

HORTICULTURE
CLASS–XII
ELECTIVE
BASIC HORTICULTURE (762)
THEORY

Time: 3 Hours

Marks: 60

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| 1. Business opportunities in horticulture. | 6 |
| 2. Principles of preservation and value addition of Horticultural Produce (Fruits, Vegetables and flowers) | 15 |
| 3. Types of syrup, brines and food colour used in preservation of fruits, vegetables and flowers. | 4 |
| 4. Urban Horticulture. | 8 |
| 5. Weeds of horticultural crops and their management. | 5 |
| 6. Methods of propagation of horticultural crop. | 15 |
| 7. Planting material for horticultural crops. | 7 |

PRACTICAL

Time: 2 Hours

Marks: 40

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| 1. Visit to a processing plant. | 3 |
| 2. Visit to a fruit, vegetable and a flower market. | 3 |
| 3. Harvesting, safe plucking & storage of fruits. | 6 |
| 4. Identification of food colours. | 2 |
| 5. Primary Processing (including Cleaning and Sorting/Grading) and preservation of fruits (Including drying and addition of preservatives). | 4 |
| 6. Identification of different preservatives and preparation of syrups and brines. | 5 |
| 7. Identification and taste of different value added products of fruits and vegetables such as Jams, Jellies, Squash, Pickles, candies, canned item packs. | 4 |
| 8. Identification of common weeds of orchards and vegetable farms. | 3 |
| 9. Visit to a tissue culture laboratory. | 5 |
| 10. Harvesting and Primary processing of flowers. | |
| 11. Identification of flood arrangements such as Bouquets, Rangoli, Garland, Ikebana etc. | 5 |

CLASS–XII
OPTIONAL–I
OLERICULTURE (763)
THEORY

Time: 3 Hours

Marks: 60

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| 1. | Different production system and modern methods of vegetable cultivation. | 10 |
| 2. | Industrial importance of vegetable and setting up of industry based on the vegetable crops. | 5 |
| 3. | Cropping system with vegetable crops. | 10 |
| 4. | Production technology of important vegetable crops. | 15 |
| 5. | Fertigation in vegetable crops. | 5 |
| 6. | Role of chemicals and growth regulators in vegetable production. | 5 |
| 7. | Seed production techniques of vegetable crops. | 5 |
| 8. | Hybrid seed production of vegetable crops, An entrepreneurship opportunity. | 5 |

PRACTICAL

Time: 2 Hours

Marks: 40

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| 1. | Visit to vegetable field to study methods of vegetable cultivation. | 4 |
| 2. | Identification of vegetable seeds and vegetable crops at different growth stages. | 4 |
| 3. | Determining the germination percentage of vegetable seed. | 2 |
| 4. | To study vegetable treatment with fungicide and bacterial culture. | 2 |
| 5. | Studying vegetables classification according to economic parts used. | 1 |
| 6. | Preparing vegetable nursery beds. | 2 |
| 7. | Raising vegetable seedling in nursery bed and protrays. | 2 |
| 8. | Identification of major diseases and insect-pests of vegetables. | 2 |
| 9. | Preparation for sowing/transplanting of vegetable crops. | 2 |
| 10. | Sowing/transplanting of vegetables in main field. | 2 |
| 11. | Fertilizer application for vegetable growing. | 2 |
| 12. | Preparation of pesticide solutions and its spray in vegetable crops. | 2 |
| 13. | Preparation of processed products from vegetables. | 2 |
| 14. | Breaking dormancy to induce germination in potato. | 2 |
| 15. | Hybrid production technology of tomato. | 2 |
| 16. | Use of protected structures for vegetable cultivation. | 2 |
| 17. | Harvesting indices, grading and packaging of vegetables. | 2 |
| 18. | Calculating cost of production of important vegetable crops. | 1 |
| 19. | Visit to vegetable based industry. | 2 |

CLASS–XII
OPTIONAL–II
POMOLOGY (764)
THEORY

Time: 3 Hours

Marks: 60

1. Importance of fruit culture (economic preposition, health benefits etc.) Setting up of industry based on the fruits present position and scope of fruit processing and equipments required for setting up a processing unit. 6
2. Cultivation of temperate of fruits (apple, pear, plum, peach, apricot, walnut, almond). 5
3. Cultivation of tropical fruits (mango, banana, papaya, sapota, pineapple etc.). 5
4. Cultivation of sub–tropical fruits (pomeranate, litchi, citrus, grapes, ber, aonpla etc.) their Cultivation of temperature fruits (apple, pear, plum, Alume, Peach, apricot, walnut, almond) cultivation practices with special reference to origin, varieties (cultivars, climate, soil, land preparation, planting, manuring, irrigation, harvesting, ripening of fruits, grading, packaging, marketing) control of insect pest and diseases. 4
5. Root stocks of different fruit crops, their propagation, nursery management. 4
6. Management of rootstocks and mother stocks. 3
7. Fertigation in fruit crops. 4
8. Maturity standards, harvesting, ripening, grading of fruits etc. 6
9. Mechanized harvesting of fruits. 6
10. Role of biotechnology and micro–propagation of importance fruits crops. 5
11. Pesticide use, safety of operators and consumers, concept of minimum residue limit in fruits crops. 5
12. Orchard rejuvenation, head back and high density planting in fruits. 3
13. Packing, storage and value addition and value added products from fruits. 4

