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Roll No.

BOT-502

Biology and Diversity of Algae, Bryophyta and Pteridophyta

M. Sc. BOTANY (MSCBOT-12/13/16/17)

First Year, Examination, 2018

Time : 3 Hours

Max. Marks : 80

Note : This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Attempt the questions contained in these Sections according to the detailed instructions given therein.

Section-A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. Give a detailed account of classification of Algae. Discuss the characteristic features of important classes with examples of the members.
2. Give a detailed description of thallus structure in Anthocerotales. Discuss, how it differs from Marchantiales.
3. Write detailed notes on any *two* of the following :
 - (a) General account of Cyanophyta
 - (b) Perennation in Algae
 - (c) Important characters and sexual reproduction in Bacillariophyceae

(B-1) P. T. O.

4. What is Heterospory ? Describe the development of sporophyte in any heterosporous pteridophyte studied by you.

Section-B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of eight (8) marks each. Learners are required to answer *four* (04) questions only.

1. Describe thallus organization in chlorophyta.
2. Write a brief note on general account of Xanthophyceae.
3. Economic importance of algae.
4. Describe the process of spore dispersal in Bryophytes.
5. Write an explanatory note on general account of jungermanniales.
6. Morphological nature of rhizophore in *Selaginella*.
7. Give a brief account of Fossil Pteridophytes.
8. Discuss in brief on Telome Theory.

Section-C

(Objective Type Questions)

Note : Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.

Indicate whether the following statements are True *or* False :

1. All algae are autotrophic. (True/False)

2. The red and brown algae do not contain any chlorophyll. (True/False)
3. Vegetative propagation in *Marchantia* takes place by the formation of gemmae. (True/False)
4. *Rhynia* was discovered by Kidston and Lang. (True/False)
5. Pteridophytes are also known as “vascular cryptogams.” (True/False)

Choose the correct alternative :

6. Which alga is used as biofertilizers ?
 - (a) *Polysiphonia*
 - (b) *Sargassum*
 - (c) *Hydrodictyon*
 - (d) *Nostoc*
7. Red algae differ from green algae and brown algae in having :
 - (a) No chlorophyll a
 - (b) No differentiated cells
 - (c) No flagellated cells or stage in their life cycles
 - (d) Haemoglobin within their cells
8. Name a bryophyte which has *Nostoc* colonies in the thallus ?
 - (a) *Riccia*
 - (b) *Marchantia*
 - (c) *Sphagnum*
 - (d) *Anthoceros*

9. A stele without a central pith is called a :
- (a) Protostele
 - (b) Siphonostele
 - (c) Solenostele
 - (d) Dictyostele
10. Trabeculated endodermis is found in :
- (a) *Lycopodium*
 - (b) *Selaginella*
 - (c) *Pteridium*
 - (d) *Nephrolepis*