M.Sc. Examination, 2018

Semester – II

Biotechnology

Core Course-VI

(Microbiology)

Time: 3 Hours **Full Marks: 40**

Questions are of value as indicated in the margin.

Answer ***any four*** questions

1. Outline classification of different eubacteria as per Bergey's manual. Describe how phylogeny of eubacteria determined through 16S rRNA gene sequencing. 4+6=10
2. Describe the structure and composition of cell wall of Gram positive bacteria and cyanobacteria and point out the differences. Give a note on the structural alterations occur in heterocysts to fix nitrogen. 4+2+4=10
3. Give an account of Actinomycetes, their classification and morphological features. Describe their beneficial and harmful properties. 3+3+4=10
4. Write notes on ***any two*** of the following: 5×2=10
   (a) Different modes of nutrition in Bacteria.
   (b) Fingerprinting of environmental samples through DGGE.
   (c) Salient features of Archaea and characteristics of thermophiles.
5. Distinguish between the following with examples: 2×5=10
   (a) Toxicity and invasiveness.
   (b) Endotoxins and enterotoxins.
   (c) Antibiotics and anti-fungal drugs.
   (d) Virulence and pathogenesis.
   (e) Epidemic and pandemic.
6. Write brief notes on ***any four*** of the following: 2.5×4=10
   (a) Preparation of PDA medium and its use.
   (b) Synchronous culture and how to achieve it.
   (c) Photosynthetic ETS in purple and green bacteria.
   (d) Disease reservoirs with examples.
   (e) Marine Macro-algae and their use.
   (f) Five diseases of crop plant caused by Fungi.

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