

BACHELOR OF SCIENCE (CBCS-2018 COURSE)
S. Y. B. Sc. Sem-III :SUMMER- 2022
SUBJECT : MICROBIOLOGY : MICROBIAL METABOLISM

Day : Tuesday
Date : 5/7/2022

S-18359-2022

Time : 03:00 PM-06:00 PM
Max. Marks : 60

N.B.:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.

Q.1 Attempt **ANY TWO** of the following: **[12]**

- a) Give an outline of EMP pathway and give its significance in anaerobic processes.
- b) Describe physico-chemical properties of enzymes.
- c) Giving suitable examples discuss various approaches for nomenclature of enzymes.

Q.2 Attempt **ANY TWO** of the following: **[12]**

- a) With the help of suitable diagram, explain 'Induced Fit Hypothesis'.
- b) Discuss hydrogen carriers involved in the electron transport chain of bacteria.
- c) Explain the investigation of active site of enzymes, using 'Trapping of enzyme substrate complex' method.

Q.3 Attempt **ANY TWO** of the following: **[12]**

- a) Give biological significance of enzymes.
- b) Justify the statement that, 'Though other high energy compounds are available, bacteria prefers ATP'.
- c) Comment on 'Bacterial photosynthesis'.

Q.4 Write short notes on **ANY THREE** of the following: **[12]**

- a) Substrate level phosphorylation
- b) Lock and Key hypothesis
- c) Anaplerotic nature of TCA cycle
- d) Passive diffusion

Q.5 Attempt **ANY FOUR** of the following: **[12]**

- a) Explain acid-base catalysis of enzymes.
- b) Describe facilitated diffusion in bacteria.
- c) Explain the significance of purple membrane in *Halobacterium*.
- d) Give any two names of bacteria following 'Entner Doudoroff pathway'. Comment on significance of the pathway.
- e) Giving suitable examples explain 'Group specificity', 'Absolute specificity' and 'Optical specificity' of enzymes.
- f) Explain the use of any two chemical compounds for the investigation of active site of chymotrypsin.

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