

Code - 03
BOTANY
Time : 3 Hours
Maximum Marks : 150

Note : Attempt Five questions in all. All questions carry equal marks. Q.No.1 is compulsory. Answer two questions from Part I and two questions from Part II. The parts of the same question must be answered together and must not be interposed between answers to other questions.

1. Write significant features on **any four** of the following: (4x7.5=30)
- (a) Economic importance of mosses
 - (b) Incompatibility in plants
 - (c) Phytochrome
 - (d) Anther
 - (e) Endemic plants of India
 - (f) Recombinant DNA technology

PART - I

2. (a) Write about the role of bacteria in agriculture and medicine. (10)
(b) What are viruses? What role do they play in plants? (10)
(c) Are algae and fungi plants? Give a general account of lichens. (10)
3. (a) Why is Cycas called a living fossil ?
Draw labelled diagrams only of a Cycas (10)
(i) Megasporophyll (ii) Microsporophyll.
- (b) Describe with the help of diagrams secondary growth in roots. (10)
- (c) What is heterospory ? Describe its significance in Selaginella (10)
4. (a) Write with help of diagrams the development of male gamete in angiosperms. (10)
- (b) Differentiate between floral characteristics of gramineae and Cruciferae. (10)

(c) Write the botanical name, family and its economic importance of the following:

- (i) tomato (10)
- (ii) cinchona
- (iii) cannabis
- (iv) cardamom
- (v) mango

PART - II

5.(a) Differentiate between prokaryotic and eukaryotic cells. (10)

(b) Discuss sex determination in lower and higher plants (10)

(c) What is the modern concept about gene structure and function. (10)

6.(a) Explain the importance of apomixis in plant breeding . (10)

(b) Describe briefly the role of light in carbon fixation in C_3 , C_4 and CAM plants. (10)

(c) Give a brief account of ecological pyramids and energy flow. (10)

7.(a) What are transgenic crop plants? What is their role in agriculture. (10)

(b) Differentiate between aerobic and anaerobic respiration. (10)

(c) Write a short note on the role of biostatistics in plant breeding. (10)