

Reg. No .....

Name .....

23P2006

**M. Sc. DEGREE END SEMESTER EXAMINATION : MARCH 2023**

**SEMESTER 2 : BOTANY**

**COURSE : 21P2BOTT05: BRYOLOGY AND PTERIDOLOGY**

*(For Regular - 2022 Admission and Supplementary - 2021 Admission)*

Duration : Three Hours

Max. Weights: 30

**PART A**

**Answer any 8 questions**

**Weight: 1**

1. How would you distinguish between the protonema of a moss from filamentous green algae? (An, CO 3)
2. Differentiate perigynium and perichaetium in Marchantia. (U, CO 2, CO 4)
3. Write down four important characters of Jungermaniales. (U, CO 3, CO 4)
4. Describe the arrangement of leaves in Jungermaniales. (E, CO 2, CO 3)
5. Among the sporogonia of Riccia and Anthoceros which is more primitive and why? (R)
6. Explain the structure of Equisetum sporangiophore. Give its phylogenetic affinity. (U, CO 1, CO 2, CO 4)
7. Explain ligule. Also draw and label the parts of a ligule. (R, CO 2, CO 4)
8. What is heterospory? Explain various arrangements of megasporophyll in Selaginella (R, CO 2)
9. Differentiate sorus with monosporaangiate soral condition? (U, CO 2, CO 4)
10. Define Sorus and what are the different soral types based on origin. (U, CO 3, CO 4, CO 5)  
**(1 x 8 = 8)**

**PART B**

**Answer any 6 questions**

**Weights: 2**

11. Briefly describe the economic importance of Bryophytes. (R, CO 2, CO 3)
12. Write a comparative account of Polytrichales and Bryales. (An, CO 2, CO 3)
13. The thallus structure of Marchantia is complex in comparison to that of Riccia. Explain. (An, CO 4)
14. Bring out the fundamental differences in which Anthocerotales differ from Hepaticae. (An, CO 2, CO 3, CO 5)
15. Explain the major two theories regarding the origin of pteridophytes. (U, CO 4)
16. Draw and describe the sporangium of Isoetes. (U, CO 2, CO 5)

17. "Psilotum combines the characters of simplicity and primitiveness", Discuss. (U, CO 2, CO 3)
18. Give an account on ecologically important ferns. (U, CO 5)  
(2 x 6 = 12)

### PART C

Answer any 2 questions

Weights: 5

19. Compare and contrast the life history of *Riccia* with that of *Marchantia* bringing out those features which are of evolutionary significance. (An, CO 3, CO 4, CO 5)
20. Describe the sporophyte of *Anthoceros*. What are the features of the sporophyte which give evolutionary link to higher plants? (R, CO 1, CO 2, CO 3)
21. Compare the stem anatomy and sporophyll of the genera coming under Filicales. (U, CO 3, CO 4, CO 5)
22. Explain the variation and advancement exhibited in gametophytic generations of pteridophytes. (U, CO 3, CO 4, CO 5)  
(5 x 2 = 10)

#### OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	Understand the diversity of primitive land plants.	U	6, 20	6
CO 2	Classify Bryophytes and Pteridophytes based on their morphological and anatomical features.	E	2, 4, 6, 7, 8, 9, 11, 12, 14, 16, 17, 20	21
CO 3	Compare the main characteristics of Bryophytes and Pteridophytes.	E	1, 3, 4, 10, 11, 12, 14, 17, 19, 20, 21, 22	32
CO 4	Discuss the development of land adaptations in the Bryophytes and Pteridophytes.	An	2, 3, 6, 7, 9, 10, 13, 15, 19, 21, 22	25
CO 5	Compare various lifecycle events in the Bryophyte and Pteridophytes.	R	10, 14, 16, 18, 19, 21, 22	22

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;