

6. (a) Describe the process of bulk production of *Trichoderma* sp. and its utility in control of various plant diseases.
- (b) (i) Explain the various steps involved in the development of new apple orchard.
- (ii) Explain the package of practices in saffron cultivation in Kashmir. 45

7. (a) Answer any **five** of the following :
- (i) BPH and its control in Paddy.
- (ii) What is virus and how they replicate ?
- (iii) Saphrophytes and their role in farming.
- (iv) Parasitoids and their utility.
- (v) Chromosomal aberrations and consequences.
- (vi) Gene interaction.
- (vii) Great Bengal famine.
- (b) Give the causal agent of following pests/diseases and their control measure (any **five**) :
- (i) Rust disease of coffee (ii) Apple Scab
- (iii) Downy mildew of maize (iv) Rhizome rot of ginger
- (v) Late blight of potato (vi) Red leaf of cotton
- (vii) Citrus dieback (viii) Boll Shedding in cotton. 45

8. Write short notes on any **five** of the following :
- (i) Biological control of pests and diseases.
- (ii) Plant quarantine and its importance.
- (iii) Plant growth hormones and their utility.
- (iv) Transpiration is inevitable for plant growth.
- (v) Seed dormancy and how to overcome ?
- (vi) Boom and bust cycle in plant diseases.
- (vii) Cross protection in plant disease management. 45

Total No. of Printed Pages : 4

Roll No. ....

1(CCE.M)2

Agriculture—II

(01)

Time : Three Hours]

[Maximum Marks : 300

**INSTRUCTIONS**

- (i) Answers must be written in English.
- (ii) The number of marks carried by each question is indicated at the end of the question.
- (iii) The answer to each question or part thereof should begin on a fresh page.
- (iv) Your answer should be precise and coherent.
- (v) The part/parts of the same question must be answered together and should not be interposed between answers to other questions.
- (vi) Candidates should attempt question nos. **1** and **4** which are compulsory and any **four** more out of the remaining questions.
- (vii) If you encounter any typographical error, please read it as it appears in the text-book.
- (viii) Candidates are in their own interest advised to go through the General Instructions on the back side of the title page of the Answer Script for strict adherence.
- (ix) No continuation sheets shall be provided to any candidate under any circumstances.
- (x) Candidates shall put a cross (×) on blank pages of Answer Script.

- (xi) No blank page be left in between answer to various questions.
- (xii) No programmable Calculator is allowed.
- (xiii) No stencil (with different markings) is allowed.
1. (a) Define any **ten** of the following :
- (i) Marker Assisted Breeding
  - (ii) Protein Synthesis
  - (iii) Anticodon
  - (iv) Mutation
  - (v) Acclimatization
  - (vi) Transduction
  - (vii) Genotype
  - (viii) Horizontal resistance
  - (ix) Transpiration
  - (x) Systemic fungicide
  - (xi) Sex pheromones
  - (xii) Vectors.
- (b) Define transgenic plants. What is the purpose of producing them ? Give successful transgenic plants with beneficial traits. 60
2. (a) Differentiate between the following (any **five**) :
- (i) Cybrid and hybrid
  - (ii) Monohybrid and dihybrid
  - (iii) Dominance and epistasis
  - (iv) Male sterility and self in-compatibility
  - (v) Contact pesticide and systemic pesticide
  - (vi) Chemical control and biological control of pests
  - (vii) Pest tolerance and Pest resistance.
- (b) Explain in detail the principles and practices of integrated pest management. 45

3. (a) Describe any **five** of the following :
- (i) White ants
  - (ii) Sex pheromones
  - (iii) Bt cotton
  - (iv) Heterosis
  - (v) Incomplete dominance
  - (vi) Brown Plant Hopper
  - (vii) Hybridization.
- (b) What is golden rice and in what way it is different from other rice ? Similar efforts in other crops with successful case studies may be explained. 45
4. (a) Give scientific reasons for any **five** of the following :
- (i) Use of sex pheromones is eco-friendly pest control.
  - (ii) Bt cotton offers eco-friendly cotton cultivation opportunities.
  - (iii) Balance of life in nature exists in insects.
  - (iv) Cultivation of Land races is beneficial in the long run.
  - (v) Boardux mixture use is allowed under organic farming.
  - (vi) Scientific nutrient management has a role in pest and disease management.
  - (vii) Seed production needs proper isolation distance management.
- (b) Enumerate etiology, characteristic symptom, disease cycle and method of management of Rice blast or Apple scab or Potato late blight. 60
5. (a) Explain following terms (any **five**) :
- (i) Photoperiodism
  - (ii) C3, C4 and CAM plants
  - (iii) Turgorpotential
  - (iv) Foundation seeds
  - (v) Approach grafting
  - (vi) Fertigation
  - (vii) Microbial control of pests.
- (b) Horticultural crops provide great opportunity for diversifying crops and income under adverse farming conditions also in India. Explain with any case studies. 45