members to actively participate in allied activities. The facilities are in plenty to the staff for their all round development. They can also use the college gymnasium for their fitness. Various leisure activities for the faculty are arranged by M. G. Science Staff Credit and Consumer Co-operative Society. The Credit Society also gives loans to the staff members when it is needed. The computer workshop was organized for the faculty members of the institute under the DBT Star College Scheme.

Industry interaction

Industry interaction is an important area for the institute as it provides vital inputs for the design of syllabus and the development of the institute. Through such interaction, the institute gets the knowledge about the current trends in the industry. The placement cell of the institute constantly remains in touch with the prominent industries in the vicinity. There are frequent industrial visits by the students and faculty members from

different departments every year which give the students hands-on training. Many industrialists who are Alumni also provide guidance about the trends in the industry. These industrialists are also members of Alumni who make many informal visits to show the right direction to the students. Lectures on entrepreneurship are arranged to make the students aware about the business opportunities and demands of the industry. Some courses in the institute are the direct result of the industrial interaction between the industry and the academia. The institute began the certificate course in SPSS as a result of the demand in the market for the courses related to business analytics.

6.2.5 How does the Head of the institution ensure that adequate information (from feedback and personal contacts etc.) is available for the top management and the stakeholders, to review the activities of the institution?

There is a direct channel of communication between the management and the institute. The principal remains in constant touch with the director of management. The information about the institute is regularly posted on the website and the annual college magazine is the repository of all information about the institute. The principal regularly briefs the management about the ongoing activities of the institute. The principal sends the summary of the feedback received at the end of the year to the management. He also attends the quarterly meetings with the management and apprises them about the happenings in the institute. M. G. Science believes in the transparent exchange of information between all the stake holders.

The annual function of the institute marks the celebration of remarkable feats achieved during the academic year. The principal addresses the gathering which is also attended by the representatives of the management. The principal presents the annual report and declares the report card of the annual performance of the institute in all the different categories- university results, gold medal winners, sports achievement, youth festival results etc.

6.2.6 How does the management encourage and support involvement of the staff in improving the effectiveness and efficiency of the institutional processes?

The Management makes an honest attempt to create the feeling of oneness among the staff members. There is a shared responsibility to achieve the objectives of the institute. There is an interdepartmental collaboration to accomplish the vision and mission of the

institute. To cite an example, the seminars organized by the Bio-chemistry and Microbiology departments received the participation and support from other nine departments. The other departments make the common cause with that particular department in the conduct of the event. This ensures the efficient performance with regard to institutional objectives. There are frequent training programmes, workshops and symposium organized and the highlight of such activities is inter-departmental co-operation. This also gives an opportunity to the faculty and students of the different departments to meet and deliberate on some common issues and some fresh ideas evolve through such get-togethers. Here is a list of research seminars organized by M. G. Science.

Sr. No.	Title of the seminar	Funding Agency	Amount Sanctioned	Date of Organization
1	Recent Development in Mineral Exploration Technology, Geology	UGC	70,000 /-	29 th & 30 th August , 2008
2	Frontier Advance in Chemical Science, Chemistry	UGC	55,000 /-	25 th & 26 th March 2008
3	Chaos Theory, Mathematics	GUJCOST	10,000 /-	10 th & 11 th April 2008.
4	Environment Education & Disaster Risk Reduction, Botany	UGC	45,000 /-	28 th & 29 th January 2009.
5	Teaching Zoology in the 21 st Century: The Road Ahead, Zoology	GUJCOST	50,000 /-	18 th July 2009.
6	Current Trends in Microbiological Science, Microbiology	UGC	1,12,500 /-	23 RD & 24 TH Jan., 2010
7	Impact of Statistics on Science and Society, Statistics	UGC	60,000 /-	25 th & 26 th Feb., 2010
8	Geomorphology- Evolution of Landforms Through Time, Geology	UGC	84,375/-	8 th & 9 th March, 2013
9	Current Development in Microbial Biotechnology	GSBTM	40,000/-	2 nd Jan., 2011

10	Creating awareness and sharing benefits of knowledge of Biodiversity	GBB	1,50,000/-	23 rd Jan., 2014
11	Laboratory Astrophysics- Application to Cosmic Dust	IUCAA & GUJCOST	1,55,000/-	12 th & 13 th Nov., 2010
12	Biochemistry, a Subject beyond compartmentalization	UGC & GSBTM	1,45,000/-	20 th & 21 st Dec., 2013
13	Climate Change Scenario past, Present & Future	GUJCOST	50,000/-	10 th Aug., 2013

The nucleus of the institute is the committee of the HODs which work together as a core team where decisions regarding shared responsibilities are taken and transparent strategies are formed. The responsibilities are equally divided when it comes to planning the workshop, preparing annual activity calendar, examination timetable, maintaining discipline on campus. There is an urge to make everyone feel that they are part and parcel of all the institutional process.

6.2.7 Enumerate the resolutions made by the Management Council in the last year and the status of implementation of such resolutions.

Resolutions made by the management	Status of implementation
Temporary appointment by the management 27/06/2013	Implemented as per the instruction
Rise in the salary of the daily wagers 27/06/2013	Implemented as per the instruction
Appointment of accountant for the institute 30/04/2013	Implemented as per the instruction
Appointment of peons 11/06/2013	Implemented as per the instruction
Renovation of the LR room	Procedures discussed and approved in meetings on July 10, 17 and 24, 2012 and

6.2.8 Does the affiliating university make a provision for according the status of autonomy to an affiliated institution? If 'yes', what are the efforts made by the institution in obtaining autonomy?

