

**HORTICULTURE (Optional)**

**Time : 3 hours**

**Maximum Marks : 200**

**Note :**

- (i) Answers must be written in English.
- (ii) Question No. 1 is compulsory. Of the remaining questions, attempt any Four selecting one question from each section.
- (iii) Figure to the RIGHT indicates marks of the respective question.
- (iv) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
- (v) Candidates should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise they will be penalised.

1. Answer any four of the following questions : 4x10=40
- (a) Name the different types of green houses, mention their types of orientation, designs and glazing materials. List the advantages and constraints of high tech green houses.
  - (b) Explain in detail principles of farm management, farm records and farm efficiency measures.
  - (c) Write the properties of plant viruses and mycoplasma and provide information about symptoms and control measures for yellow vein mosaic of Okra (*Abelmoschus esculentus*)
  - (d) Write the nature of damage, symptoms and management practices for leaf hopper, fruitflies and stone weevil of mango.
  - (e) Narrate the causal organisms, symptoms and control measures for Panama wilt and Bunchy top of Banana.

**SECTION - A**

2. Answer the following sub-questions :
- (a) (i) List out the different irrigation methods followed in Horticulture crops and differentiate between drip and sprinkler irrigation. 10
  - (ii) Define pollution, mention types of pollution and explain their deleterious effect on Horticulture crops. 10
  - (b) Write short notes on the following : 20
    - (i) Narrate the role and deficiency symptoms of Ca, Mg, Zn, Sulphur and Boron.
    - (ii) Discuss about soil and water conservation methods in Horticulture crops.

3. Answer the following sub-questions :
- (a) (i) Differentiate between  $C_3$ ,  $C_4$  and CAM plants. 10
  - (ii) Mention types of biofertilizers and their significance. 10
  - (b) (i) Define soil. Explain the physical and chemical properties of soils. 10
  - (ii) Brief about field capacity, moisture holding capacity and permanent wilting point. 10

#### SECTION - B

4. Answer the following sub-questions :
- (a) (i) Explain in detail establishment of fruit orchard. 10
  - (ii) Mention the different types of orchard layout systems and explain about square and hexagonal systems. 10
  - (b) Write short notes on : 20
    - (i) 'T' mosquito problem in cashew.
    - (ii) High density planting
    - (iii) Multiplier cropping
    - (iv) Pre-sucker treatment of Banana
5. Answer the following sub-questions :
- (a) (i) Mention the different propagation methods followed in Horticulture crops with at least one example for each. 10
  - (ii) Explain about graft incompatibility and their causes. 10
  - (b) (i) Explain the detailed production technology of Sapota with reference to varieties, spacing, manuring, irrigation, harvesting and yield in Maharashtra. 10
  - (ii) Write short notes on : 10
    - (A) Alternate bearing in mango
    - (B) Katte disease of Cardamom

#### SECTION - C

6. Answer the following sub-questions :
- (a) (i) Mention different types of vegetable gardens and explain about Floating and Kitchen gardens. 10
  - (ii) Write the importance of vegetables in human nutrition. 10
  - (b) Write explanatory note on : 20
    - (i) Nursery preparation for cole crops
    - (ii) Importance of crop rotation in vegetable production.
    - (iii) Flow-chart for preparation of tomato ketchup
    - (iv) Importance of green manuring

7. Answer the following sub-questions :

- (a) (i) Name different types of dormancy and discuss about 2, 3, 5 Triphenyl Tetrazoleum chloride test (TTC). 10
- (ii) Write the production technology of brinjal with reference to nursery preparation, spacing, planting, manuring, irrigation, weeding, harvesting and yield/ha. 10
- (b) (i) Explain production technology of beans with reference to varieties, inputs, sowing, manuring, irrigation and yield. 10
- (ii) Explain the production technology of patchouli with reference to selection of planting material, varieties, spacing, manuring, irrigation, weeding and harvesting. 10

#### SECTION - D

8. Answer the following sub-questions :

- (a) (i) Write the different methods of establishment of lawn 10
- (ii) List out different garden features and explain about Rockery. 10
- (b) (i) Write in detail about production technology of roses with reference to important varieties, inputs/plant, disbudding, desuckering, harvesting and yield per hectare 10
- (ii) Write short notes on Floral clock and Bird bath. 10

9. Answer the following sub-questions :

- (a) (i) Explain the production technology of Gladiolus with reference to varieties, planting-materials, spacing, manuring, irrigation, harvesting and yield. 10
- (ii) Write about pruning, pulsing and preservatives for Queen of flower. 10
- (b) (i) Give five examples for each of the following : 10
- (A) Bonsai
- (B) Flowering climbers
- (C) Flowering shrubs
- (D) Ornamental palms
- (ii) Explain the importance and scope of Floriculture industry in Maharashtra State. 10

