



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 ?
- (ii) Apple Scab
- (iv) Rhizome rot of ginger (vi) Red leaf of cotton (viii) Boll Shedding in cotton. 45
- (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
- (iii) Downy mildew of maize
- (v) Late blight of potato
- (vii) Citrus dieback
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.

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- (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

(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.

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- (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.

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