

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 )

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*.  $2 + 8 = 10$

( 3 )

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 *Cordaitea*.  $5 + 5 = 10$

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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