

2203000205026003
EXAMINATION FEBRUARY-MARCH 2024
BACHELOR OF SCIENCE (FIFTH SEMESTER)
MICROBIOLOGY-XIII (MB-503-MICROBIAL METABOLISM)
LEVEL-2

[Time: As per schedule]

[Max. Marks: 50]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination : **BACHELOR OF SCIENCE (FIFTH SEMESTER)**
 - b. Name of the Subject : **MICROBIOLOGY-XIII (MB-503-MICROBIAL METABOLISM) LEVEL 2**
 - c. Subject Code No : **2203000205026003**
2. Sketch neat and labelled diagram wherever necessary.
 3. Figures to the right indicate full marks of the question.
 4. All questions are compulsory.

Seat No:

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Student's Signature

Q.1 Give Specific answers.

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- a. Give two examples of high energy molecules.
- b. Mention any two phototrophic bacteria.
- c. Which high energy molecular is synthesized as a result of oxidative phosphorylation?
- d. What is the location of Calvin-Benson cycle in cyanobacteria?
- e. True or False: Many enzymes are used for both catabolic and anabolic processes in pathways.
- f. What are the pathways for glucose to pyruvate conversion?
- g. Mention electron acceptors for chemolithotrophic bacteria.
- h. How is equilibrium constant denoted?

Q.2 Explain/comment on any two of the following.

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- a. The larger the ΔE° , the greater the amount of free energy made available.
- b. Many chemolithotrophs perform reverse electron flow.
- c. Fermentation does not involve ETC.

Q.3 Discuss any two of the following.

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- a. Discuss the principles by which biosynthetic pathways are organized.
- b. Explain TCA cycle in detail.
- c. Compare and contrast anoxygenic phototrophy and oxygenic photosynthesis.

Q.4 Write short notes on any two of the following.

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- a. The relationship of $\Delta G_0'$ to the equilibrium of reactions
- b. Protein catabolism
- c. Dark reactions in phototrophs