Yes, Gujarat University has the provision for according the status of autonomy to an affiliated college in a limited way. The management of M. G. Science has evinced

interest in it and they are planning to take the process forward.

6.2.9 How does the Institution ensure that grievances / complaints are promptly attended to and resolved effectively? Is there a mechanism to analyse the nature of grievances for promoting better stakeholder relationship?

The institute has stationed a suggestion box outside the Principal's office where complaints are dropped. This gives an opportunity to various stake holders to let their voice heard to the highest authority. The suggestion box is periodically opened, but there are hardly any note of grievances traced. On one occasion there was a case of eve-teasing reported, but was amicably resolved by the co-coordinator of CWDC and the Head, Dept of Microbiology.

6.2.10 During the last four years, had there been any instances of court cases filed by and against the institute? Provide details on the issues and decisions of the courts on these?

During the last four years, three cases were filed against the Institution.

Cases filed by the Institution: none.

Cases against the Institution: 3

[1] Shri. R.R. Rathod, the clerk has filed a case against the institute as he was suspended for his indiscipline and misbehavior. (No: 33/2011)

[2] Mr. N. G. Patel, the Retired Professor of the institute filed a case about his retirement age. (LPA -1369/2013).

[3] Ravindra Buddha, a temporary employee has filed a case against the termination of his job.(LCA/1018/2005)

6.2.11 Does the Institution have a mechanism for analyzing student feedback on institutional performance? If 'yes', what was the outcome and response of the institution to such an effort?

The institute has developed a mechanism to undertake the exercise of feedback from the various stake-holders. A standard questionnaire is given to the students to respond in a free and fair manner for the feedback. The questions deal with the performance of the faculty and even issues related to infrastructural facilities. The standard practices are followed in the analysis of the feedback. The statistics department is responsible for the

analysis of the feedback. The institute has recently revamped the ladies room in response to the feedback received.

6.3 Faculty Empowerment Strategies

6.3.1 *What are the efforts made by the institution to enhance the professional development of its teaching and non teaching staff?*

It is the sincere endeavour of the institute to promote the professional development of the teaching and non-teaching staff.

- The staff members are encouraged to participate in the workshops and seminars. Duty leave is sanctioned for the same reason.
- The faculty members are encouraged to become the Ph.D. guides to enhance their professional development. The institute has 29 Ph.D. faculty and 9 Ph.D. guides in the different disciplines.
- Many staff members are associated with the different professional bodies and render their services in the different academic committees of state universities. Two faculty members worked as the vice-chancellors of the top universities of Gujarat. Currently head, Mathematics department is working as a member of the search committee for VC of MS. University, Baroda. Just when this report is getting ready Dr. S. G. Yadav, Head, Dept. of Maths has been appointed as the Vice chancellor of Teacher Training University, Gandhinagar. One faculty works as an examiner for Cambridge University for their international examinations.
- Hands on training in Advanced Molecular Biology, computer training in MS-Excel and MS-office has been organized.
- There are number of state and national seminars organized which give faculty members opportunities to present research papers and they can also come in contact with the invited luminaries in their chosen field.
- Many faculty members are involved in the text book writing for the new syllabus under CBCS system. This is the project of Gujarat Government, Department of Higher Education.
- Faculty members have attended several workshops, seminars organized in the institute and other institute as part of DBT Star College Scheme activities.
- Three staff members from Botany and Zoology departments have undergone training in Plant Tissue Culture and Animal Cell Culture at PERD, Ahmedabad and Ganpat University, Kherva under DBT.
- A workshop on e-content development was also organized by Physics and

Microbiology department, which encouraged the staff to participate in NPTEL program and ICT.

6.3.2 What are the strategies adopted by the institution for faculty empowerment through training, retraining and motivating the employees for the roles and responsibility they perform?

The Institute has a standard policy for the faculty empowerment. This includes hands-on training programmes at the institute and outside the institute, freedom to attend national and international conferences, and liberty to retain finances earned through their departmental projects. The faculty is free to undertake the examination duties for different universities. They are also allowed to work as visiting faculties at different universities.

The Institute also appoints its faculty to be present at training programs at the State and National levels. Under the Knowledge Consortium of Gujarat (KCG), an initiative of Govt. of Gujarat, 6 faculty members have taken training in ‘Academic and Administrative Audit’, an academic quality enhancement programme.

Training programmes have been offered to various faculty and the students under DBT.

The table shows the programme details:

Hands on training

Sr. No.	Name of Program	No. of training	Total no. of Trainee
1	Isol ⁿ of gDNA <i>E. coli</i> & Agarose Gel Elect.	4	98
2	Solving Mathematical Problems by Software	1	35
3	Teacher’s training programme Bioinformatics	2	45
4	Data analysis using MS-EXCEL	1	19
5	Animal Cell Culture Basics	1	174
6	PASW	6	72
7	Biofertilizers production	6	5
8	Bioinformatics	1	19
9	Molecular Biology Workshops	1	9
10	E-content development	1	19
11	Immunotechniques	1	20
12	MS-Office	1	6
13	Photomicrography	3	65
14	Training in media preparation PTC	2	29
15	Training in sterilization techniques	2	29
16	PTC for school students	2	43
17	Immunodiffusion techniques & pDNA isolation	1	33
18	Comparative genomics & phylogenetics	1	10
19	Scope of Statistics / Statistical programme in today’s	1	50
20	Identification of bacteria by Rapid identification kit	2	100
Total			880

6.3.3 Provide details on the performance appraisal system of the staff to evaluate and ensure that information on multiple activities is appropriately captured and considered for better appraisal.

