**B. Sc. DEGREE END SEMESTER EXAMINATION : NOVEMBER 2023**
**SEMESTER 3 : BOTANY**
COURSE : **19U3CRBOT3 : BRYOLOGY, PTERIDOLOGY, GYMNOSPERMS AND PALEOBOTANY**
*(For Regular - 2022 Admission and Improvement / Supplementary – 2021/2020/2019 Admissions)*

Time : Three Hours                                                            Max. Marks: 60

**PART A**
**Answer all (1 mark each)**

1. Which genus is name as "Club Moss"?
2. What is amber?
3. Are stomata present in the sporocarp wall of Marsilea?
4. What is perigynium?
5. Name a pteridophyte whose spores have attached elaters.
6. What is the common mode of reproduction in bryophytes?
7. What is the word meaning of gymnosperms?
8. Why plant fossils are uncommon as compared to animal fossils?

                                                                          **(1 x 8 = 8)**

**PART B**
**Answer any 6 (2 marks each)**

9. Explain the morphology of sporophytic plant body of *Williamsonia.*
10. What is the anatomy of *Pinus* root?
11. Describe types of rhizoids in Marchantia?
12. Explain the morphology of foliage leaf in *Pinus.*
13. Describe the structure of Lycopodium strobilus.
14. Bring out the significance of Selaginella in the origin of seed habit.
15. Explain the structure of Riccia sporophyte.
16. Describe the sporocarp of Marsilea.

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                                                                          **(2 x 6 = 12)**

**PART C**
**Answer any 4 (5 marks each)**

17. Examine the affinities of *Gnetum* with gymnosperms.
18. Draw a diagrammatic labelled sketch of T.S. of young rachis of Pteris.
19. Explain the general characters of pteridophytes, and how it differ from bryophytes.
20. Give an account of antheridiophore of Marchantia?
21. Assess the xerophytic adaptations of *Cycas* leaflet.
22. Compare vegetative thallus of Marchantia with that of Anthoceros using suitable diagrams?
                                                                          **(5 x 4 = 20)**

23. Compare and discuss the stellar anatomy of Psilotum, Lycopodium, Marsilea and Pteris stem.

24. Describe the thallus structure and sexual reproduction in Riccia

25. Describe the life cycle of a homosporous pteridophyte in your syllabus.

26. With the help of suitable diagrams examine the structure of female cone and ovule of *Gnetum.* Also explain its pollination and fertilization.

**(10 x 2 = 20)**