1. Answer any four of the following questions: \[ 4 \times 10 = 40 \]

(a) What are green houses, mention the different types of greenhouses. Write explanatory note on controlling of greenhouse temperature and greenhouse ventilation.

(b) Discuss the importance of horticulture in national economy and role of APEDA in export of Horticultural produce.

(c) Explain the importance and scope of mushroom production in Maharashtra and mention the different types of mushrooms under cultivation and their characteristics.

(d) Define IPM. What are the concepts of IPM and mention its advantages and disadvantages.

(e) Explain the principles of plant disease control. Mention the symptoms of powdery mildew disease of mango, its causes and control measures.
SECTION - A

2. Answer the following sub-questions :

(a) (i) Discuss the impact of horticultural practices viz., varieties of crops, fertilizer application, irrigation and plant protection measures on agro-ecosystems. 10
(ii) Explain the role of bio-technology in horticulture with reference to crop improvement, Micro-propagation, bio-pesticides and bio-fertilizers. 10

(b) Write short notes on the following: 20
(i) Problematic soils of Maharashtra and their management.
(ii) Field capacity and permanent wilting point.
(iii) Horticultural uses of hormones.
(iv) Water conservation methods.

3. Answer the following sub-questions :

(a) (i) Define photosynthesis. Explain the factors affecting photosynthesis. 10
(ii) Define environmental pollution. Explain the effects of environmental pollution on crop and human beings. 10

(b) (i) Define soil. Explain the physical and chemical properties of soils. 10
(ii) Write explanatory note on role and deficiency symptoms of NPK and Ca in plants. 10

SECTION - B

4. Answer the following sub-questions :

(a) (i) Define Orchard. What are the points to be considered while establishment of an orchard? 10
(ii) Define unfruitfulness. Explain the measures to overcome unfruitfulness in fruit crops. 10

(b) Write short notes on: 20
(i) Advantages of micro-irrigation in horticulture.
(ii) Sodculture and clean cultivation.
(iii) Advantages of mulching.
(iv) Inter-crops and cover crops.
5. Answer the following sub-questions:

(a) (i) Define propagation. Mention the advantages and dis-advantages of vegetative propagation in horticulture crops.

(ii) Explain the physiology of rooting in cuttage and formation of graft union in grafting.

(b) (i) Explain the production technology of banana with reference to selection of varieties, Suckers, Planting density, manuring and irrigation in Maharashtra.

(ii) Write short notes on:

(a) Spongy tissue disorder in mango.

(b) Causes of citrus decline.

SECTION - C

6. Answer the following sub-questions:

(a) (i) Classify the vegetables based on the parts used and season with examples.

(ii) Define cropping system. Explain the different cropping systems adopted in vegetable crops.

(b) Write explanatory note on:

(i) Role of vegetables in human nutrition.

(ii) Importance of crop rotation in vegetable cultivation.

(iii) Exploitation of hybrid vigour in crop improvement.

(iv) Truck gardening in vegetables.

7. Answer the following sub-questions:

(a) (i) Define seed dormancy. Mention the different types of seed dormancy seeds and how to overcome seed coat dormancy?

(ii) Explain the production technology of tomato with reference to nursery raising, planting, manuring, irrigation and harvesting of fruits.

(b) (i) Explain the production technology of ginger with reference to selection of varieties, seed rhizomes, planting, manuring and plant protection.

(ii) Explain the production technology of Alovera with reference to planting, manuring, irrigation, harvesting and medicinal importance.

P.T.O.
SECTION - D

8. Answer the following sub-questions:
   (a) (i) Explain the different types of ornamental gardens and their features. 10
   (ii) What is meant by protected cultivation? Mention the advantages and dis-advantages of protected cultivation of horticultural crops. 10
   (b) (i) What are the principles of preservation of fruits and vegetables? Explain the different Methods of preservation. 10
   (ii) Write short notes on Bonsai culture and Ikebana. 10

9. Answer the following sub-questions:
   (a) (i) Explain the production technology of tuberose with reference to selection of varieties, planting, manuring, irrigation, harvesting and yield. 10
   (ii) Explain the different methods of extraction of essential oils from aromatic plants. 10
   (b) (i) Give five examples each of the following:
           (a) Flowering shrubs.
           (b) Ornamental creepers.
           (c) Flowering annuals.
           (d) Suitable indoor plants.
   (ii) Explain the importance and scope of agro-forestry in Maharashtra state. 10