Annual Performance Index (API) has been implemented for all faculty members by the government of Gujarat. The API assesses faculty under the following three criteria: Teaching, Learning & Evaluation related Strategies; Co-Curricular, Extension and Professional Development Activities; Research and Academic Contribution.

The higher education department demands the API record during the pay revision and the principal accordingly instructs the faculty to fill up the details and after thorough scrutiny, it is sent to the higher education department. There is a minimum required score that has to be obtained by each faculty for the promotion and increment. This in turn spurs the staff members to excel in API by improving the academic performance. That is the outcome of the review of the performance appraisal reports by the management and the major decisions taken.

6.3.4 What is the outcome of the review of the performance appraisal reports by the management and the major decisions taken? How are they communicated to the appropriate stakeholders?

The API (Annual Performance Index) is examined by the Principal in consultation with the heads of the departments and then sent to the higher education department, Gandhinagar. The institute also keeps a copy of the API for the record of the institute. API is the perfect indicator for the faculty member to excel in academics. Based on the analysis, the government considers the revision of scale.

6.3.5 What are the welfare schemes available for teaching and non teaching staff? What percentage of staff have availed the benefit of such schemes in the last four years?

The staff members of the institute run the registered credit society for the benefits of the members. M.G. Science Institute Staff credit society has rolled out quite a few welfare schemes for the benefits of its members.

Both teaching and non-teaching staff are the beneficiaries. The society provides both long term and short term loans to the tune of 3.0 lakhs. There are other leisure activities arranged by the credit society. This includes excursion and tours. Children of staff members who have put up outstanding performance in board exam are also felicitated. There is also a provision of the emergency loans. Both teaching and non-teaching members are felicitated by the society at a function followed by a lunch.

Year	Loan 1		Loan 2	
	No.	Amount	No.	Amount
2008-09	13	1923075	15	307623
2009-10	10	1528164	18	362103
2010-11	13	1129866	9	197139
2011-12	11	2219673	11	227342
2012-13	12	2631952	9	182200

6.3.6 What are the measures taken by the Institution for attracting and retaining eminent faculty?

The institute prides itself in attracting the best faculty and provides them the ample opportunities for their professional development. All the departments of the institute have the best faculty members who have made a name for themselves in the world of academia. The institute has developed a work culture where faculty members have considerable freedom to pursue the activities that are close to their heart. They are provided with the facilities for research, individual personal space for the academic satisfaction, support for projects and doctoral fellowship. It is noteworthy to mention that no staff members have so far resigned from the Institute.

6.4 Financial Management and Resource Mobilization

6.4.1 What is the institutional mechanism to monitor effective and efficient use of available financial resources?

The Institute receives fund from various sources and this amounts to the tune of crores of rupees. It requires effective monitoring to make proper use of available financial resources. The management keeps an eye on the spending of the finances through proper scrutiny by appointed auditors. There are two types of audits- internal audits and statutory audits taking place at the institute. The internal auditor minutely audits the income and expenditure. The statutory auditor is responsible for final statement of expenditure and utilization certificates. The final audits are sent to the principal as well as the management with their suggestions and remarks.

When it comes to purchasing new instruments and other items, as per the norms of the management, three quotations are solicited from the standard firms and then

communicated to the management for the final approval. The order is placed to the minimum bidder keeping in mind the quality and post-supply services.

6.4.2 What are the institutional mechanisms for internal and external audit? When was the last audit done and what are the major audit objections? Provide the details on compliance.

The internal audit takes place twice in a year and the final audit is generally completed at the end of the financial year. A recognized chartered accountant firm does the annual review and analysis of the accounts and gives financial audited statement to the management with their comments. The management reviews the statement and sends the statement with their advice to the institute for the new financial year. The last audit was done in May 2013. There were no audit objections. The financial process at M. G. is transparent and all standard procedures are followed in the financial management.

PARTICULARS	YEAR					
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
STAFF PAY PACKET	29457907	37262410	34684505	54820118	67403788	74038779
LIBRARY	73957	75224	62060	30464	33706	57522
LABORATORY	1018533	500655	578711	646488	909894	442687
BUILDING MAINTENANCE	450805	453321	681607	1050938	1220735	1876140
MISC. EXPENSES	1448835	1303685	1213509	1228973	1388686	1577629
TOTAL	32450037	39595295	37220392	57776981	70956809	77992757

6.4.3 What are the major sources of institutional receipts/funding and how is the deficit managed? Provide audited income and expenditure statement of academic and administrative activities of the previous four years and the reserve fund/corpus available with Institutions, if any.

The Institution receives funding in the form of fees, grant from Govt. bodies such as UGC, DBT, SAC/ISRO, DST, GSBTM, GUJCOST, Gujarat Biodiversity Board and Gujarat Mining Development Corporation. The Management compensates the deficit in any of the projects. The management appoints both teaching and non-teaching staff on adhoc basis so that teaching is not affected due to lack of staff. The expenses for the

same are borne by the management.

