

Paper: Biodiversity (Microbes, Algae, Fungi and Archegoniatae)

Paper No: CC1

UPC: 32165101_OC

MM: 75

Time: 3 + 1 hours

*All questions carry equal marks. Attempt any **four** questions.*

Instructions for Students:

1. Students must answer on A4 size papers.
2. Mark page number on top of each page.

Q1. Discuss in detail the **three methods** by which Bacteria exchange their genetic material with each other. Also, support your answer with neatly drawn well labelled diagrams for each method and their types. **MARKS: 10+8.75=18.75**

Q2. Discuss the detailed life cycle of the heteroecious obligate parasitic fungi studied by you and support your answer with diagrams wherever required. **MARKS: 12+6.75=18.75**

Q3. Discuss the evolutionary features which enabled the plants to establish themselves successfully on land through the ages. Describe the phenomenon of apospory and apogamy in early land plants. **MARKS: 8.75+5+5=18.75**

Q4. How were the viruses discovered? Draw a well labelled structure of an RNA virus studied by you. Discuss the two types of viral life cycles in detail. **MARKS: 2+4.75+12=18.75**

Q5. Explain the terms '**sulphur shower**' and '**bars of sanio**'. Write a short note on male and female reproductive structures of the genus studied by you showing the phenomena of sulphur shower. Also, comment on the economic importance of this genus. **MARKS: 4+9+5.75 = 18.75**

Q6. Mohan, an evolutionary biologist was going through his village where he spotted a population of green algae in a pond and some ferns around the bank of the pond. Out of curiosity he collected them and studied but he couldn't relate the evolutionary and morphological characters of those algae and fern plants as they were quite different from each other. He again visited the site and collected some plants which were having some overlapping characters of both algae and ferns and he termed them as 'Plant-X'

Identify the 'Plant-X' and discuss the similarities between the aquatic plant (discussed in this situation) and the 'Plant-X'. Describe the structure of archegoniophore for the member of hepaticopsida. **MARKS: 10+8.75 = 18.75**