

**CC/M/EXAM.**  
**2020**  
**AGRICULTURE**  
**Paper—II**

Time : 3 hours ]

[ Full Marks : 250

**Note :** Question Nos. **1** and **5** are compulsory and out of the remaining, *any three* are to be attempted choosing at least ONE question from each Section. The number of marks carried by a question/part is indicated against it.

SECTION—A

1. Answer *any five* of the following questions in about 150 words each : 10×5=50
- (a) Discuss on  $C_3$ ,  $C_4$  and CAM mechanisms citing specific examples of crops in each.
  - (b) State the specific advantages of protected cultivation of horticultural crops.
  - (c) Discuss the role of mutation in crop improvement.
  - (d) State the functions of various cell components.
  - (e) "High-tech horticulture is of prime importance to sustain productivity and economic stability." Justify the statement.
  - (f) Enumerate the effects of water stress in plants.
  - (g) Discuss the necessity as well as the measures of plant quarantine.
2. Answer the following questions :
- (a) Prepare a list of commercial flower crops indicating common names, botanical families, commercial cultivars and mode of propagation. 15
  - (b) Define 'Landscaping'. Discuss in brief on the principles of landscape design. 15

- (c) What are cole crops? Name the commercial cultivars of the cole crops. Briefly discuss the cultivation of the cole crops indicating the nursery management, transplanting, plant spacing, intercultural operations, crop duration and harvesting. 2+6+12 = 20

3. Answer the following questions :

- (a) Discuss briefly the necessity of Seed Testing and Seed Certification. 15
- (b) Discuss briefly the importance of seed industry in agriculture. 15
- (c) "The various categories of seeds—nucleus, breeder, foundation and certified need special care to produce." Justify the statement. 20

4. Answer the following questions :

- (a) What are the prime objectives of breeding crops? Discuss the various methods of breeding crops. 5+15 = 20
- (b) Write brief notes on (i) Somatic hybridization and (ii) Genetically modified crops. 15
- (c) What do you understand by Intellectual Property Rights (IPR)? Discuss briefly on IPR in relation to agriculture. 15

## SECTION—B

5. Answer *any five* of the following questions :

- (a) Define the following : 2½×4=10
- (i) DNA fingerprinting
- (ii) Polyploidy
- (iii) Heritability
- (iv) Heterosis
- (b) Prepare a list of storage pests of crops and state the measures to control them. 10
- (c) State the biotic factors causing citrus decline. 10

- (d) Write in brief on the management of the following diseases : 2½×4=10
- (i) Banana bunchy top virus
  - (ii) Sheath blight of rice
  - (iii) Papaya ringspot virus
  - (iv) Late blight of potato
- (e) Enumerate the major constraints in the processing of foods. 10
- (f) State necessity of food laws indicating the main objectives of enacting food laws. 10
- (g) Write brief notes on : 2½×4=10
- (i) Plant pigments
  - (ii) Transpiration
  - (iii) Plant enzymes
  - (iv) Seed dormancy

**6. Answer the following questions:**

- (a) Define plant growth substances. What are the various methods of application of plant growth substances? 5+10=15
- (b) State the various classes of plant growth substances citing examples in each class. 15
- (c) Discuss in brief on the practical applications of Plant Growth Substances in horticultural crops. 20

**7. Answer the following questions :**

- (a) Prepare a list of the common medicinal plants indicating their common names, botanical families and medicinal use. 15
- (b) State the various aromatic plants grown in India indicating their methods of propagation. 15
- (c) Prepare a list of the major plantation crops grown in India indicating their common names, scientific names, botanical families, original homes and methods of propagation. 20

**8.** Answer the following questions :

- (a) Briefly, write a note on banana cultivation with special reference to botany, commercial cultivars, mode of propagation, plant spacing and planting, interculture operations, crop duration and harvesting. 20
- (b) What is 'papain'? How is papain extracted from fruits? State the common uses of papain. 15
- (c) What is 'mango malformation'? State the measures to combat mango malformation. 15

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