

**FACULTY OF SCIENCE**

**B.Sc. (CBCS) III - Semester Examination, November/December 2019**

**Subject: Biochemistry (Bioenergetics Biological Oxidations and Enzymology)**

**Paper : III (DSC)**

**Time: 3 Hours**

**Max. Marks: 80**

**Part - A (5x4 = 20 Marks)**

**(Short Answer Type)**

**Note: Answer any FIVE of the following questions.**

1. Free energy concept.
2. Substrate level phosphorylation.
3. Uncouplers.
4. Ultra structure of Chloroplast.
5. Active site.
6. Methods of enzyme purification.
7. Zymogen activation with a suitable example.
8. Michaelis – Menton equation for single substrate reaction.

**Part - B (4x15 = 60 Marks)**

**(Essay Answer Type)**

**Note: Answer ALL the following questions.**

9. (a) Discuss the structure and function of all the types of cytochromes with suitable diagrams.

**OR**

- (b) (i) High energy compounds.  
(ii) Phosphate group Transfer potential.

10. (a) Explain the Ultrastructure of mitochondria and electron transport chain with carriers involved in it.

**OR**

- (b) Describe the cyclic and non-cyclic photophosphorylation.

11. (a) Write about nomenclature and classification of enzymes.

**OR**

- (b) (i) Enzyme specificity.  
(ii) Explain the interaction between enzyme and substrate with suitable models.

12. (a) Define enzyme inhibition. Write about different types of reversible and irreversible enzyme inhibitions.

**OR**

- (b) Describe the regulation of enzyme activity with allosterism and cooperativity and add a note on ATCase as an allestemic enzyme.

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