

2021

(March)

BOTANY

(Major)

Course : 301

(Pteridophytes, Gymnosperms and Paleobotany)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

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

1. (a) Answer the following as directed : $1 \times 3 = 3$
- (i) Gymnospermic endosperm is haploid/diploid/triploid/tetraploid.
(Choose the correct answer)
 - (ii) In which species of pteridophyte, the sporophyll has the form of a stalked peltate disc?
(Write in one word)
 - (iii) The sporangium of *Psilotum* is one-chambered / two-chambered / three-chambered/multi-chambered.
(Choose the correct answer)

(b) Fill in the blanks :

1×2=2

(i) Each of the sorus of *Marsilea* is covered by a thin delicate layer known as _____.

(ii) Perianth is present in _____ of gymnosperm.

2. Write short notes on the following :

(a) Economic importance of pteridophytes 3

(b) Eusporangiate and leptosporangiate ferns 2

(c) 'Tent Pole' of *Ginkgo* 2

(d) Apophysis of *Pinus* ovule 2

3. (a) With suitable diagrams, describe the various types of stele found in *Lycopodium*.

3+4=7

Or

Give a comparative account of the sporangiferous spike of *Selaginella* and *Equisetum* with sketches.

4+3=7

(b) What are the criteria on which pteridophytes are classified? Give a brief account of one of the widely accepted modern classifications of pteridophytes.

2+5=7

Or

Distinguish between homospory and heterospory. Mention the significance of heterospory. What do you mean by incipient heterospory? $2+3+2=7$

4. Write explanatory notes on any *two* of the following (Give sketches where necessary) : $5\frac{1}{2}\times 2=11$

- (a) *Ginkgo* as a living fossil
- (b) Angiospermic characters of *Gnetum*
- (c) Classification of gymnosperm
- (d) Polyembryony in *Pinus*

5. Give a comparative account of the anatomy and spore-bearing organs of *Hornea* and psilophyton with suitable sketches. $5+4=9$

Or

Write short notes on any *three* of the following : $3\times 3=9$

- (a) Microsporangia of *Lyginopteris*
- (b) Structure of the flower of *Williamsonia*
- (c) Theory of fossilization
- (d) Heterophylly in *Sphenophyllum*

★ ★ ★