

IV Semester B.Sc. Examination, May/June 2016
(CBCS) (Fresh) (2015-16 and Onwards)
BOTANY (Paper – IV)
Gymnosperms and Embryology of Angiosperms

Time : 3 Hours

Max. Marks : 70

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

A. Explain/Define **any ten** of the following in **two** or **three** sentences : (10×2=20)

- 1) What is pollen tetrad ? Mention the types.
- 2) What is double fertilization ?
- 3) What are compound pollengrains ? Give an example.
- 4) Draw a neat labelled diagram of male gametophyte of angiosperms.
- 5) Differentiate between crassinucellate and tenuinucellate conditions.
- 6) What is pollen embryosa ?
- 7) What is coenomegaspore ?
- 8) Mention four benefits of gymnosperms.
- 9) What is tapetum ? Mention the two types.
- 10) What is parthenocarpy ?
- 11) Define totipotency.
- 12) Give any two applications of protoplast culture.

B. Write critical notes on **any four** of the following : (4×5=20)

- 13) Cellular endosperm.
- 14) P. Maheswari.
- 15) Structure of typical angiosperm ovule.
- 16) Embryological evidences in relation to taxonomy of Trapa.
- 17) T. S. of pinus needle.
- 18) Applications of palynology.

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

- 19) Internal structure of Gnetum stem and anomalous secondary growth.
- 20) Microsporogenesis in angiosperms.
- 21) Sexual reproduction in cycas.
- 22) Development and structure of monosporic type of embryosa.
- 23) Steps involved in plant tissue culture with a note on MS media.