

Total No. of printed pages = 5

63/2 (SEM-1) BOT 101

2021

(held in 2022)

**BOTANY**

(Theory Paper)

Paper : BOT-101

(Phycology, Mycology and Lichenology)

Full Marks – 80

Time – Three hours

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

1. Choose the correct options of the following  
MCQ : 1×6=6

(i) Which of the following algae indicates the  
presence of oil wastes ?

(a) *Amphora ovalis*

(b) *Ulothrix zonata*

(c) *Calothrix braunii*

(d) *Euglena viridis*

[Turn over

(ii) The process of dikaryotisation involves

- (a) plasmogamy
- (b) plasmogamy associated with transfer of nuclei
- (c) karyogamy
- (d) plasmogamy and karyogamy

(iii) Which of the following is not evidence for the role of endosymbiosis in the origin of eukaryotes ?

- (a) Chloroplasts have their own DNA.
- (b) The inner membrane of a chloroplast is similar to prokaryotic membranes.
- (c) Mitochondria and chloroplast both are surrounded by two membranes.
- (d) The DNA in the eukaryotic nucleus codes for some enzymes in mitochondria.

(iv) Which of the following is not true for lichens ?

- (a) Lichens lack cuticle
- (b) Are dependent on atmospheric deposition for their nutrition

(c) Lichens can be easily cultured

(d) Most of the secondary metabolites in lichens are unique to them

(v) Lichen species used for poisoning wolf is

- (a) *Cladonia rangifera*
- (b) *Evernia prunastri*
- (c) *Rocella montagnei*
- (d) *Lobaria pulmonaria*

(vi) Name of the special hyphal tips through which parasitic fungi absorb nutrients directly from the cytoplasm of the living host is \_\_\_\_\_.

- (a) Haustoria
- (b) Appresorium
- (c) Constricting ring
- (d) Clamp connection.

2. Answer the following very short questions :

2×5=10

- (i) What is the source and uses of Agar-Agar ?
- (ii) Write two potential uses of Fungi as Mycoherbicide.

(iii) What is crozier formation ?

(iv) Write the source and uses of Alginic acid.

(v) 'Lichens are pioneer of ecological succession'. – Justify the given statement.

3. Write short notes on any six :  $5 \times 6 = 30$

(i) Range of chloroplast found in Chlorophyceae

(ii) Triphasic life cycle in *Polysiphonia*

(iii) Function of Heterocyst

(iv) Ultrastructure of fungal cell wall

(v) Salient features of lichen

(vi) Distinguish between Zygomycetes and Oomycetes

(vii) Wood decaying Fungi

(viii) Algae as Biofertilizer

(ix) Role of lichens in monitoring air pollution.

4. Answer any two of the following questions :

$10 \times 2 = 20$

(i) Write the distinguishing characters of Pheophyceae with special reference to its advance characteristics. Discuss the type of alternation of generations found in *Ectocarpus*.

$6 + 4 = 10$

(ii) Give the distinguishing characteristics of Division Basidiomycotina. Describe the various types of Basidia found within Basidiomycotina.  $5 + 5 = 10$

(iii) With the help of a neat diagram describe the diversity of reproductive structures found in lichen. Mention the range of spores found in lichens. 10

5. Write explanatory notes on any two :  $7 \times 2 = 14$

(i) Economic importance of Algae.

(ii) Life cycle of Heterotricous Rust (*Puccinia graminis*).

(iii) Ultrastructure of Cynophycean cell.