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Sr. No. 325108

December 2023

B.Sc. Life Sciences (Reappear) - SEMESTER I

Botany I Plant Diversity (BLS-101)

Time: 3 Hours

Max. Marks: 75

- Instructions:
1. It is compulsory to answer all the questions (1.5 marks each) of Part -A in short.
  2. Answer any four questions from Part -B in detail.
  3. Different sub-parts of a question are to be attempted adjacent to each other.

**PART -A**

- Q1 (a) "Virus is a link between living and Non-living". Comment. (1.5)
- (b) Differentiate between the cell wall of Gram-positive and Gram-negative Bacteria? (1.5)
- (c) What is Parasexuality? Discuss with reference to Fungi. (1.5)
- (d) Why are bryophytes called the 'Amphibians of Plant Kingdom'? (1.5)
- (e) Differentiate between ectomycorrhiza and endomycorrhiza. Give examples. (1.5)
- (f) What is alternation of generations? (1.5)
- (g) Differentiate between Lytic and Lysogenic Life cycle in viruses? (1.5)
- (h) List the five characteristic features of Gymnosperms. (1.5)
- (i) Differentiate between homosporous and heterosporous pteridophytes. Give examples. (1.5)
- (j) Write a note on economic importance of algae. (1.5)

**PART -B**

- Q2 (a) What is genetic recombination? Describe the different ways of recombination in Bacteria with the help of suitable diagrams. (10)
- (b) Discuss the range of thallus organization in algae. (5)
- Q3 (a) Tabulate the key features of all three classes of bryophytes with examples. (5)
- (b) Describe the internal structure of thallus, reproductive organs, sporophyte and life cycle of *Marchantia* along with necessary diagrams. (10)
- Q4 Describe the life cycle of *Puccinia graminis* along with necessary diagrams. (15)
- Q5 (a) 'Heterospory is the significant evolutionary step that leads to seed habit.' Comment on the statement. (5)
- (b) Describe the reproduction and life cycle of *Selaginella* along with suitable diagrams. (10)
- Q6 (a) Discuss the adaptations that helped the bryophytes in transition to land habit. (5)
- (b) Enumerate the distinguishing features of Zygomycota, Ascomycota and Basidiomycota. (10)

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Q7 Write short notes on any three.

(15)

- a) Structure and function of Gemma (with diagram)
- b) Structure of Lichens
- c) Structure of *Funaria* capsule (Diagram of longitudinal section)
- d) Coralloid roots in *Cycas* (structure and function)
- e) Heterothallism in Fungi
- f) *Rhizopus* Life cycle

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PART-A

- Q1 (a) Virus is a link between living and Non-living. Comment. (1.5)
- (b) Differentiate between the cell wall of Gram-positive and Gram-negative Bacteria? (1.5)
- (c) What is Parasexuality? Discuss with reference to Fungi. (1.5)
- (d) Why are Bryophytes called the 'Amphibians of Plant Kingdom'? (1.5)
- (e) Differentiate between ectomycorrhiza and endomycorrhiza. Give examples. (1.5)
- (f) What is alternation of generations? (1.5)
- (g) Differentiate between Lytic and Lysogenic life cycle in viruses? (1.5)
- (h) List the five characteristic features of Gymnosperms. (1.5)
- (i) Differentiate between homospores and heterospores pteridophytes. Give examples. (1.5)
- (j) Write a note on economic importance of algae. (1.5)

PART-B

- Q1 (a) What is genetic recombination? Describe the different ways of recombination in Bacteria with the help of suitable diagrams. (10)
- (b) Discuss the range of thallos organization in algae. (5)
- Q2 (a) Tabulate the key features of all three classes of Bryophytes with examples. (5)
- (b) Describe the internal structure of thallos, reproductive organs, sporophyte and the cycle of Marchantia along with necessary diagrams. (10)
- Q3 Describe the life cycle of *Fucus* graminis along with necessary diagrams. (15)
- Q4 (a) Heterospory is the significant evolutionary step that leads to seed habit. Comment on the statement. (5)
- (b) Describe the reproduction and life cycle of *Selaginella* along with suitable diagrams. (10)
- Q5 (a) Discuss the adaptations that helped the Bryophytes in transition to land habit. (5)
- (b) Enumerate the distinguishing features of Zygomycota, Ascomycota and Basidiomycota. (10)