2019

BOTANY

(Major)

Paper : 1.1

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Fill in the blanks with appropriate word(s) : 1×7=7

(a) Cell wall of algal cell consists of _____.

(b) Pyrenoid is the protein body with an envelope of starch observed within the cell organelle _____.

(c) _____ is an example of parasitic alga.

(d) In *Polysiphonia*, type of life cycle is _____.

(e) The pit connections are found in _____ alga.

(f) Amylum star is found in _____.

(g) Penicillin was discovered by _____.

2. Define the following terms : 2×4=8

(a) Heterocyst

(b) Heterothallism

(c) Ascospore

(d) Red rust disease

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

(a) Life cycle patterns in algae

(b) Modes of reproduction in *Coleochaete*

(c) Pigmentation and reserve food products of *Polysiphonia*

(d) Characteristic features in Chlorophyceae

(e) Systematic position and economic importance of *Saccharomyces cerevisiae* (Yeast)

4. Answer any *three* of the following : 10×3=30

(a) What are the common pigments present in algae? Give an account on the classification of algae on the basis of pigments present in them. 2+8=10

(b) Give a brief account of the life history of *Ectocarpus* with suitable diagram. 10

(c) Describe the vegetative structure, reproduction and systematic position of *Vaucheria* with the help of labelled diagrams. 3+5+2=10

(d) Give an illustrated account of the life history of *Phytophthora* and explain its mode of perennation in the late blight disease of potato. 8+2=10

(e) Describe briefly about the life history of *Agaricus* with the help of neat and labelled diagram. 10

(f) Write briefly about the different modes of nutrition found in kingdom Fungi with suitable examples. 10

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(Major)

Paper : 1.2

(Bryophytes and Pteridophytes)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Choose and write the correct answer : 1×7=7

(a) The development of sporophyte from gametophyte without gamete formation is called

(i) apogamy
(ii) apospory
(iii) heterospory
(iv) parthenogenesis

(b) Pseudoelaters without thickening bands occur in

(i) *Marchantia*
(ii) *Anthoceros*
(iii) *Porella*
(iv) *Riccia*

(c) Which of the following is used as packing material?

(i) *Polytrichum*
(ii) *Funaria*
(iii) *Sphagnum*
(iv) *Pogonatum*

(d) Trabeculae are seen in the sporogonium of

(i) *Funaria*
(ii) *Polytrichum*
(iii) *Sphagnum*
(iv) *Marchantia*

(e) Which of the following is 'club moss'?

(i) *Equisetum*
(ii) *Selaginella*
(iii) *Lycopodium*
(iv) *Rhynia*

(f) The gametophyte of *Psilotum* is

(i) exosporic
(ii) endosporic
(iii) dioecious
(iv) endoscopic

(g) Amphiphloic siphonostele is present in the rhizome of

(i) *Pteris*
(ii) *Marsilea*
(iii) *Gleichenia*
(iv) *Thymenophyllum*

2. Distinguish between the following : 2×4=8

(a) Leptosporangiate and Eusporangiate
(b) Apospory and Apogamy
(c) Prothallus and Protocorm
(d) Antheridium and Archegonium

3. Answer any *three* of the following questions : 5×3=15

(a) Describe the *Endothecium* in bryophytes.
(b) Describe the anatomical peculiarites of the rhizome of *Polytrichum*.
(c) Compare and contrast between Bryophytes and Pteridophytes.
(d) Describe the primitive characteristics of sporophyte of *Riccia*.
(e) Describe morphological nature of rhizophore in *Selaginella*.

4. Answer the following questions : 10×3=30

(a) Describe in detail about the morphological structure and reproduction of *Marchantia.*

Or

Describe the phylogenetic significance of *Anthoceros.*

(b) What is alternation of generations? Describe it in relation to *Psilotum* with the help of suitable diagrams.

Or

Write an illustrated account of the different types of gametophytes found in *Lycopodium.*

(c) What is heterospory? Describe in detail about the origin and evolution of heterospory of seed habit.

Or

Write about the progressive sterilization of the sporogenous tissue.

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