2025

(CBCS)

(5th Semester)

BOTANY

SIXTH PAPER

(Algae, Lichens and Bryophytes)

Full Marks : 75

Time : 3 hours

The figures in the margin indicate full marks for the questions

(SECTION : A—OBJECTIVE)

(*Marks* : 10)

Tick (✓) the correct answer in the brackets provided : 1×10=10

1. Which of the following is known as 'blue-green algae'?

(a) Phaeophyceae ( )

(b) Cyanophyceae ( )

(c) Chlorophyceae ( )

(d) Chrysophyceae ( )

2. F. E. Fritsch's classification of algae is not based on

(a) reserve food materials ( )

(b) pigmentation ( )

(c) types of flagella ( )

(d) types of reproduction ( )

3. Heteromorphic diplohaplontic life cycle is found in

(a) Bacillariophyceae ( )

(b) Chlorophyceae ( )

(c) Rhodophyceae ( )

(d) Phaeophyceae ( )

4. What is the primary pigment responsible for the red colour in Rhodophyceae?

(a) Chlorophyll a ( )

(b) Chlorophyll b ( )

(c) Phycoerythrin ( )

(d) Carotene ( )

5. The asexual reproduction of lichens takes place by means of

(a) conidiogonium and pycnogonium ( )

(b) carpogonium and spermogonium ( )

(c) soredium, isidium and pycniospore ( )

(d) hormogonium and akinetes ( )

6. Based on their morphological structure of thalli, lichens are classified as

(a) crustose, foliose, fruticose ( )

(b) corticolous, saxicolous, terricolous ( )

(c) homoiomerous and heteromerous ( )

(d) ascolichens, basidiolichens, deuterolichens ( )

7. Which of the following statements is false in case of bryophytes?

(a) Asexual reproduction is completely absent. ( )

(b) They never form xylem tissue. ( )

(c) The sporophytic phase is very short lived and completely dependent upon the gametophyte. ( )

(d) Bryophytes are always found as single individual. ( )

8. Vegetative reproduction by means of innovation is found in

(a) *Sphagnum* ( )

(b) *Riccia* ( )

(c) *Pellia* ( )

(d) *Polytrichum* ( )

9. Archegonium is

(a) elongated ( )

(b) tube-like ( )

(c) club-shaped ( )

(d) flask-shaped ( )

10. According to the theory of progressive evolution, the simplest sporophyte will be

(a) *Riccia* ( )

(b) *Pellia* ( )

(c) *Sphagnum* ( )

(d) *Polytrichum* ( )

(SECTION : B—SHORT ANSWERS)

(*Marks* : 15)

Write short notes on the following : 3×5=15

UNIT—I

1. General characteristics of Chlorophyceae

OR

2. Flagellation in algae

UNIT—II

3. Reproduction in Rhodophyceae

OR

4. Diplontic life cycle in algae

UNIT—III

5. Nature of association of algal and fungal partners in lichens

OR

6. Specialized structure of lichens

UNIT—IV

7. Protonema stage of Bryopsida

OR

8. Vegetative reproduction in *Polytrichum*

UNIT—V

9. Antheridia of *Marchantia*

OR

10. Retrogressive theory

(SECTION : C—DESCRIPTIVE)

(*Marks* : 50)

Answer the following : 10×5=50

UNIT—I

1. Describe the Fritsch's system of classification of algae. 10

OR

2. Write notes on the following : 5×2=10

(a) Pigmentation in algae

(b) Spores and resting phases in algae

UNIT—II

3. Describe the economic importance of algae. 10

OR

4. Write notes on the following : 5×2=10

(a) Triphasic life cycle in algae

(b) Life cycle of Chlorophyceae

UNIT—III

5. Describe the economic importance of lichens. 10

OR

6. *(a)* Write the different types of lichens based on the external morphology and nature of attachment.

(b) Write on sexual reproduction in lichens. 5+5=10

UNIT—IV

7. Describe the characters of bryophytes and give an outline of the classification. 10

OR

8. Write notes on the following : 5×2=10

(a) Life history of *Riccia*

(b) Morphology of *Sphagnum*

UNIT—V

9. Describe the two views of origin of bryophytes. 10

OR

10. Write notes on the following : 5×2=10

(a) Archegonia of *Pellia*

(b) Theory of sterilization

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