

3 (Sem-2) BOT M 1

2018

BOTANY

(Major)

Paper : 2-1

(Gymnosperms, Paleobotany and Plant Anatomy)

Full Marks : 60

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Answer any seven of the following : $1 \times 7 = 7$
- (a) What is laticifer?
 - (b) What is 'bars of Sanio'?
 - (c) Why does *Ginkgo* fruit emit unpleasant odour?
 - (d) Name the only living element of xylem tissue.
 - (e) What are progymnosperms?
 - (f) Name two angiosperms having cortical bundles.
 - (g) Define calyptrogen.
 - (h) What are bulliform cells?

2. Answer any *four* of the following : $2 \times 4 = 8$

- (a) "Bennettitales resemble Cycads." Give reasons.
- (b) How are fossils named?
- (c) Draw and label the TS of coralloid root.
- (d) Give a brief description of female cone of *Cryptomeria*.
- (e) Distinguish between porous and non-porous woods.

3. Answer any *three* of the following : $5 \times 3 = 15$

- (a) Discuss the evolution of trachiar elements of seed plants.
- (b) Describe the types of root apices found in dicot of angiosperms.
- (c) "*Pinus* exhibits polyembryony." Explain.
- (d) Write a note on activity of cork cambium.

4. Answer the following questions : $10 \times 3 = 30$

- (a) Why is the reproductive organs of *Gnetum* called inflorescence rather than strobili? Describe the detailed structures of reproductive organs of *Gnetum*.

$2 + 8 = 10$

Or

Describe the development of male and female gametophytes of *Ginkgo*. Highlight its similarities with that of *Cycas*.
4+4+2=10

- (b) Give an account of the external morphology and spore-producing organs of *Cordaites*.
5+5=10

Or

When did *Lepidodendron* first appear? Describe the internal structure of the stem and strobili associated with it.
1+5+4=10

- (c) What is the difference between tissue and tissue system? Describe the epidermal tissue system with special reference to epidermal outgrowths. 1+9=10

Or

Give in detail the chemical composition and ultrastructure of plant cell wall.
5+5=10

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