

Exam. Code : 107401

Subject Code : 2230

B.Sc. Biotechnology I<sup>st</sup> Semester

## BT-2 : BOTANY-A

Time Allowed—3 Hours]

[Maximum Marks—40

**Note :-** Attempt **all** questions from Section-A, **five** questions from Section-B and **two** questions from Section-C. Be brief and to the point in your answers.

## SECTION-A

1. Give very short answers, not exceeding about 1/3 of a page, to each of the following questions. Each question carries 1 mark.

- (a) Which part of the short apex refers to plerome ? Comment upon its function.
- (b) What do you understand by ring porus and diffuse porus wood ? Explain giving one example each.
- (c) Name the most common type of embryo sac in the ovules of angiosperms. Comment upon its structural peculiarities.
- (d) How does parthenogenetically developed embryo differs from apogamously developed embryo ?
- (e) Define Herkogamy. Comment upon its biological significance.
- (f) Comment upon the disadvantages of autogamy.
- (g) Compare the gynoecium of family solanaceae with that of family Liliaceae.
- (h) Explain the phenomenon of triple fusion and double fertilization.

## SECTION-B

2. Give answers of upto 2 pages for any five of the following questions. Each such question carries 4 marks.
- (a) Give an illustrated account of the Tunica-Corpus theory so as to explain the apical organization of the shoot.
  - (b) Comment upon the various anomalies that are generally found in the internal structure of Dicot stems. Give an illustrated account of the *Nyctanthes* stem depicting anomalous peculiarities.
  - (c) Give an account of various stages in the development of male gametophyte.
  - (d) Give an illustrated account of the development of endosperm.
  - (e) Give an account of the structure and dehiscence of anther.
  - (f) Write explanatory note on each of the following :
    - (i) Aestivation
    - (ii) Floral symmetry.
  - (g) Write diagnostic characters of family Rutaceae and Solanaceae.
  - (h) Write brief notes on each of the following :
    - (i) Male sterility
    - (ii) Advantages of cross pollination.

## SECTION-C

3. Attempt any **two** of the following questions. Answer to each such question should not exceed **5** pages and each question will carry **6** marks.

- (a) Define secondary growth. Give an illustrated account of formation of secondary vascular tissue in the stem of *Helianthus annuus*.
- (b) Define polyembryony. Give an illustrated account of development of multiple embryos in dicots.
- (c) Give an illustrated account of development of megasporangium and megagametophyte in a typical dicot plant.
- (d) Write short notes on the following :
  - (i) Self-incompatibility
  - (ii) Secondary growth in a typical dicot root.