2024

5th Semester Examination

BOTANY (Honours)

Paper : DSE 2-T

[CBCS]

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Full Marks : 40 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

[Plant Breeding]

Group - A

Answer any ***five*** of the following questions : 2×5=10

1. Is blood type an example of polygenic inheritance?
2. What is aneuploidy and euploidy?
3. Name the chemicals used to induce polyploidy.
4. Write down two advantages of back cross.
5. What is inbreeding depression?
6. What is polygenic inheritance? Give examples.
7. Define mutation breeding.

P.T.O.

8. Mention two roles of biotechnology in crop improvement.

Group - B

Answer any ***four*** of the following questions : 5×4=20

9. Define heterosis. Describe the overdominance hypothesis to explain hybrid vigour. 2+3

10. Mention the differences between monogenic and polygenic inheritance. 5

11. Explain intergeneric hybridization with examples. 2+3

12. Write the objectives of plant breeding. 5

13. Discuss the difference between mass selection and pure line selection. 5

14. Write short notes on the centre of origin of crop plants and domestication. 5

Group - C

Answer any ***one*** of the following questions : 10×1=10

15. Define quantitative inheritance. Explain the quantitative inheritance of Kernel colour in wheat. 4+6

16. Discuss the hybridization techniques for crop improvement. Write the merits and demerits of pedigree methods. 6+4

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OR

[Stress Biology]

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Group - A

Answer any ***five*** of the following questions : 2×5=10

1. What do you mean by salinity stress?
2. What is hypersensitive reaction?
3. Write the physiological functions of jasmonates.
4. What do you mean by phospholipid signaling?
5. What is osmotic potential?
6. What is reactive oxygen species?
7. What do you mean by stress and stress physiology?
8. Write two physiological changes in plant facing the condition of water stress.

Group - B

Answer any ***four*** of the following questions : 5×4=20

9. What is the mechanism of plant stress? What is the importance of plant stress? 2½+2½
10. Discuss biotic and abiotic stress in plants. 5
11. Discuss different ways of calcium modulated in plants. 5
12. What are ROS? How are ROS scavenged? 2+3

P.T.O.

13. What are PR proteins? How are PR proteins produced? How many families of PR proteins are there? 2+2+1

14. What is osmotic adjustment in plants? Discuss osmotic adjustment that protect plants against environmental stress. 2+3

Group - C

Answer any ***one*** of the following questions : 10×1=10

15. Discuss different adaptation mechanism in plants that protect plants against environmental stress. 10

16. Write short notes on high light stress and temperature stress. 5+5

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