

**M.Sc. 1st Semester Examination, 2024**

**MICROBIOLOGY**

( *Microbial Metabolism* )

PAPER — MCB-108

*Full Marks : 25*

*Time : 1 hour*

**Answer all questions**

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

**GROUP — A**

Answer any **two** questions from the following :

2 × 2

- 1. Mention key regulatory enzymes of Glycolysis pathway.**

( Turn Over )

( 2 )

2. How many NADP will produce during one TCA cycle ?
3. What is the utility of glyoxalate pathway ?
4. State the importance of Pentose phosphate pathway.

**GROUP – B**

Answer any **two** questions from the following :

4 × 2

5. Differentiate eukaryotic and prokaryotic photosynthesis.
6. Schematically describe the process of fatty acid biosynthesis in microbial system.
7. Write short note on :
  - (a) “nif gene”
  - (b) Gluconeogenesis.

( 3 )

8. Compare the characteristics of photoheterotroph and chemoautotrophs.

GROUP – C

Answer any **one** question from the following :

8 × 1

9. Mention the process of biological N<sub>2</sub> fixation.

Give the short note on polyglycans.

6 + 2

10. Mention the process of 'Entner-Doudoroff' pathway. Write the metabolic importance of acetyl CoA.

4 + 4

[ Internal Assessment – 5 Marks ]

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