

M.Sc. (Microbiology) (CBCS Pattern) Sem-I  
**PSMBT-101 - Paper-I : Microbial Diversity & Evolution**

P. Pages : 1

Time : Three Hours



**GUG/W/22/11171**

Max. Marks : 80

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

- 1.** Discuss different methods for determining evolutionary relationships. **16**  
**OR**
- a) Write short note on characteristics of domain of life. **8**
- b) Write a note on bacterial speciation. **8**
- 2.** Specify whether archaea bacteria are heterotroph or autotroph? Discuss carbohydrate metabolism in archaea. **16**  
**OR**
- a) Write the evolutionary significance of hyperthermophiles. **8**
- b) Write short note on thermoproteales. **8**
- 3.** How sulphur reducing bacteria use sulphur? Are these bacteria harmful? **16**  
**OR**
- a) How cyanobacteria use their energy? **8**
- b) Write down characteristics of planctomycetes. **8**
- 4.** Write characteristics of green sulphur bacteria? How does these bacteria perform photosynthesis? **16**  
**OR**
- a) Discuss in detail branching hyperthermophiles. **8**
- b) Write in short general metabolism in nitospira. **8**
- 5.** Write short note on.
- a) Ribosomal RNA sequencing. **4**
- b) Evolutionary significance of hyperthermophiles. **4**
- c) Verrucomicrobia **4**
- d) Deinococcus **4**

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