Photocopy of the audited accounts of the institution for the last four years will be made available during the Peer team's visit. The audited statements of a/c will be made available to the Peer Team during the visit.

6.4.4 Give details on the efforts made by the institution in securing additional funding and the utilization of the same (if any).

The institution seeks funding from the following agencies. UGC, DBT, DST, KCG, GMDC & Alumni Association.

The institute timely submitted proposals to the above mentioned funding agencies and received grant for the various projects during the year 2007 to 2013:

Sr. No.	Funding Agency	Project	Amount Received
1	UGC	Extension of women's hostel building	38,45,592.00
2	UGC	Instrument Maintenance Facility (IMF)	21,00,000.00
3	UGC	Career Oriented Courses (Physics dept)	10,00,000.00
4	UGC	Career Oriented Programmes (Chemistry, Geology, Microbiology dept)	7,00,000.00
5	DBT	STAR College Scheme	60,50,000.00
6	GMDC	Construction of Geological Museum	17,00,000.00
7	Alumni Association	Cultural Programme, Scholarships	15,00,000.00
8	FIST-DST	Infrastructural Development of Chemistry department	25,00,000.00
9	KCG-Govt. of Gujarat	Soil Testing	24,14,160.00

6.5 Internal Quality Assurance System (IQAS)

6. 5.1 Internal Quality Assurance Cell (IQAC)

a. Has the institution established an Internal Quality Assurance Cell (IQAC)? If 'yes', what is the institutional policy with regard to quality assurance and how has it contributed in institutionalizing the quality assurance processes?

M. G. Science Institute has recognized the importance of quality assurance since its very beginning. Although we formally set up IQAC in 2010, the Committee of heads of the department has been solely responsible for the quality performance in all the spheres of academia for so many decades. All the heads of the departments are the members of IQAC and their frequent meetings in the principal's office is practically the same as the meeting of IQAC. The Institute had formed an IQAC according to

the guidelines of NAAC. IQAC has the following members: Principal as Ex-Officio, a Coordinator, a Management member, an educationist (External), selected head of the departments and some faculty members.

IQAC performs the following functions:

- To ensure quality in all the institutional activities
- To create healthy environment for teaching and learning.
- To nurture healthy practices.
- To prepare the schedule for exam, internal submission, seminar and workshops.

b. How many decisions of the IQAC have been approved by the management/ authorities for implementation and how many of them were actually implemented?

The IQAC prepared the following proposals and sent to the management for the approval.

- IQAC planned workshops for faculty development (Stress management, Documentation, Strategic Action Plan).
- IQAC proposed to turn the campus complete Wi-Fi zone.
- IQAC proposed the new policy for internal marks allocation.
- IQAC proposed the policy for merit only criteria for the first year admission.
- The format of the elective papers decided and sent to the university.

All these proposals were approved and implemented by the institute.

a. Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.

Yes, the IQAC has two external members. One member is the Principal, K.K. Jarodwala Science College, and the other is the Director, AES. They have supported the developmental activities at the institute.

b. How do students and Alumni contribute to the effective functioning of the IQAC?

There is no student and Alumni member on the committee of the IQAC. The institute is planning to incorporate them in the near future.

c. How does the IQAC communicate and engage staff from different constituents of the institution?

IQAC at MG Science Institute strives to achieve excellence in all the different fields of education. All the heads of the departments are the members of IQAC. And the

meeting of the heads takes place practically every fortnight. All the issues related to teaching and other allied activities are discussed and communicated to the staff members in a very systematic manner through notices circulated, both electronically and manually.

6.5.2 Does the institution have an integrated framework for Quality assurance of the academic and administrative activities? If ‘yes’, give details on its operationalisation

The culture of quality assurance is the sole motto of the institute and its reputation in the Western India rests on sterling quality in teaching-learning throughout its sixty years of existence. The extended network works on the collaborative efforts of all its constituents: the management, principal, the heads of the department and admin office. All the constituents work in harmony to spearhead the march towards the excellence. The Governing Body of the management and the academic committee work together to attain all round development of the students.

6.5.3 Does the institution provide training to its staff for effective implementation of the Quality assurance procedures? If ‘yes’, give details enumerating its impact.

Yes, the institute provides training to its staff for effective implementation of the quality improvement. The following are the details and impact:

- Three faculty have been sent for trainings on ‘Academic and Administrative Audit’ in an effort to improve the quality of education. It was conducted by Knowledge Consortium of Gujarat. This has created awareness and helped faculty to strive for quality.
- Prof. P. G. Joshi and Prof. H. G. Patel from Zoology Department participated in “Hands on training on Animal Cell Culture, cell separation and viability” at Institute of Life Sciences, Nirma University, Ahmedabad from 14th to 19th May 2012. This training has enabled them to acquire the necessary basic skills for starting the work on animal cell culture and train students for the same.
- Prof. Diti T. Chokshi & Prof. Sunita V. Jha participated in one day Second Biotechnology Seminar 2013 on “The Tomorrow that is here today” held at AMA, Ahmedabad on 16th March 2013.
- Three faculty members of Zoology Department –Mrs. Pratima Joshi (Faculty and Head), Mr. H. G. Patel and Mr. Kotadiya have taken hands on training of 3 days i.e. 8

to 9 Feb.2010 on Animal Tissue Culture at Intas-Biopharmaceutical Company Ahmedabad.

