

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
B.Sc. Examination, Summer 2017-18

Semester: 2
Subject Code: 11103153
Subject Name: Enzymology and Bioenergetics

Date: 16/05/2018
Time: 10:30 am to 1:00 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type (08)**
 Derive Michaelis-Menten equation.
- Q.1. B) Answer the following questions (Any two) (04)**
- (a) Brief note (2x2) (04)
1. ATP Structure
 2. Enzyme Turnover Number
- (b) Short note on Structure and function of NAD (04)
- (c) Explain Induced fit hypothesis of enzyme specificity (04)
- Q.2. A) Answer the following questions. (04)**
- (a) Do as directed: (04)
1.is the Unit of enzyme activity
 2. Define Redox Potential
- (b) What are the factors affecting enzyme activity? Explain any two (04)
- Q.2. B) Answer the following questions (Any two) (03)**
- (a) Define: (03)
1. Gibbs free Energy
 2. Entropy
 3. Enthalpy
- (b) Describe the role of C and N in biological systems (03)
- (c) Contrast Ionic v/s Covalent bonds (03)
- Q.3. A) Essay type (08)**
 Describe weak interactions in detail and mention their role in stabilizing the biomolecules?
- Q.3. B) Answer the following questions (Any two) (04)**
- (a) Brief note (2x2) (04)
1. Equilibrium Constant
 2. Electronegativity
- (b) Differentiate between first order and second order reactions (04)
- (c) Explain why ATP is called as Energy Currency of the cell? (04)
- Q.4. A) Answer the following questions. (04)**
- (a) Describe how enzymes are classified? (04)
- (b) How can you determine feasibility of a reaction? (04)
- Q.4. B) Answer the following questions (Any two) (03)**
- (a) List the properties of Enzymes (03)
- (b) Mention the Laws of Thermodynamics (03)
- (c) Explain Lock and Key Model of Enzymes (03)