



SE – 179

IV Semester B.Sc. Examination, September 2020  
(CBCS) (Fresh + Repeaters) (2015-16 and Onwards)  
**BOTANY – IV**  
**Gymnosperms and Embryology of Angiosperms**

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer *all* questions.  
2) Draw diagrams *wherever* necessary.

PART – A

- I. Explain/Define **any ten** of the following in **two** (or) **three** sentences. **(10×2=20)**
- 1) What is Porogamy ?
  - 2) Define cleavage polyembryony.
  - 3) Draw a neat labelled diagram of cycas megasporophyll.
  - 4) Give any two applications of protoplast culture.
  - 5) Define parthenocarpy.
  - 6) What is cytokinesis ? Mention its types.
  - 7) Mention any two angiospermic characters of Gnetum.
  - 8) What is double fertilization ?
  - 9) Define Endothecium.
  - 10) What is Nemec Phenomenon ?
  - 11) What is Spur ? Give example.
  - 12) Define an anatropous Ovule.

PART – B

- II. Write critical notes on **any four** of the following. **(4×5=20)**
- 13) Corolloid roots.
  - 14) Anther wall layers.
  - 15) Contributions of B.G.L. Swamy.
  - 16) Embryo culture.
  - 17) Techniques of plant tissue culture.
  - 18) Helobial type of endosperm.

P.T.O.



## PART - C

III. Give a comprehensive account of **any three** of the following. (3×10=30)

- 19) Describe the development and structure of Allium type of embryosac development.
- 20) Explain male and female strobili in Gnetum.
- 21) Give an account of tapetum with regard to the structure, development, types and its role in formation of pollen grains.
- 22) Describe secondary growth in Pinus stem.
- 23) Explain Crucifer type of Dicot embryo development.