

Total number of printed pages—4

14 (BOT-1) 1016

2022

**BOTANY**

Paper : BOT-1016

**[ Diversity-I (Algae, Fungi, Bryophytes) ]**

Full Marks : 80

Time : Three hours

***The figures in the margin indicate full marks for the questions.***

1. Fill in the gaps with appropriate terms : 1×7=7
- (a) \_\_\_\_\_ and \_\_\_\_\_ are algal products.
- (b) Members of red algae lack \_\_\_\_\_ and \_\_\_\_\_ pigments.
- (c) Ectomycorrhizal association is established between coniferous roots and members of fungal order \_\_\_\_\_ .
- (d) Capsomeres are unit member of viral \_\_\_\_\_.

Contd.

- (e) A geologic formation discovered from South Africa known as \_\_\_\_\_ is the first direct evidence of cellular life.
- (f) Mycoplasmas are bacteria having \_\_\_\_\_ G+C contents.
- (g) \_\_\_\_\_ generally present in liverworts to facilitate spore dispersal are absent in mosses, which have \_\_\_\_\_ instead to control spore dispersal.

2. Define the following terms giving suitable examples : 2×4=8

- (a) Algal indicators
- (b) Prions and interferons
- (c) Mineralization
- (d) Protonema

3. Write short notes on **any three** of the following : 5×3=15

- (a) Role of bryophytes as pollution indicator and monitoring
- (b) Discuss the application of fungi in industries
- (c) Genome fusion hypothesis and origin of cellular life

- (d) Recent methods used for identification of Algae
- (e) Compare mutualism and parasitism giving suitable examples
- (f) Phylogenetic relationships amongst different groups of algae

4. Answer **any five** of the following questions :  
10×5=50

- (a) Give a comparative account of post fertilization stages in Rhodophyta and Phaeophyta. Illustrate your answer with suitable labelled diagrams.
- (b) How lichens establish themselves in unconducive environments ? Discuss the mechanism of phycobiont and mycobiont interactions. How does sulphur pollution affect lichens ?
- (c) Discuss the diversity of fungal spores with the help of suitable diagrams. Write a note on degeneration of sex and parasexuality in Fungi.
- (d) What do you understand by ecological specialization? Critically discuss the role of plant mycorrhizal association in plant growth.

- (e) What do you understand by the theory of progressive and retrogressive evolution ? Critically analyse the diversity and distribution of Bryophytes in N.E. India.
- (f) What is universal phylogenetic tree and who proposed it ? Why is RNA considered the first self-replicating entity ? Give reasons why some workers oppose this concept.
- (g) What are plant viruses ? How does virus multiply in a host ? Discuss virus vector relationships. Write a note on tumour viruses and viroids.
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