PRACTICAL

Time: 2 Hours

Marks: 40

1. Visit to high density orchard, identification of fruit trees and varieties.
2. Studying fruit setting and fruit dropping in important fruits crops.
3. Laying out different systems of irrigation for young and adult fruit trees in orchard.
4. Planting of fruit trees such as papaya, citrus, mango etc.
5. Mulching in fruit orchard (plastic and biological).
6. Performing intercultural operation in orchard.
7. Selecting at least two fruit species and maintaining them from flowering till fruiting.
8. Training and pruning of available trees.

9. Training in grapes on head and bower system, if available.
10. Training in mango and pomegranate.
11. Notching and pruning in fig/gular.
12. Foliar application of nitrogenous fertilizer in fruit crops.
13. Manuring with farm yard manure and chemical fertilizer in fruit crops.
14. Observing declines in the orchards and study their causes.
15. Studying morphological characteristics of available varieties of fruit crops available in your locality.
16. Identification of important insects and other pests and diseases of fruit crops.
17. Preparation of pesticide solutions and their safe spraying in orchard.
18. Evaluating the taste of fruit cultivars.
 - Identification of fruit trees & varieties.
 - Identification of important diseases of fruit crops.
19. Calculating the cost of production of important local fruit crops.
20. Visit to local fruit market and Studying marketing of fruit and finding out scope of different fruit in the local market.
21. Studying the use of Gibberellin Acid and other growth promoting hormones in orchards.
22. Orchard rejuvenation – making rings, application of fertilizers, root pruning etc.

CLASS–XII
OPTIONAL–III
FLORICULTURE (765)
THEORY

Time: 3 Hours

Marks: 60

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| 1. Present scenario and scope of floriculture in global market. | 8 |
| 2. Employment avenues in floriculture sector. | 9 |
| 3. Study of outdoor room concept: public area, private area and service area. | 9 |
| 4. Different features of gardens like gate, walls, arches, pergolas, paths, roads, edges, hedges, stepping stones, sun dial, bird bath, statues, water fountain, lawns, herbaceous borders, bonsai, topiary etc. | 9 |
| 5. Concept of CAD (Computer aided designs) for landscape designs. | 4 |
| 6. Methods of establishing lawns and their management including irrigation, fertilization, mowing, insect-pest and diseases and their control. | 3 |
| 7. Production of indoor plants and their maintenance. | 2 |
| 8. Commercial cultivation of rose, chrysanthemum, gladiolus, marigold, tuberose, jasmine and crossandra. | 2 |
| 9. Protected cultivation of commercial flower crops like rose, carnation, chrysanthemum, gerbera, orchids, antirrhinum etc). | |
| 10. Flower arrangements: types and styles. | 5 |
| 11. Methods of dry flower making like air drying, embedded drying, water drying, press drying, glycerin drying, freeze drying etc. and other value added products. | 4 |
| 12. Post-harvest handling of commercial flower crops including harvesting, pre cooling, pulsing, holding, dry and wet storage, packing, packaging and transportation. | 3 |

PRACTICAL

Time: 2 Hours

Marks: 40

1. Visit to flower market during different seasons.
2. Performing intercultural operations like training, pruning in roses.
3. Performing staking, pinching, de-shooting and disbudding in carnation and chrysanthemum flower crops.
4. Maintenance of mother plants of chrysanthemum.
5. Embedded drying of important flower crops using different embedding media.
6. Studying morphological characteristics of available varieties of flower crops available in your locality.
7. Identification of important pests and diseases of lawn and avenue plants.
8. Preparation of pesticide solutions and their spraying for control of insect, pests and diseases.
9. Preparation of dry flower products like greeting cards, book marks, wall hangings and dry flower baskets.

10. Preparation of landscape designs for school and college using CAD technology.
11. Preparation of landscape designs for home gardens.
12. Preparation of landscape designs for public parks.
13. Preparation of different flower arrangements like ikebana, garland, bouquets etc.
14. Calculating the cost of production of important flower crops.
15. Packing and packaging of commercial flower crops.