

SEAL

R/A/DO/E EXAM.
2021
AGRICULTURE SCIENCE
PAPER—I

300228

Time : 3 hours]

[Full Marks : 100

Notes : (i) Answer the questions as directed.

(ii) The figures in the right-hand margin indicate full marks for the questions.

Question No. 1 is compulsory and answer *any five* from the rest :

1. Write short notes on the following (*any five*) :

5×5=25

- (a) Zero tillage
- (b) Mixed cropping system
- (c) Mulching in horticultural crops
- (d) Organic farming
- (e) Greenhouse effect
- (f) Vernalization
- (g) Hybridization
- (h) Apomixis

2. What is integrated farming system? What are the components of integrated farming system? Elaborate the benefits of integrated farming system. 2+5+8=15
3. Write in detail about the production technology of rice with reference to selection of seeds, seed rate, methods of raising of seedling, transplanting, fertilizer application and water management. 15
4. How will you classify the weeds based on life span? What are the harmful and beneficial effects of the weeds? Discuss the integrated weed management practices. 4+6+5=15

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5. What is problematic soil? How soil is converted to problematic soils? Explain different methods of reclamation of saline-alkali soils. 2+5+8=15

6. (a) Classify the vegetables on the basis of parts used with examples of each group. 7
 (b) Write the production technology of tapioca or colocasia in Arunachal Pradesh with reference to propagation, planting method, intercultural operations and harvesting. 8

7. What are the major causes of low productivity of horticultural crops in Arunachal Pradesh? Suggest suitable strategies for increasing the production and productivity of horticultural crops in the State. 7+8=15

8. What are the major components of cell structure? Briefly describe their functions. 3+12=15

9. Define mutation. Write its classification and role in crop improvement. Give examples of different mutagens used for mutation. 1+4+6+4=15

10. Differentiate between the following (*any five*) : 3×5=15
 - (a) Catch crop and Trap crop
 - (b) Rainfed farming and Irrigated farming
 - (c) C₃ plants and C₄ plants
 - (d) Bio-fertilizer and Chemical fertilizer
 - (e) Nitrification and Denitrification
 - (f) Training and Pruning in fruit crops
 - (g) Grafting and Budding