- A day long State level workshop for laboratory staff was organized.
- Three faculty members, Dr. Alpana Shukla, Dr. Nainesh Modi and Shri Dhaval Vaghela from Botany Department attended Three-day training in basic Plant tissue culture techniques at PERD centre, Ahmedabad, from 23rd to 25th Feb., 2010.

6.5.4 Does the institution undertake Academic Audit or other external review of the academic provisions? If 'yes', how are the outcomes used to improve the institutional activities?

Yes, the institute has undertaken external review of the academic provision by AAA, by the Govt. of Gujarat- KCG (Knowledge Consortium of Gujarat).

KCG has applauded the efforts of M. G. Science for the cause of science education in Gujarat and further strengthened its resolve towards excellence in education by awarding an 'A' grade.

6.5.5 How are the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/regulatory authorities?

The IQAC prepares and submits the report to the NAAC. M. G. Science had a delayed start in the formulation of IQAC and certain reports were submitted late, but now it vows to prepare and submit the report as per schedule.

6.5.6 What institutional mechanisms are in place to continuously review the teaching learning process? Give details of its structure, methodologies of operations and outcome?

The quality of teaching learning process is measured by the excellent results it receives year after year.

The performance of the students in university exams are discussed threadbare and any required modification in teaching strategies are deliberated by the academic committee. The institute conducts two internal examinations giving students the opportunity to prepare for the final university exam. The institute assigns assignments, quizzes based on the subject taught, field trips, seminars, etc. to review teaching and learning process. These activities are part of the internal evaluation. The marks allocated for such extra activities are 25% and an additional 5% is added for attendance and thus making total

internal 30%. The University external exam is of 70 marks. Thus there is constant internal assessment of students taking place at MG.

6.5.7 How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders?

Most of the information about the institute is displayed on its website and which covers all the aspects of development at the institute. The college prospectus is available on the institute website. The students are made aware about the quality aspects during the first year induction meeting which is addressed by the principal and the heads of the department. There are also orientation programmes during the second year admissions. Moreover, information is displayed on the departmental notice boards and the main notice board of the institute.

CRITERION - VII
INNOVATION AND
BEST PRACTICES

CRITERIA VII: INNOVATIONS AND BEST PRACTICES

7.1 Environment Consciousness

7.1.1 Does the Institute conduct a Green Audit of its campus and facilities?

Environment and environmental consciousness is the spirit and the driving force at M. G. Science Institute, which is reflected in its rich biodiversity. Our Institute has a sprawling 19.2 acres campus having some very old & rare plant species, medicinal trees, ornamental trees making it the greenest area of the city. Our campus houses the highest number of peacocks and many other rare species of birds and reptiles in the city and is declared as a safe zone for these endangered species. Over the last few years, 'Ecological Niches' have been set up on campus housing variety of species of plants. The Botanical garden of M.G. Science is one of its strongest assets. The campus is more eco-conscious and it is a plastic free zone which makes it a sought after place for morning walkers too.



Satellite picture of the College shows that it as one of the greenest areas of the city.

In our effort to develop the green campus, the staff and students have planted more than 500 plants and have been maintaining them. Any new construction on the campus passes through the green audit and the Botany Department works as a watch dog of the

green areas of the campus.

Ground areas that are not meant for sports have been transformed into a green enclave which look like mini-forests having plants from different parts of Gujarat. Though it is in the midst of the city, this attractive 19.2 acres of green campus provides the students with a pollution free zone for learning.

Administrative office is fully computerized and almost all the correspondence is made through E-mail and SMS which minimizes the use of paper. To minimize the usage of paper the size of the examination answer book has been reduced to eight pages and four pages (from the 20 pages used earlier).

Environment-friendly disposable materials are given preference at almost all functions.

A very enthusiastic Eco-club run by staff and students supervises and supports the theme of Environmental preservation in the campus.

7.1.2 *What are the initiatives taken by the college to make the campus eco-friendly?*

The Institute has taken a number of positive steps to turn the campus eco-friendly.

Energy conservation

Energy conservation is a key area in which everyone contributes to achieve the above objective. Strict measures and sincere efforts are taken for saving electricity by students and teachers. Everybody follows the rule of switching off the electrical appliances like computers or fans when not in use. Most scientific instruments have in built power saving stabilizers.

Our commitment to saving energy has two further expressions. All classrooms have been provided with an MCB outside to make it convenient to switch off lights and fans not in use at given times of the day.

The classrooms and labs are painted using a lighter shade so as to increase illumination. Also, in order to reduce overheads on electricity, the computer labs are not provided with AC. Only servers which occupy a small area are provided with an AC environment to reduce any downtime instances.

Currently we have a coordinated CNG gas distribution system by ADANI energy. The College also has a full-time gas mechanic who supervises all the individual connections in all departments which minimizes wastage.

In some parts of our campus, to conserve electricity, we have installed solar lights.

Water Harvesting

Rain water harvesting means collecting rainwater when it falls or preserving the runoff water in our own campus or premises. In addition, it also envisages taking measures to keep that water clean by not allowing polluting activities in the catchment area. The rainwater collected can then be stored for direct use or can be recharged into the groundwater.

Keeping above fact in mind, M G Science Institute has started this water conservation initiative since its inception. Our visionary founder has been a pioneer in this eco-friendly pursuit.



