

ARUNACHAL PRADESH PUBLIC SERVICE COMMISSION ITANAGAR
SUBJECT: HORTICULTURE

Full Marks: 200
Time: 3hours

Note: Question No.1 is compulsory and any four from the remaining seven questions. All question carry equal marks.

Q.No.1. Attempt any 10(ten)

10x4 = 40

- A. Describe the term Tuberization with suitable examples.
- B. Discuss the application of mutation breeding in crop improvement.
- C. Write in brief about water hardness
- D. Describe the role of tissue culture technique in production of disease free plants.
- E. Define the role of PFA and FPO in food processing?
- F. What is herbaceous border? Describe with suitable examples.
- G. What are stionic effects? Describe the beneficial influence of stionic effect in propagation of fruit crops.
- H. Describe the physiological disorders of vegetable crops.
- I. What is isolation distance? Describe its importance in production of genetically pure seed.
- J. Enlist any ten important medicinal plants of your locality and enumerate their applications and scope for commercialization.
- K. Describe the type of cell division takes place in vegetative propagation of plants.
- L. What do you mean by dormancy in seed? Describe the different types of dormancy with suitable examples and suggest the means to break the dormancy.

Q.No.2. Attempt any 8 (eight)

8x5=40

- A. What is organic farming? Briefly explain its scope in India in the context of IFOAM objectives and describe the various components of organic farming.
- B. What do you mean by precision farming? Write the cultivation of broccoli and capsicum following the practice of precision farming.
- C. Discuss the various causes of fruit cracking and suggest their remedial measures.
- D. What are genetically modified crops? What are the bio safety issues related with genetically modified crops?
- E. Describe the IPM practice for Greenhouse grown crops.
- F. Explain the role of plant growth substances in vegetative propagation of fruit plants.
- G. Describe the various practices of weed management in orchards. Give the list of herbicides suitable for application in orchards.
- H. Explain about the Sri Lankan method of rapid propagation of blackpepper.
- I. Describe the genetics of sex expression in papaya.
- J. Write causes and remedies of citrus decline.

Q.3 Attempt any 5(five)

5x8=40

- A. Describe the various structures for transplant production under controlled conditions.
- B. What is blight? Describe the occurrence, symptoms, causal agent, etiology, mode of survival, favourable conditions and integrated disease management of late blight of potato.
- C. Define heterosis. List its characteristic features and discuss its applications and achievements in crop improvement.
- D. Define the food preservation. Describe in detail the various methods of preservation.
- E. What is Inbreeding depression? Explain with suitable examples.
- F. Describe the role of vegetables in nutritional security of India

Q.No.4. Attempt any 4 (four)

4x10 = 40

- A. What is soil solarisation? How is it useful in raising the healthy seedlings of vegetables?
- B. Describe in detail about the shifting cultivation. Write its merits and demerits.
- C. Describe in detail the cultivation practices of *Rauwolfia serpentina*.
- D. Write different physical methods of breaking seed dormancy in forest tree species with suitable examples
- E. What do you mean by irradiation of fruits and vegetables? Describe its role in food processing.

Q.No.5. Attempt any 2(two)

2x20=40

- A. What do you mean by maturity indices? Give maturity indices for tomato, muskmelon, watermelon, cauliflower, 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 can India reap the benefits out of it?

Q. No.6. Describe the importance of bamboo in industrial uses and also discuss the bamboo based cottage industries. **=40**

Q.No.7. What is Bt brinjal? Describe its prospects and concerns in respect of controlling shoot and fruit borer in brinjal. **=40**

Q.No.8. Define food microbiology. Give a brief account about food and water borne pathogens. **=40**