

This question paper contains 4 printed pages]

Code No. : 01(I)

Roll No.

0(CCEM)9

AGRICULTURE

Paper : I

Time Allowed : 3 hours]

[Maximum Marks : 300

Note : (i) *Answers must be written in English.*

(ii) *Number of marks carried by each question are indicated at the end of the question.*

(iii) *Part/Parts of the same question must be answered together and should not be interposed between answers of other questions.*

(iv) *Each questions or part thereof should begin on a fresh page.*

(v) *Your answers should be precise and coherent.*

(vi) *Attempt five questions in all, selecting at least two from each Section.*

SECTION – A

1. (a) Discuss in detail the various approaches in crop improvement, generation of genetic variability as well as introgression of beneficial genes in crops.

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- (b) What are the techniques of maintenance of soil health ? What are macro and micronutrients ?
- (c) Define pests. What are key pests and endemic pests ? How does one measure pest damage in crops ? What are the ingredients of integrated pest management ? $20 \times 3 = 60$

2. Write brief critical notes in about 200 words each on any *four* of the following :

- (a) Soil carbon and soil fertility
- (b) Salinity and sodicity
- (c) Silvicultural systems
- (d) Current transfer of technology system
- (e) Frontline demonstrations
- (f) Fertilizer and manure $15 \times 4 = 60$

3. Distinguish between the following :

- (a) Soil degradation and soil erosion
- (b) Informatics and information technology
- (c) C4 and C3 plant
- (d) Pesticide residues and pesticide dissipation
- (e) Strip cropping and trap cropping. $12 \times 5 = 60$

(2)

4. Describe the mechanism of nutrient absorption in crops. What factors influence absorption of nutrients and their assimilations in crop plants? 60 × 1

SECTION – B

5. What are the recognized quality assurance practices of tissue culture-generated planting materials of horticultural crops? What is seed certification standard? What are the various links in the seed chain? How does it ensure quality *vis-a-vis* satiate quantity? 60 × 1
6. Differentiate any *five* of the following :
- (a) strip cropping and intercropping
 - (b) biological control and legal control of crop pests
 - (c) economic threshold and economic loss
 - (d) carrying capacity and crop productivity
 - (e) soil solarisation and soil sterilization
 - (f) dust mulching and green mulching
 - (g) dry sowing and normal sowing
 - (h) soil profile and crop profile 12 × 5 = 60
7. What is SRI type of rice cultivation? Which districts can it be advocated in J & K State? What are its merits and demerits? 60 × 1

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8. Write short notes on any *five* of the following :

- (a) Biopesticides in agriculture
- (b) Biological soil amelioration
- (c) Soil organic carbon and crop nutrition
- (d) Econometrics of crop production
- (e) Natural resource use efficiency
- (f) Information and Communication Technology in agricultural extension
- (g) Crop cutting experiment - need and purpose
- (h) Crop loss assessment techniques 12 × 5 = 60