On our campus, the water is first collected from our sloping roof which is of a large surface area. It is then filtered and collected in a two stage storage system. We have about 20 ft × 12 ft × 6 ft underground tank. In addition, our labs are also equipped with small containers, which conserve water throughout the year. This stored water quenches our need for distilled

water, used in our laboratories in UG as well as PG level. Not only it saves a lot of money, but eventually it is also one of the best practices of water conservation. In all, we are indeed self-reliant as far as distilled water is concerned.

Further, rain water is stored in bulk and it is utilized as a raw material for the deionization plant at the Chemistry Department.

Hazardous waste management



Effective housekeeping system is practiced where hazardous waste is effectively managed. Chemical waste is destroyed by appropriate treatment. Paper waste is sent for recycling to WOW (Wealth out of Waste). We have made special efforts for safe waste disposal mechanisms. All laboratories have been instructed to separate waste into degradable and non bio-degradable for disposal. The aim is to channelize and ensure safe disposal of biological materials. The use of plastics in college premises has been minimized by sensitizing all the students, non-teaching and teaching staff about hazards of plastics. We have also

initiated plastic free days in our curriculum. We have developed an effective collaboration with Ahmedabad Municipal Corporation for the scientific disposal of solid waste. Our Institute is one of the stakeholders in policy making decisions and giving them a constant feedback on environment protection and safety.

Efforts for Carbon neutrality

Our green campus speaks volumes about our sincere efforts towards carbon neutrality. M. G. Science Institute is one of the greenest areas in the western part of Ahmedabad.

Various programmes, seminars and workshops are organized on the campus to promote the idea of carbon neutrality. To bring home the importance of this, on 3rd January 2014 students of M.G. Science organized the “No Vehicle Day”. On this day more than 1800 students and around 120 staff members reported to the college using public transport. The media took note of the efforts of our institute and published it as a cover story. The campus litter has been used in a project aided by Govt. to transform it to vermicompost to be used as a garden manure and a soil conditioner. This further reduces Carbon footprints.

E-waste management

Strict procedures are followed for the e-waste management by the management and housekeeping systems. Old obsolete computers and even instruments are properly scrapped using reliable sources.

7.2 Innovation Introduced During Last Four Years

7.2.1 Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the college.

Use of new technology for better output:

- Campus activities are monitored through CCTV cameras which help to maintain discipline and security.
- Admission process, examination process and other office work are made more accurate, speedy and eco-friendly by adopting automation facility.
- Consultancy works viz. Soil analysis and spectral analysis is also undertaken by staff and students.
- ICT based teaching methodology is given preference; many labs are upgraded with LCD projectors and Wi-Fi internet facility. Power point presentations and other e-contents are used for smart teaching. Faculty is given training for the same.
- The College introduced ‘compliance’ system as an academic reform. According to the University system of education, every student must have 75% physical presence in all classes in order to appear for the year end /semester-end examination. We insist on 90% attendance. In order to ensure that learning has taken place, students have to meet the faculty whose classes they have missed, and take up an assignment/ viva to demonstrate that they have learned the matter. This has created greater understanding between students and faculty, and improved relationships.
- Library up-gradation with increase in number of subjective reference books, e-

books, research journals, periodicals, newsletters in different subjects is regularly taken care of.

- Collaborations with N- list, NEPTL, OPAC etc. is made for the benefit of the research students of the respective subjects.
- Information and notices are circulated through SMS, the college newsletter, website and e-mail.
- Students and parents are invited to give their suggestions, feedbacks and comments through college web-site and in some departments by suggestion box. Admission forms and other administrative forms are available on the college website.
- Students have been motivated to get admission into some of the top Science institutes in the country and abroad, and some of them are eminent scientists today. These Alumni are invited frequently to address our students on recent developments and research opportunities. This leads to the development of a scientific temper, a research aptitude, and a culture which is rooted in scientific reasoning.
- In keeping with the decentralization trend, the College Management has, delegated Vice Principal with additional duties like monitoring examination system, Students Union and co-curricular activities.
- RO filter with cooler is made available to provide safe drinking water to all.

7.3 Two Best Practices

The institute has implemented a number of practices which are worth mentioning and have benefited the students for their overall development. Both of them have played a vital role and contributed to the achievements of the institutional objectives and helped in the improvement of the quality of education.

A) Consultancy Project through Open Competition with multiple beneficiaries

1. Title of the Practice:

Consultancy Project of Geology Department through Open Competition with multiple beneficiaries

2. Goal:

- (i) To utilize the resources and expertise available within the Geology Department
- (ii) To expose the students in the application of theoretical knowledge in the geological field

(iii) To achieve industry- academic collaboration

(iv) To enhance the infrastructural facilities

3. The Context:

There were a number of opportunities to gain various benefits in the applied field of Geology. The department was in the lookout for market opportunities so that they could utilize rich resources available in terms of skilled men power, support services, and high tech equipment. In the past the department has successfully completed research projects in collaboration with SAC-ISRO on wetland mapping of the entire country, snow and glaciers atlas of the western Himalayas and mineralogical mapping of the lunar surface from the Chandrayan data. Similarly consultancy projects were also completed on hydrogeological studies of various mines of GMDC (Gujarat mineral Development Corporation) and GIDC. A DST sponsored research project for five years was accomplished successfully.

