

**S.Y.B.SC. SEM – III (CBCS - 2016 Course) : SUMMER - 2019**  
**SUBJECT: MICROBIOLOGY: MICROBIAL METABOLISM**

Day : **Saturday**  
Date : **20/04/2019**

**S-2019-0831**

Time : 03.00 P.M. To 06.00 P.M  
Max. Marks : 60

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**N. B. :**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
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**Q.1** Attempt **Any Two** of the following: (12)

- a) Explain the energy production by anaerobic bacteria through 'EMP pathway'.
- b) Discuss the investigation of active site using 'Trapping of Enzyme substrate complex'.
- c) Describe physicochemical properties of an enzyme.

**Q.2** Attempt **Any Two** of the following: (12)

- a) Explain generation of ATP through 'Electron Transport Chain'.
- b) Comment on 'Bacterial photosynthesis'.
- c) Discuss the properties and significance of 'allosteric enzymes'.

**Q.3** Attempt **Any Two** of the following: (12)

- a) Discuss any two theories of enzyme catalysis.
- b) What is reducing power? Give its significance in bacterial metabolism.
- c) Justify the statement that 'Tricarboxylic Acid cycle is anaplerotic in nature'.

**Q.4** Write short notes on **Any Three** of the following: (12)

- a) Lock and Key hypothesis
- b) Facilitated Diffusion
- c) Purple membrane in *Halobacterium*.
- d) Hydrogen carriers of electron transport chain

**Q.5** Attempt **Any Four** of the following: (12)

- a) Enlist the factors which make ATP as a preferential energy source by bacteria.
- b) Give four uses of microbial enzymes.
- c) Discuss the effect of pH on enzyme activity.
- d) Giving suitable examples explain absolute specificity & group specificity of enzymes.
- e) Comment on 'Group Translocation'.

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