Seat No. : _____

MD-108

May-2018

B.Sc., Sem.-IV

CC-204 : Microbiology

(Microbial Biodiversity)

Time : 3 Hours] **[Max. Marks : 70**

Instructions : (1) **All** questions carry equal marks.

(2) Figures on right indicates marks.

(3) Draw neat and clean diagrams wherever necessary.

1. Answer the following questions : (any **two**) **14**

   (a) Describe various levels of biodiversity.

   (b) Give a detailed account on the origin of life in the light of chemical evolution.

   (c) Discuss any two values of Biodiversity.

   (d) Draw and discuss the universal Phylogenetic tree with specific emphasis on the comparison of the three domains of life.

2. Write on the following questions : (any **two**) **14**

   (a) Discuss the nutritional diversity among bacteria based on carbon and energy sources.

   (b) Discuss the gaseous requirements and selective growth conditions for the study of microbial diversity.

   (c) Write a descriptive note on Mol % G+C content.

   (d) Discuss : DNA-DNA hybridization.

3. Write on the following questions : (any **two**) **14**

   (a) Explain the diversity among bacteria based on the cell shape and arrangement.

   (b) Compare and contrast: the cell membrane of Bacteria and Archaea.

   (c) Discuss the metabolic and physiological diversity among phototrophs.

   (d) Discuss the microbial diversity in extreme environments.

4. Answer the following questions : (any **two**) **14**

(a) Write a note on metabolic characters of algae.

(b) Describe the morphological and cellular characteristics of protozoa.

(c) Discuss in brief : Ecology of fungi.

(d) Describe the general characters of viruses.

5. Answer in **one** word/**one** or **two** lines : **14**

(1) What are "biodiversity hotspots" ?

(2) What is speciation ?

(3) Name any two antibiotic producing bacteria along with the names of antibiotics produced by them.

(4) Enlist the types of electron microscopy techniques.

(5) What is 16 S rRNA ?

(6) Enlist different categories of bacteria on the basis of pH requirement.

(7) Enlist any 2 locations of spore found inside the bacteria.

(8) What are Thermophiles ?

(9) Name any two Halophiles.

(10) What is endosymbiosis ?

(11) Which polysaccharide is present in the cell wall of most fungi ?

(12) Enlist the morphological types of lichens.

(13) Give name of any one slime mold.

(14) What are prions ?

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