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Reg. No. :

Code No. : 6891

Sub. Code : PBOM 21

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Second Semester

Botany – Core

**PTERIDOPHYTES, GYMNOSPERMS AND
PALEOBOTANY**

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The pteridophytes show complete absence of
 - (a) cambium
 - (b) vessels
 - (c) both of these
 - (d) stomata

2. The term frond in a fern is used for
- (a) Rachis
 - (b) Whole plant
 - (c) Spore bearing leaf
 - (d) Sexually reproducing structure
3. Which of the following aquatic fern performs nitrogen fixation?
- (a) *Salvinia* (b) *Nostoc*
 - (c) *Salvia* (d) *Azolla*
4. A sporocarp is seen in
- (a) *Schizaea*
 - (b) *Trichomanes*
 - (c) *Salvinia*
 - (d) *Lycopodium*
5. The stele having a smooth core of xylem surrounded by phloem
- (a) Siphonostele (b) Actinostele
 - (c) Plectostele (d) Haplostele

6. Prothallus represents
- (a) Gametophytic phase in a fern
 - (b) Sporophytic phase in a fern
 - (c) Gametophytic phase in a gymnosperm
 - (d) Gametophytic phase in an angiosperm
7. Zooidiogamy is seen in
- (a) *Cycas* (b) *Gentium*
 - (c) *Pinus* (d) *Angiosperm*
8. Phloem of gymnosperm differs from angiosperm in
- (a) having parenchyma
 - (b) having no companion cells
 - (c) having no sieve tubes
 - (d) having no sclerenchyma
9. An important index fossil for the paleozoic era are
- (a) trilobites (b) sponge
 - (c) fish (d) trees
10. When minerals take the place of once-living materials _____ fossils are formed.
- (a) petrified (b) amber
 - (c) physical (d) mold

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Comment on structure of *Calamites*.

Or

- (b) Explain evolution of gametophytic generation in *Sphenophyllum*.

12. (a) Justify the sporophyte of *Ophioglossum*.

Or

- (b) State the morphological features of *Polypodium*.

13. (a) Write notes on eustele.

Or

- (b) Describe about cladospionic siphonosteles.

14. (a) Write notes on morphology of *Gnetum*.

Or

- (b) State the distribution of *Thxus*.

15. (a) Describe about palaeoclimates.

Or

(b) Comment on coalballs.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Discuss on reproduction in Rhynia.

Or

(b) How will you classify Pteridophytes according to Reimer?

17. (a) Write an essay on reproduction in *Marselia*.

Or

(b) Give an account on evolution of sporophyte in *Equisetum*.

18. (a) Describe evolution of stelar system in Pteridophytes.

Or

(b) Explain on Telome theory.

19. (a) Discuss on structure of Cycas male cone.

Or

(b) Give an account on economic importance of Gymnosperms.

20. (a) Discuss on role of fossil in coal excavation.

Or

(b) What are the techniques used for Palaeobotanical studies?
