

Microbiology [Honours]

[CBCS]

B.Sc. Third Semester End Examination-2023

(Regular & Supplementary Paper)

PAPER-C5T

[Microbial Physiology and Metabolism]

Full Marks: 40

Time: 02 Hrs

The figures in the right hand margin indicate marks

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

Illustrate the answers wherever necessary

Group A

Answer any FIVE questions of the following: 5x2= 10

1. What is barophiles? Give one example.
2. What is the difference between hexokinase and glucokinase.
3. Why is pentose phosphate pathway called a bypass pathway?
4. Differentiate between aerobic and anaerobic respiration.
5. What is homolactic fermentation?
6. State two anabolic role of TCA cycle.
7. State the importance of phosphofunctokinase.
8. Differentiate between symport and antiport.

Group B**Answer any FOUR questions of the following: 4x5 = 20**

1. Explain oxygenic photosynthesis with suitable diagram. 5
2. What is methanogenesis? Write the importance of pentose phosphate pathway. 2+3
3. Write short note on
 - i) green sulphur bacteria
 - ii) feed back inhibition 2½+ 2½
4. What are the different factors that are responsible for bacterial growth? State the characteristics of all the phases.
5. Explain the mechanism of group translocation with suitable diagram. 5
6. What is pasture effect? Differentiate between linear and branched fermentation pathway. 2+3

Group C**Answer any ONE question of the following: 1x10 = 10**

1. With suitable diagram explain the mechanism of mitochondrial electron transport chain and oxidative phosphorylation. Write briefly about the oxidative steps of TCA cycle. 5+5
 2. What is diauxic growth? Classify microbes on the basis of temperature requirement of their growth. State the mechanism of nitrogen fixation by bacteria. 2+3+5
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