



Seat No. : _____

NH-124

November-2025

B.Sc., Sem.-V

**DSC-M-MIC-354 T : Microbiology
(Introduction to Microbial Growth & Metabolism)**

Time : 2 Hours]

[Max. Marks : 50

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

1. Explain with diagram the phases of normal growth curve of bacteria. **10**

OR

- (A) Discuss facilitated diffusion in bacteria. **5**
(B) Describe various components of media. **5**

2. Classify the bacteria on basis of their oxygen requirements. **10**

OR

- (A) What are halophiles ? Explain. **5**
(B) Classify microorganisms on the basis of pH. **5**

3. Discuss EMP pathway in detail. **10**

OR

- (A) What is substrate level phosphorylation ? Explain. **5**
(B) Write a note on anaerobic respiration. **5**

4. Explain Glyoxylate pathway. **10**

OR

- (A) Write a note on Gluconeogenesis. **5**
(B) Describe Calvin cycle for CO₂ fixation. **5**

5. Give short and specific answers in **1-2** lines only (any **10** out of **12**) :

10

- (1) Name any enrichment medium.
 - (2) Name any selective medium.
 - (3) Name two methods of reproduction in bacteria.
 - (4) What are xerophiles ?
 - (5) Write an example of thermophiles.
 - (6) What are psychrotrophs ?
 - (7) Write full form of TCA.
 - (8) Name organism having ED as glycolytic pathway.
 - (9) Name any two components of ETC.
 - (10) What is the role of anaplerotic reaction ?
 - (11) Name genera of nitrogen fixing bacteria.
 - (12) Write name of nitrifying micro-organism.
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