



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.
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