# CSM – 14/21

## Botany

## Paper – I

*Time : 3 hours*

*Full Marks : 300*

*The figures in the right-hand margin indicate marks.*

*Candidates should attempt Q. No. 1 from Section – A and Q. No. 5 from Section – B which are compulsory and any **three** of the remaining questions, selecting at least **one** from each Section.*

### SECTION – A

1. Answer any **three** of the following : 20×3 = 60

   (a) Give a detailed account of the life cycle patterns of algae with suitable diagrams.

   (b) Describe types of fructifications found in different groups of fungi with suitable examples.

   (c) Schematically represent the system of classification proposed by Cronquist (1957) and compare it with Bentham and Hooker's natural system of classification.

(d) Give an account of structural variation of megasporophylls in different species of Cycas and add a note on distribution of Cycas species in India.

2. Answer the following : 20×3 = 60

(a) Describe the stages of generalised and specialised transduction in bacteria.

(b) Write the diagnostic features of Euphorbiaceae with floral diagrams and floral formulae.

(c) Discuss the evolution of bryophytes in the lights of 'regressive evolution theory'.

3. Answer of the following : 20×3 = 60

(a) On the basis of Zimmerman's 'Telome theory', describe how the elementary processes help in explaining the evolution of the vegetative and reproductive structures in different groups of pteridophytes.

(b) Write about the disease cycle, symptoms and control of Rice Tungro Virus (RTV).

(c) Describe the characteristic features and economic importance of Apiaceae.

4. Write explanatory notes on the following : 20×3 = 60

(a) Homothallism and heterothallism in fungi

(b) Mechanisms of dissemination of plant diseases

(c) Reproduction in Bacillariophyceae

## SECTION – B

5. Answer any **three** of the following : 20×3 = 60

(a) Give an account of the cultivation and uses of major spice and condiment yielding plants of India.

(b) Describe different types of permanent tissues with suitable illustrations and examples.

(c) Give a comparative account of developmental stages of dicot- and monocot-embryo with illustration.

(d) State the principle of chi-square test and its significance.

6. Answer the following : 20×3 = 60

(a) Give an account of different types of endosperm development with suitable diagrams.

(b) Write an essay on different types of dye obtained from plants mentioning its source and uses.

(c) Briefly describe the methods of protoplast isolation and its culture.

7. Answer the following : 20×3 = 60

(a) Discuss the role of Botanical Gardens adding a brief note on major botanic gardens of India.

(b) Characterize different types of stomata in angiosperms with suitable illustration and example.

(c) State the importance of spore-pollen morphology in modern scientific research.

8. Write explanatory notes on the following : 20×3 = 60

(a) Ethnobotany in India

(b) Essential components of culture medium to support in vitro plant growth

(c) Probability distribution