

M.Sc. (Microbiology) (NEP Pattern) Semester-I
NEP-71 / 01MSCMB01-Paper-I : Microbial Diversity and Evolution

P. Pages : 1

Time : Three Hours



GUG/W/23/15125

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw diagram wherever necessary.

1. Describe Ribosomal RNA sequencing as a method for determining evolutionary relationship. **16**

OR

Write notes on:

- a) Derivation of Microbial phylogeny on the basis of classical taxonomy. **8**
b) Evolution of earth and early life forms. **8**
2. Discuss in detail heat stable biomolecules, characteristics and applications. **16**

OR

- a) Discuss the characteristics of Halophilic Archaea. **8**
b) Describe the differentiating features of sulfolobales and desulfolobales. **8**
3. Describe in detail the characteristics of sulphur and iron oxidizing bacteria with their ecological role. **16**

OR

Write notes on:-

- a) Nutritional importance of Cyanobacteria. **8**
b) Extremely acidophilic members of Verrucomicrobia. **8**
4. Describe in detail three hyperthermophilic phyla of bacteria with suitable examples. **16**

OR

- a) Discuss about Cytophage as a causative agent of Columnaris disease. **8**
b) Add a note on industrial importance of Green Sulphur bacteria (GSB). **8**
5. Write short notes on:
- a) Evolutionary Chronometers. **4**
b) Autotrophy in Archea. **4**
c) Free living N₂ fixing bacteria. **4**
d) Arsenic resistant bacteria. **4**
