

CSM : 16

BOTANY PAPER - II

Time Allowed : 3 hours

Full Marks : 100

Marks for each question is indicated against it.

Attempt any 5 (five) questions taking not more than 3 (three) questions from each Part.

PART - A

1. Describe the regulation of gene expression in *eukaryotes*. (20)
2. (a) Give a detailed account of chromatin organisation and packaging to genome in *eukaryotes*. (10)
(b) Write an essay on numerical variations in chromosomes and their significance. (10)
3. What is ecological succession? Differentiate between primary and secondary succession. Describe different stages of succession in a hydrosere. (2+3+15=20)
4. Write short notes on the following: (4×5=20)
 - (a) Climate change
 - (b) Signal transduction
 - (c) Invasive plant species
 - (d) Indicator species

PART - B

5. What is mass selection? How does it differ from pureline selection? Describe the process of mass selection in self-pollinated crops. (2+2+16=20)
6. (a) Describe electron transport in chloroplast of higher plants. (10)
(b) Differentiate C3, C4 and CAM plants. (10)
7. (a) Explain the mechanism of photorespiration and its significance. (10)
(b) Describe the β -oxidation of fatty acids. (10)
8. Write notes on the following: (4×5=20)
 - (a) Nitrogenise
 - (b) Law of probability
 - (c) Test of significance
 - (d) Mechanism of phloem loading