

2019

BOTANY

[Honours]

PAPER — I

Full Marks : 90

Time : 4 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

GROUP — A

1. Answer any *ten* questions of the following : 2×10
 - (a) Define magnetosome and carboxysome.
 - (b) What is interferon and prion ?
 - (c) What is meant by autogamy and allogamy ?
 - (d) Define lysogeny.

- (e) What is heterocyst ? Why it is useful in nitrogen fixation ?
- (f) Name the male reproductive part and female reproductive part of *chara*.
- (g) What is stiple and holdfast ?
- (h) Mention the pigments and food reserves of Rhodophyta.
- (i) Mention one economic and ecological importance of Lichen.
- (j) Why deuteromycetes is known as fungi imperfecti ?
- (k) Mention the economic importance of *Claviceps* sp.
- (l) Name the causal organism of Late Blight of potato and Black stem rust of wheat.
- (m) What is meant by hyperplasia and hypoplasia ?
- (n) Differentiate between racemose and cymose inflorescence.

- (o) Define monadelphous stamen. Give one example.

GROUP – B

Answer any five questions : 8 × 5

2. Draw and describe the different phases of a typical bacterial growth curve. Classify bacteria on the basis of nutritional requirement. 4 + 4
3. With neat diagram describe the structure of HIV. Mention the transmission process of AIDS. 6 + 2
4. Describe the reproduction of centric diatom through auxospore formation. Mention the peculiarity of the cell wall of bacillariophyceae. 6 + 2
5. What are the types of Lichens ? Write a note on the reproduction procedure of lichen. 2 + 6
6. Write short notes on : 4 + 4
 - (i) Role of enzymes in pathogenesis
 - (ii) Hyphal forms of fungi.

7. What is cohesion and adhesion of stamens ? Describe with its types with suitable diagrams. 2 + 6
8. Describe the life cycle of *Ascobolus* sp. with diagram. 5 + 3
9. Briefly mention the symptoms, causal organism etiology, disease cycle of Black stem rust of wheat. 2 + 1 + 2 + 3
10. Describe briefly the types of placentation and add a note on its evolution. Draw the diagram. 3 + 3 + 2

GROUP – C

Answer any two questions : 15 × 2

11. Describe with diagram different types of genetic recombination process in bacteria. 5 × 3
12. Write notes on the following : 3 × 5
- (i) Types of aestivation of corolla
 - (ii) Inflorescence of rice
 - (iii) Types of aggregate fruits
 - (iv) Types of ovule.

13. Give a general characters of Deuteromycotina. Draw and describe the fruit-bed of *Agaricus* sp. 8+7
14. Draw and describe the life cycle of Ectocarpus. Classify algae according to Lee (1989). 15
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