2/R/19 M

[This question paper contains 6 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 7320 J

Unique Paper Code : 42161101 – OC

Name of the Paper : Biodiversity (Microbes, Algae, Fungi and Archegoniatae)

Name of the Course : **B.Sc. (Prog.)**

Semester : I

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all.
3. Q. No. **1** is compulsory.
4. Attempt all parts of a question together.
5. Draw well labelled diagrams wherever necessary.

1. (a) Fill in the blanks : (1×5=5)

(i) ..... is the genetic material in T-phage.

P.T.O.

(ii) An alga that gives red colour to the snow is .....

(iii) Dolipore septa are present in ..... fungi.

(iv) Ribbon shaped elaters can be seen in .....

(v) ..... species of *Pinus* is known as chir pine.

(b) Define **any five** of the following : (1×5=5)

(i) Episome

(ii) Heterocyst

(iii) Woronin bodies

(iv) Apophysis

(v) Leaf trace

(vi) Sulphur shower

(c) Give an appropriate term for each of the following : (1×5=5)

(i) A process by which one bacterium transfers genetic material to another through direct contact.

(ii) Cluster of leaves surrounding the group of antheridia on antheridial branch.

(iii) Phenomenon of frequent appearance of mushroom in circles on ground.

(iv) A colony having definite number of cells arranged in a particular manner, which is determined at the juvenile stage and does not increase during its subsequent growth.

(v) A stele in which the xylem has radiating ribs and the phloem is not continuous but is present in isolated masses, alternating with the projecting angles of xylem.

2. Differentiate between any **three** of the following: (3×5=15)

(i) Gram positive and gram negative bacterium

(ii) Crozier and clamp formation

(iii) Ectomycorrhiza and endomycorrhiza

(iv) Actinostele and plectostele

(v) Manoxylic and pycnoxylic wood

3. Draw well labelled diagrams of any **three** of the following : (3×5=15)

(i) Bacterial cell

(ii) VS of needle of *Pinus*

(iii) TS of internode of *Equisetum* stem

(iv) LS of capsule of *Funaria*

(v) EM of *Chlamydomonas*

4. Write short notes on any **five** of the following : (5×3=15)

(i) Transformation in bacteria

(ii) Morphology of *Vaucheria*

(iii) Significance of lichens

(iv) Adaptations to land habit

(v) Ecological and economical importance of *Sphagnum*

(vi) Spore dispersal mechanism in *Pteris*

5. (a) What are the differences between the ovule of *Cycas* and *Pinus* at the time of fertilization? Draw diagrammatic sketches to support your answer. (6)

(b) Describe various modes of vegetative reproduction in *Marchantia*. (4)

(c) With the help of suitable diagrams describe the life cycle of nannandrous species of *Oedogonium*. (5)

6. (a) Give a general account of replication in viruses. (3)

(b) Briefly describe the various stages in the life cycle of *Puccinia graminis tritici* found on primary host with the help of suitable diagrams. (5)

P.T.O.

(c) What is heterospory? Explain it with special reference to the pteridophytes studied by you and briefly discuss its significance. (7)