

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.  $12 \times 5 = 60$

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

**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 ?  $60 \times 1$

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  $12 \times 5 = 60$

7. What is SRI type of rice cultivation ? Which districts can it be advocated in J & K State ? What are its merits and demerits ?  $60 \times 1$

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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