



Seat No. : \_\_\_\_\_

# MM-205

May-2025

B.Sc., Sem.-IV

MI-204 : Microbiology

Time : 2:30 Hour]

[Max. Marks : 70

- Instructions :**
- (1) All questions are compulsory.
  - (2) Figures on right side indicate marks.
  - (3) Mention correct question number against the answer.
  - (4) Draw figure wherever necessary.

1. (A) Explain in detail cell wall and cell membrane of archaebacteria. 14

**OR**

1. (A) Write general characteristics of thermophiles. 7  
(B) Explain general characteristics of methanogens. 7

2. (A) What are the major characteristics of oxygenic photosynthetic bacterial genus *Cyanobacterium* ? 14

**OR**

2. (A) Explain nitrifying bacteria *Nitrobacter* in detail. 7  
(B) Write a note on colorless sulphur bacteria. 7

3. (A) Write a note on gram-negative curved bacteria *Bdellovibrio*. 14

**OR**

3. (A) Write a note on gram-negative spiral bacteria *Spirochetes*. 7  
(B) Write a note on *Chlamydiaceae* group of bacteria. 7

4. (A) Write a note on gram-positive micrococcaceae *Staphylococcus*. 14

**OR**

4. (A) Explain filamentous bacteria of genus *Frankia* with examples. 7  
(B) Write a note on morphological characteristics of gliding bacteria with example. 7

5. Answer Any **Seven**.

**14**

- (1) Enlist two coenzymes required for methanogenesis with proper functions in methanogens.
  - (2) Write two functions of bacteriorhodopsin.
  - (3) Write two characteristics of archeal ribosome.
  - (4) Write example of iron bacteria and magnetotactic bacteria.
  - (5) Write two distinct features of genus *Nitrobacter*.
  - (6) Write any two differences between purple sulphur and purple non-sulphur bacteria.
  - (7) Give two examples of gram-negative curved bacteria.
  - (8) Which microorganisms are responsible for gonorrhoea and cholera ?
  - (9) Write two distinct features of *Rickettsia*.
  - (10) Write the genus and species of radiation absorbing bacteria.
  - (11) Give two examples of spore forming bacteria.
  - (12) Give two examples of gram-positive irregular rods.
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