

SUBJECT: HORTICULTURE SCIENCE PAPER – I

Time: 3 (Three) hours

Full Marks: 100

(Group - A is compulsory. Attempt any FOUR questions from Group - B).

GROUP - A
(Compulsory group)

Q.No.1. Attempt any 10(Ten) from the following:

10x2 = 20

- a. Prospects of grafting technique in vegetable production.
- b. Briefly discuss about production problems of banana.
- c. Write in brief about citrus decline.
- d. Describe the tissue culture method for virus free plants.
- e. Grading of seedlings.
- f. Production technology of Gladiolus.
- g. Advantage of root trainer in seedlings production.
- h. Vernalization
- i. What is isolation distance? Describe its importance in production of genetically pure seed.
- j. Enlist any ten important wild medicinal plants of your locality and describe their application and scope for domestication and commercialization.
- k. Describe the type of cell division takes place in vegetative propagation.
- l. Discuss the nutritional importance of Vegetables in human diet.

GROUP - B
(Attempt any four.)

Q.No.2. Attempt any 4(Four) from the following:

4x5=20

- a. What is organic farming? Briefly explain its scope in India in the context of IFOAM objectives and explain the components of organic farming in reference to Horticultural crops.
- b. What do you mean by precision farming? Explain the production technology of Broccoli and Cucumber under precision farming.
- c. Enumerate the causes and remedies of cracking in litchi fruit.
- d. What are genetically modified crops? What are the bio safety related issues in genetically modified crops?
- e. What is under fertilization in the transplant beds or in polypots? Point out different fertilizers dosages for transplant beds, In container soil and Top dressing.
- f. Write the methods involved in 'bare-root' planting stock with its advantages in plantation programme.

- g. Describe the genetics of sex expression in papaya.
- h. What are dioecious cucurbits? Write their mode of propagation.

Q.No. 3 Attempt any 4(Four) from the following:

5x4=20

- a. Discuss the importance and scope of low cost polyhouse in vegetable production with special reference to Arunachal Pradesh.
- b. Discuss the scope and importance of growing onion in NEH region.
- c. Discuss the improved production technology of Pineapple.
- d. What are the challenges and opportunities for Horticultural Biotechnology?
- e. Explain the environmental conditions for 'rooting' in cuttings of vegetative propagation.
- f. Give the significance of potting mixture and suggest any rapid and economical methods of compost preparation.
- g. Discuss the improved production technology of *Kharif* chilli with special reference to Arunachal Pradesh.

Q.No.4. Attempt any 4(Four) from the following:

4x5 = 20

- a. What is soil solarisation? How it is useful in raising the healthy vegetable seedling?
- b. Describe the improved production technology of Apple with special reference to Arunachal Pradesh
- c. Explain "Non Biological factors while selecting the nursery site.
- d. Discuss the improved production technology of marigold.
- e. Discuss in detail about Cyclic photophosphorylation.

Q.No.5. Attempt any 4(Four) from the following:

4x5=20

- a. What do you mean by maturity indices? Give maturity indices for tomato, muskmelon, watermelon, baby corn, peas and black pepper including the recent advances made for assessment of maturity.
- b. Describe the Marker-assisted backcross breeding for rapid introgression.
- c. What is carbon trading? How India can reap the benefits out of it?
- d. What is hybrid? Explain the genetical basis of heterosis.
- e. What is mutation breeding? Explain the limitations and achievement of mutation breeding

Q. No.6. What is Autopolyploidy? Explain the role of Autopolypoidy in Horticultural crops improvement.

= 20

Q.No.7. What is *Bt* brinjal? Describe its prospects and concerns in respect of controlling shoot and fruit borer in brinjal.

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Q.No.8. Explain in detail about improved production technology of Gladiolus.

= 20

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