M. G. Science Institute, Ahmedabad

Autonomous | Affiliated to Gujarat University, Ahmedabad

(Managed by The Ahmedabad Education Society)

Department of Botany

Bachelor of Science (Hons.) in Botany

(Effective from Academic Year 2026-27)

Annexure 3: **Semester- V**

Botany SEC	**BOMSEC-356**	**Production Horticulture (Theory & Practical) Credit-2**

COs with Cognitive Abilities

COs	COGNITIVE ABILITIES	COURSE OUTCOMES
CO1	**UNDERSTANDING**	Explain the scope, importance, and branches of horticulture, and describe various asexual propagation techniques and nursery management practices.
CO2	**APPLYING**	Demonstrate appropriate cultivation practices for major fruit (mango, banana), vegetable (tomato, okra), and flower crops (marigold, rose) through hands-on field and nursery work
CO3	**APPLYING**	Apply knowledge of nutrient, water, and weed management strategies, including the use of manures, fertilizers, irrigation systems (drip, sprinkler), and weed control methods.
CO4	**ANALYZING**	Analyze the effectiveness of vegetative propagation methods (cutting, layering, grafting, budding) and nursery practices in crop production.
CO5	**EVALUATING**	Evaluate integrated pest and disease management (IPM) strategies and their role in sustainable horticultural production.

COs / POs	PO1	PO2	PO3	PO4
CO1	3	2	1	2
CO2	3	3	2	3
CO3	3	3	2	2
CO4	2	3	2	3
CO5	2	3	2	3

Unit No.	Title of Unit and Contents	No. of hours
I	**Theory** **Introduction to Horticulture:** • Definition, scope and importance • Branches of horticulture (Pomology, Olericulture, Floriculture, etc.) **Propagation Techniques:** • Asexual propagation • Nursery practices and management **Cultivation Practices for Major Crops:** • Fruit crops: Mango, Banana • Vegetable crops: Tomato, Okra • Flower crops: Marigold, Rose **Nutrient, Water, and Weed Management:** • Manures and fertilizers • Irrigation methods: drip, sprinkler, furrow • Weed control methods (manual, mechanical, chemical, and mulching) **Pest and Disease Management:** • Integrated Pest Management (IPM) basics	**15** **Credit-1**
II	**Practical** 1. Identification of Horticultural Tools and Equipment. 2. Preparation of Nursery Beds and Potting Mixtures 3. Vegetative Propagation Techniques (e.g., budding, cutting, layering, grafting) 4. Preparation and Application of Organic Manure (Vermicompost, FYM) 5. Irrigation Demonstration: Drip and Sprinkler Systems 6. Integrated Pest and Disease Management Demonstrations	**15** **Credit-1**

References:

1. Fundamentals of Horticulture by K.V. Peter (ICAR / New India Publishing Agency)
2. Production Technology of Vegetables and Flowers by A. Thamburaj and N. Singh (ICAR)
3. Fruit Crops by T.K. Bose, S.K. Mitra& D. Sanyal (NayaUdyog, Kolkata)
4. Vegetable Crops by T.K. Bose and M.G. Som (NayaProkash)
5. Practical Manual on Production Technology of Vegetables and Flowers by K. Srinivasulu, G. Ramesh Babu& G. Ramesh (Satish Serial Publishing House)
6. Weed Management in Horticultural Crops by V. Ponnuswami and S. Anbumani (New India Publishing Agency)
7. Post-Harvest Technology of Horticultural Crops by K.P. Sudheer and V. Indira (New India Publishing Agency)
8. Introduction to Horticulture by N.F. Childers (W.H. Freeman & Company)
9. Principles of Horticulture by C.R. Adams, K.M. Bamford, and M.P. Early (Elsevier / Routledge)

DSC-SEC-BOT- 356- Theory & Practical

Time: hours		**Maximum marks – 25**
Q.1 Unit I	Attempt any 7 out of 12 MCQs/Short question (One- or Two-line answer)/ Fill in the blanks/True or False etc.	14
Q.2 Unit II	Identify and describe A, B & C	09
Q.3	Journal	02