



M.Sc. BOTANY
First Semester (Repeat)
LOWER PLANT DIVERSITY-II
(MSB - 102)

Duration: 3Hrs.

Full Marks: 70

Part-A (Objective) =20
Part-B (Descriptive) =50

(PART-B: Descriptive)

Duration: 2 hrs. 40 mins.

Marks: 50

Answer any four from Question no. 2 to 8
Question no. 1 is compulsory.

1. List the distinctive differences between liverworts and mosses. Describe the life cycle of *Sphagnum* with suitable diagrams. (2+8=10)
2. With the help of suitable diagram, explain the structure of capsule in *Funaria*. Discuss its dehiscence also. (8+2=10)
3. A. "*Anthoceros* is a synthetic genus". Justify it. (10)
Or
B. "*Anthoceros* as an association of primitive *Gametophytes* and advanced *Sporophyte*." Discuss. (10)
4. Describe the vegetative reproduction of *Bryophytes* with diagrams. Write an illustrated account of the sporophyte of *Polytrichum*. (8+2=10)
5. Write short notes on: (any two) (5+5=10)
 - (a) Petiole of *Marsilea*.
 - (b) Sporophyte of *Polytrichum*.
 - (c) Gametophytic generation of *Marsilea*.

6. Describe the land plant characters of genus *Rhynia*. Write about the occurrence of genus *Psilotum* and describe the anatomy of stem. (4+2+4=10)
7. What is protocorn? Explain briefly about the different type of prothallus and the economic importance of *Lycopodium*. Write about the ligule in *Selaginella*. (1+4+3+2=10)
8. Draw the life cycle of *Selaginella*. Give the graphic representation of the life cycle of isoetes. (5+5=10)



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(PART A - Objective Type)

I. Choose the correct answer:

1×20=20

- Which of the following genus is also known as “peat moss”?
(a) *Sphagnum* (b) *Riccia*
(c) *Funaria* (d) *Polytrichum*
- The middle sterile part of *Funaria* capsule is known as
(a) Columella (b) Apophysis
(c) Operculum (d) Spore sac
- Modified leaves surrounding the archegonia of *Polytrichum* are called
(a) perigonal leaves (b) perichaetial leaves
(c) paraphysis (d) none of the above
- Columella is a part of
(a) Capsule (b) Seta
(c) Foot (d) Rhizome
- Small resting buds developed on the rhizoids of *Funaria* is known as
(a) Gemmae (b) Secondary protonema
(c) Bulbils (d) Chlorenema
- Archegoniophore* is found in
(a) *Riccia* (b) *Marchantia*
(c) *Anthoceros* (d) None of these
- The slime pores are found in
(a) *Riccia* (b) *Marchantia*
(c) *Anthoceros* (d) *Sphagnum*
- Pyrenoids are found in
(a) *Marchantia* (b) *Anthoceros*
(c) *Polytrichum* (d) None of these
- The columella of *Anthoceros* is :
(a) 4 celled (b) 8 celled
(c) 16 celled (d) 32 celled

10. Sphaerocarpos belongs to the family
 (a) *Marchantiaceae* (b) *Sphaerocarpaceae*
 (c) *Porellaceae* (d) *Calobryaceae*
11. Sporocarp of *Marsilea* is
 (a) Unisporangiate (b) Bisporangiate
 (c) Quadrisporangiate (d) Multisporangiate
12. What comes out of Marsileasporocarp after dehiscence?
 (a) Microspores.
 (b) Megaspores.
 (c) Both microspores and megaspores.
 (d) Ring of gelatinous tissue containing soralsaca.
13. Sporangia are developed in *Equisetum* on
 (a) Upper surface of sporophylls (b) Sporangiphores
 (c) Scale leaves (d) Lower surface of sporophyll
14. The type of attachment of pedicel with the petiole where Pedicels free or slightly connate and attached to the base of the petiole is found in
 (a) *M. Quadrifolia* (b) *M. minuta*
 (c) *M. Subangulata* (d) *M. Polycarpa*
15. The genus lycopodium includes about ____ species.
 (a) 700 (b) 10 (c) 20 (d) 200
16. Which one is the epiphytic species of pteridophyte?
 (a) *Lycopodium Phlegmaria*, (b) *Lycopodium clavatum*
 (c) *Lycopodium selago* (d) *Lycopodium serratum*
17. Which one is the xerophytic species of pteridophyte?
 (a) *Selagin allamonospora* (b) *Selagin alla oregano*
 (c) *Selagin allapilifera* (d) *Selagin allaadunca*
18. In *Selagin allakraussiana* the steler system found is
 (a) Monostelic (b) Distelic
 (c) Polystelic (d) Both a & b
19. The intermediate types of prothalli found in
 (a) *Lycopodium Phlegmaria* (b) *Lycopodium clavatum*
 (c) *Lycopodium selago* (d) *Lycopodium serratum*
20. Trabecule is a modified form of
 (a) Epidermis (b) Endodermis
 (c) Cuticle (d) Inner cortex