With this background of varied experience of projects with premiere institutes, the department of geology ventured into a territory where no educational institute has ever stepped in. The department through open e-tendering process bagged the project of public sector unit (GMDC) of Govt. of Gujarat in which private agencies were also in competition.

4. Practice:

The department with its robust understanding of sound geological practices could sense the opportunity in the open market when an e-tender was published by the Gujarat Mineral Development Corporation in the newspaper. The tenders were invited for Geological Mapping and rapid reserve assessment of bauxite deposits of Jamanagar district, Gujarat using remote sensing and GIS techniques.

The Geology department with its past experience of undertaking complex projects felt confident to vie for this consultancy project which could go a long way in benefitting the available human resources in the department; viz., students, faculty, management and government.

The government of Gujarat has given the responsibility of accepting the e-tenders to (n)Code solutions, a division of GNFC Ltd, which is a govt. of Gujarat enterprise.

The department after deliberating with faculty members and the principal decided to apply for the e-tender. After going through tender document critically, the following points were considered for quoting the rate.

[a] scope of work

[b] total area of study

[c] time duration

[d] methodology

[e] equipment, software, material and human resources required

The final rate of Rs. 1.4 crores was quoted for e-tendering after deliberation with the faculty and the principal.

An academic institute rivalling with private, professional bodies was an event of great uniqueness. This innovative idea created a buzz in the professional circle as an educational institute jumped into a professional arena.

The institute got it registered with (n)Code solutions by paying prescribed fees. The prerequisite for registration and quoting the rate was the payment of earnest money to the tune of Rs. 200000/-. This was facilitated by the management with the recommendation of the principal.

Opening of the E-tender was temper proof and accurate process which prevents any untoward practice. To the surprise of everyone involved in the tender, the quotation of Rs. 1.4 crores of the institute was found the lowest one [L-1]. With its strong fundamentals, the department successfully wound up the project with great efficacy in time.

5. Evidence of Success:

The success was evidenced in the form of reports and map atlas. The work conducted by the department was highly appreciated by the authorities of GMDC. Even the media took note of the achievement of the institute.



The institute won accolades from different quarters for the successful completion of this project of great importance.

The various benefits were incurred in the form infrastructural enhancement, financial gains for the participants, up-gradation of knowledge and recognition of the institute.

Two research students, two M.Sc. students and one under graduate student were involved in the geological field work, report writing and other related work. It was a great learning experience as they got to work in a live project carried out by the department.

The GMDC got the highest benefit out of this project work. The estimation and quality of ores as given in the report was used for further detailed investigation which led to MOU for establishing alumina plant in the study area. The project of M.G. Science helped attain mutual benefits for not only students and the faculty but also private organizations and Public Sector Company.

6. Problems Encountered and Resources Required:

There were a few problems related to finance, techniques, and resources.

The moot question was whether to go for a competitive bidding process involving aspects related to finances and technology.

Another challenge was to raise the seed money of Rs.2 lac which was to be paid as earnest money.

To mobilize the resources constructively for the timely completion of the project.

The idea of an academic institute working for an industrial project through tender was in itself a big challenge.

7. Notes (Optional):

The institute set an example of entrepreneurship by entering into inhibited area of market economy controlled by strong professional organizations. This is an eye opener and the road map for the other academic institute to follow the path chartered by M.G. Science Institute for the benefit of students, faculty and the institute.

8. Contact Details

Name of the Principal: **Dr. B. K. Jain**

Name of the Institution: **M. G. Science Institute, (Mafatlal Gagalbhai Science Institute)**

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B) SOIL ANALYSIS & PREPARATION OF SOIL HEALTH CARD

1. Title of the Practice:

SOIL ANALYSIS & PREPARATION OF SOIL HEALTH CARD

2. Goal

- (i) The students should get the knowledge of soil composition and soil analysis and should also be financially benefited.
- (ii) Farmers should get the knowledge of their soil composition, so that, if required, they can add more fertilizers to the crop so that they can get more yield and better quality crop.
- (iii) It is a tripartite project in which the Govt. of Gujarat, teachers and students work collectively for the benefit of society.

3. The Context:

The students analyzed for the different five parameters of the soil viz. pH, Electrical Conductance (EC), Organic carbon, Phosphorus and Potassium.

Soil Analysis data

Year	Number of soil sample analyzed	Number of students involved in the analysis	Amount allocated by government
2010-2011	15,177	41	
2011-2012	7,972	17	
2012-2013	9,687	20	

4. The Practice:

The Agricultural Department of Govt. of Gujarat approached the institute and offered to carry out the project on “Soil Analysis”. The Institute took keen interest in the project, as it gave an opportunity to work on a project that has a noble aim. The students of the various departments were invited to take part in this project and they were selected on the basis of merit and their interests. The selected students and teachers were sent at Soil analysis laboratory at Gandhinagar where they were imparted skilled training in the method of soil analysis. They were provided with the technical know-how about this project. The knowledge gathered was put into practice in the laboratory of our institute. The students were allotted the samples for the soil analysis. They analyzed the soil samples gathered from the different parts of Gujarat under the supervision of the professors in charge. The samples were analyzed using the prescribed methods and crosschecked by the govt. monitoring agency. The results were found satisfactory. The

participants prepared the soil health cards and they were sent to the government and they in turn distributed to the concerned farmers. The soil health cards contained the information regarding the chemical composition of soil which helped them to determine which crops to cultivate in a particular type of soil. This analysis also helped them to choose the fertilizer required for their soil for getting optimum yield from the crop.

