

(B) Explain in detail the principles and practices of biological pest control and some success stories in India. 20

7. (A) Write short notes on any **five** of the following :

- (i) Biochemical defense mechanism in plants against fungal infection
- (ii) Bengal famine
- (iii) Cryptogram and its significance in virus taxonomy
- (iv) Abiotic causes of plant diseases
- (v) K-nutrition in plants and its importance
- (vi) Dr. M.S. Swaminathan.
- (vii) Dr. Norman Borlaug. 5×5=25

(B) (i) Explain symptomatology for downy mildew of grape and management schedule.  
(ii) Major seed borne diseases and their management. 20

8. (A) Define any **ten** of the following :

- (i) Anatomy
- (ii) Angiosperms
- (iii) Field capacity of soil moisture
- (iv) Plasmolysis
- (v) Cytokinin
- (vi) Hibernation
- (vii) Auxins
- (viii) Mitosis
- (ix) Pleiotropy
- (x) Systemic insecticide
- (xi) Antidote
- (xii) Fumigant
- (xiii) Penicillin. 10×2=20

(B) (i) Define post harvest pathology and explain its significance with suitable example. 15  
(ii) What is golden rice and in what way it is different from normal rice ? 5  
(iii) What are farmer's varieties ? What is its significance ? 5

Roll No. ....

Total No. of Pages : 4

**1(CCE.M)3**

**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 numbers **1** and **2** 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 (x) on blank pages of Answer Script.
- (xi) No blank page should be left in between answers to various questions.
- (xii) No programmable Calculator is allowed.
- (xiii) No stencil (with different markings) is allowed.

1. (A) Answer any **five** of the following :
- (i) Leaf nutrient analysis in horticultural crops
  - (ii) Spongy tissue in mango fruits
  - (iii) Alternative bearing in mango
  - (iv) Monopodial and sympodial branching in cotton
  - (v) Solarization of seed bed
  - (vi) Bt Cotton
  - (vii) Increasing seed setting in sunflower. 6×5=30
- (B) (i) Describe the principles and practices of multi-storeyed cropping in Horticultural crops with suitable examples.
- (ii) What is cross protection and its significance ? 15×2=30
2. (A) Differentiate between any **five** of the following :
- (i) Test Cross v/s Poly Cross
  - (ii) DNA and RNA molecules
  - (iii) Chemical Pesticide v/s Bio Pesticide
  - (iv) Male Sterility v/s Self incompatibility
  - (v) Trisomics v/s Monosomics
  - (vi) Replication v/s Recombination
  - (vii) Phototropism v/s Photoperiodism. 6×5=30
- (B) Answer any **two** of the following :
- (i) Etiology, diagnostic symptoms, disease cycle epidemiology and management of apple scab.
  - (ii) Role of cultural practices as a component of Integrated Pest management.
  - (iii) Procedure for transferring disease resistance from donor parent to recurrent parent. 15×2=30
3. (A) Answer any **five** of the following :
- (i) Chromosomal aberrations and their consequences.
  - (ii) Gene interaction with examples.
  - (iii) Causes for insect outbreak.

- (iv) Sterile insect technique in pest management.
  - (v) Insecticide resistance.
  - (vi) Photoperiodism.
  - (vii) Transpiration. 5×5=25
- (B) Principles and practices of integrated pest management with suitable case studies/success stories. 20
4. (A) Answer any **five** of the following :
- (i) Pure line
  - (ii) Hybrids
  - (iii) Turgor pressure
  - (iv) Photorespiration
  - (v) Pruning in Horticulture crops
  - (vi) Bonsai plants
  - (vii) Rhizotrons. 5×5=25
- (B) Describe in detail the process of photosynthesis in C-3 plants. 20
5. (A) Write short notes on any **five** :
- (i) Growth regulating hormones
  - (ii) Fertigation
  - (iii) Bordeaux mixture
  - (iv) Plant quarantine
  - (v) Rice-Blast disease
  - (vi) Locusts
  - (vii) Seedless grapes. 5×5=25
- (B) Discuss the role and techniques of biotechnology in creating novel variability for plant breeding. 20
6. (A) Answer any **five** of the following :
- (i) What is male sterility and its types ?
  - (ii) Molecular markers.
  - (iii) Artificial seeds.
  - (iv) Bio-chars and their use in agriculture.
  - (v) Seed dormancy.
  - (vi) CGIAR Institutes.
  - (vii) Release of insects having dominant lethal. 5×5=25