This question paper contains **4** printed pages]

Roll No. | | | | | | | | | | | |

S. No. of Question Paper : **1875**

Unique Paper Code : **42161101** **GC-3**

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

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

Semester : **I**

Duration : **3 Hours** Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt *Five* questions in all.

Question Nos. **1** and **6** are compulsory.

All parts of a question must be answered together.

Draw well-labelled diagrams wherever necessary.

1. (*a*) Define the following (any *five*) : 5×1=5

(*i*) Glycocalyx

(*ii*) Zygospore

(*iii*) Capsomere

(*iv*) Heterocyst

(*v*) Dwarf male

(*vi*) Conceptacle

P.T.O.

(*vii*) Calyptra

(*viii*) Megasporophyll

(*ix*) Isidia

(*x*) Cleistothecium.

(*b*) Fill in the blanks (any *five*) : 5×1=5

(*i*) Bread mold is the common name of ..... .

(*ii*) Nucleic acid in TMV is ..... .

(*iii*) Rhizoids in *Funaria* are branched and septate, and septa are found ..... placed.

(*iv*) *Chlamydomonas* contains ..... shaped chloroplast.

(*v*) ..... are the channel proteins present in the cell wall of Gram –ve bacteria.

(*vi*) Winged pollen grains occur in gymnosperm ..... .

(*vii*) Horsetail is the common name of ..... .

(*c*) Match the following : 5×1=5

(*i*)	*Marchantia*	(*a*)	Resin canals
(*ii*)	*Alternaria*	(*b*)	Reticulate chloroplast
(*iii*)	*Pinus*	(*c*)	Gametophore
(*iv*)	*Selaginella*	(*d*)	Multicellular conidia
(*v*)	*Oedogonium*	(*e*)	Rhizophore

2. Differentiate the following (any *five*) : 5×3=15

(*a*) Homoiomerous and Heteromerous lichen thallus

(*b*) Perithecium and Apothecium

(*c*) Rhizoids of *Marchantia and Funaria*

(*d*) Clamps and crozier formation

(*e*) Mega- and Microsporangium in *Selaginella*

(*f*) Simple conjugation and Hfr conjugation

(*g*) *Ectomycorrhiza* and *Endomycorrhiza.*

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

(*a*) V.S. Gill of *Agaricus*

(*b*) L.S. Sporophyte of *Funaria*

(*c*) E.M. Non-photosynthetic Bacterial cell

(*d*) T.S. Needle of *Pinus*

(*e*) L.S. Ovule of *Cycas.*

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

(*a*) Gametangial copulation in *Rhizopus*

(*b*) Generalized transduction in bacteria

(*c*) Spermatisation in *Puccinia*

(*d*) Alternation of generation in bryophytes

(*e*) Heterospory in Pteridophytes.

5. Answer any *three* : 3×5=15

(*a*) Define stele. Describe the stelar evolution in pteridophytes with suitable diagrams.

(*b*) Describe various stages in the life cycle of *Puccinia graminis tritici* found on secondary host with the help of suitable diagrams.

(*c*) Illustrate the life cycle of the macrandrous species of *Oedogonium*.

(*d*) Describe the adaptations that are acquired by land plants to survive in terrestrial habitat.

6. Attempt any *five* : 5×3=15

(*a*) Lichens are the pioneers of forest ecosystem. Justify the statement. Give *two* examples of saxicolous lichens associated with the forest ecosystem succession.

(*b*) Name the group of bacteria considered to be the producer of majority of the available antibiotics. Name any *two* bacteria and antibiotics produced by them belonging to this group.

(*c*) Name a moss studied by you which is an important source of a fossil fuel. Give the name of the product and write very briefly about the conditions responsible for its formation.

(*d*) Write a short note on the application of mycorrhizae in agriculture.

(*e*) Write any *three* important uses of *Cycas*.