



RAN-2103000205021053

T.Y.B.Sc. (Sem.-V) Examination October - 2025

Bioscience (Microbiology) (OLD) : Microbial Metabolism (BS - 503)

Time: 2 Hours]
[Total Marks: 50
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Figures to the right indicate full marks.
- (3) Draw neat & clean diagram wherever necessary.

Seat No.:

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Student's Signature

Q.1. Multiple choice questions:
8

1. Single molecule of glucose generates _____ molecules of acetyl CoA. which enters the Krebs cycle.
 - a. 4
 - b. 3
 - c. 2
 - d. 1
2. Acetyl CoA is formed from pyruvate by _____ reaction
 - a. Dehydration
 - b. Reduction
 - c. Oxidative decarboxylation
 - d. Dephosphorylation
3. Conversion of xylulose 5-phosphate to ribulose 5-phosphate is catalyzed by _____.
 - a. Phosphopentose epimerase
 - b. Transaldolase
 - c. Transketolase
 - d. Phosphopentose isomerase
4. Chemoorganotrophic fueling process includes _____.
 - a. Aerobic respiration
 - b. Anaerobic respiration
 - c. Fermentation
 - d. All
5. What is transamination?
 - a. Removal of amino group
 - b. Removal of carboxyl group
 - c. Removal of nitro group
 - d. None
6. The process of fermentation is _____.
 - a. Aerobic
 - b. Anaerobic
 - c. Both aerobic & anaerobic
 - d. None

7. Urea cycle starts with _____
- CO_2
 - NH_3
 - CO_2 & NH_3
 - None
8. Which is the first step of glycogenesis?
- Glucose to glucose 6 - P
 - Glucose to glucose 1 - P
 - Glucose to glucose 3 - P
 - None

Q. 2 A. Answer as directed: **4**

- Give the example of electron carrier & hydrogen acceptor.
- Enlist enzymes involved in reductive TCA cycle.
- Explain: Decarboxylation
- What is amphibolic pathway?

B. Write short note on (Any Two) **10**

- Anaerobic respiration.
- Glycogenesis
- Nitrification.

Q.3. Answer the following questions. **14**

- Describe in Glyoxylate cycle.
- Entner-Doudoroff pathway.

OR

Q.3. Explain in detail an anaerobic respiration with special reference to fermentation **14**

Q.4. Explain in detail how glucose is oxidized. **14**

OR

Q.4. Answer the following questions. **14**

- Explain in brief types of fermentation
- Describe in brief components of ETC.