Besides helping the farming community, the project of Soil analysis has helped a number of the students to gain the knowledge of soil composition and analysis of various parameters viz. pH, Electrical Conductance (EC), Organic carbon, Phosphorus and Potassium. These five parameters are of utmost importance to the farmers for the cultivation of crops.

In the chemistry laboratory of the Institute, they get hands on training in the projects granted to the college by the government.

Role of soil electrical conductivity:

Since sand has low conductivity and clay has high conductivity, soil electrical conductivity correlates very strongly with particle size and soil texture. Soils prone to drought or excessive water holding will show variations in soil texture that can be delineated using soil electrical conductivity.

Since water-holding capacity is intimately linked to crop yields, there is an enormous potential to use soil electrical conductivity measurements to delineate areas with different yield potential.

Role of soil pH:

The “ideal” soil pH is close to neutral, and neutral soils are considered to fall within a range from a slightly acidic pH of 6.5 to slightly alkaline pH of 7.5. It has been determined that most plant nutrients are optimally available to plants within this 6.5 to 7.5 pH range, plus this range of pH is generally very compatible to plant root growth. Nitrogen, K, and S are major plant nutrients that appear to be less affected directly by soil pH than many others. Phosphorus, however, is directly affected. At alkaline pH values, greater than pH 7.5 for example, the HPO_4^{2-} phosphate ions tend to react quickly with calcium (Ca) and magnesium (Mg) to form less soluble compounds. At acidic pH values, the H_2PO_4^- phosphate ions react with Aluminium (Al) and Iron (Fe) to again form less soluble compounds. Most of the other nutrients (micronutrients especially) tend to be less available, when soil pH is above 7.5, and in fact are optimally available at a slightly acidic pH, e.g. 6.5 to 6.8. The exception is

Molybdenum (Mo), which appears to be less available under acidic pH and more available at moderately alkaline pH values.

Role of organic Carbon:

Soil carbon improves the physical properties of soil. It increases the cation exchange capacity (CEC) and water-holding capacity of sandy soil, and it contributes to the structural stability of clay soils by helping to bind particles into aggregates. Soil organic matter, of which carbon is a major part, holds a great proportion of nutrients, cations and trace elements that are of importance to plant growth. It prevents nutrient leaching and is integral to the organic acids that make minerals available to plants. It also buffers soil from strong changes in pH. It is widely accepted that the carbon content of soil is a major impact in the plant's overall health.

Role of Phosphorus:

Phosphorus is a component of the complex nucleic acid structure of plants, which controls Protein synthesis. Phosphorus is, therefore, important in cell division and development of new tissues. Phosphorus is also associated with complex energy transformations in the plant.

Role of K:

The main role of Potassium is to provide the appropriate ionic environment for metabolic processes in the Cytosol, and as such functions as a regulator of various processes including growth regulation.

5. Evidence of Success:

Over the period of last three years, approximately 32000 samples were analyzed.

The targets given in each of the years were achieved well in time. The work was performed during the summer break and the results were reviewed by the monitoring committee of the government. About 5 percent of samples were re-analyzed by the external agency to check its veracity. The results were matching which justified the efficiency of the students and staff members.

The success of the project can be gauged from the fact that it not only helped the students in getting the exposure of the real life project and financial gain, but also to the farmers in improving their crop yield and quality.

6. Problems Encountered and Resources Required:

There were a few problems related to samples, instruments and resources.

Samples for analysis received were not in the standard forms, so new samples were required which extended the time. As it was a government project, the availability of the finance was erratic and the institute had to bear the burden of finances. There was also a problem related to the equipment involved in the project. Some instruments needed regular calibration.

7. Contact Details

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Post accreditation initiatives

The institute has made every effort to take new measures keeping in mind the realities of the new world. We have taken so many steps to upgrade quality of education at the institute. Though the institute was adjudged 'A' level due to its all-round performance to the satisfaction of peer team during accreditation, we did not stop ourselves and worked hard to achieve higher standards during last five years. We are indeed indebted to the peer team of the first cycle for their constructive suggestions regarding further improvement in the quality of education at our Institute. The following is the indicative list of the Post accreditation initiatives taken by the institute.

- We have introduced new career oriented programmes and certificate courses to provide more options to the students.
- The institute has developed 6 computer labs with more than 150 terminals for the successful implementation of newly launched programmes.
- We have also developed language laboratory for the promotion of communication skills among the students.
- The institute has organized 15 national and state level seminars to encourage activities related research and development.
- The institute has received substantial grant for 6 departments under DBT star college scheme to boost activities.
- The institute launched a certificate course in SPSS for the market research.
- The institute extended facilities in the girls' hostel with the help of UGC grant.
- There is a robust partnership with the premiere institutes like ISRO, SAC, PRL, GUJCOST, DBT, ISR, CEE etc.
- The institute successfully implemented CBCS system introduced by the university.
- The management provides partial travel grants to faculty members for attending the international conference.
- The institute organized Gujarat University Youth festival in the year 2008.
- There is a constant assistance for the faculty members for taking on new projects of millions of rupees.
- The up-gradation of laboratories and new purchases of latest equipment.
- More than 50 percent of staff members completed Ph.D. and others are pursuing Ph.D.