

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc., Winter 2017-18 Examination

Semester: 2
Subject Code: 11203152
Subject Name: Enzyme Technology

Date: 05/01/2018
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/ Brief note. (08)**
 (a) Discuss Feed back inhibition & Feed forward Stimulation.
 (b) Discuss the mechanism of Enzyme regulation.
- Q.1. B) Answer the following questions (Any two)**
 (a) Short note. (04)
 1. Define K_m & V_{max} ? How can they measured?
 2. What do you know about induced fit hypothesis?
 (b) What is Co-operativity phenomenon? Explain with suitable example (04)
 (c) Explain the role of multienzyme complexes in the regulation of metabolic pathways (04)
- Q.2. A) Answer the following questions.**
 (a) Short note. (04)
 1. Allosteric interactions on control of enzymes.
 2. Explain the mechanism of action of serine proteases, Trypsin.
 (b) Write a note on rotational catalysis-ATPase (04)
- Q.2. B) Answer the following questions (Any two)**
 (a) Short note. (03)
 1. Distinguish between lyases & ligases.
 2. Analytical Applications of enzymes
 3. Metal-ion catalysis
 (b) Why is chymotrypsin most active at pH8? Explain its mechanism. (03)
 (c) Explain Line Weaver Burk plot, Eadie-Hofstee plot and Hanes plot (03)
- Q.3. A) Essay type/ Brief note. (08)**
 (a) What are the different factors that affect velocity of enzyme catalyzed reactions?
 (b) Write a note on classification of enzyme with examples
- Q.3. B) Answer the following questions (Any two)**
 (a) Short note. (04)
 1. Differentiate between coenzyme & cofactors
 2. Competitive Inhibition of Enzyme
 (b) Write short notes on (a) Ribozymes, (b) Abzymes, (04)
 (c) Enlist models of enzyme specificity. Discuss them in details (04)
- Q.4. A) Answer the following questions.**
 (a) Short note. (04)
 1. Discuss non-competitive & Uncompetitive inhibition
 2. Derive Michaelis Menten equation & K_m value based on Briggs-Halden approach
 (b) Discuss the role of vitamins as coenzymes? (04)
- Q.4. B) Answer the following questions (Any two)**
 (a) Short note. (03)
 1. What are enzymes? Why are they called Biocatalyst?
 2. Define Katal and International Unit
 3. What is the significance of active site in enzymatic reaction?
 (b) What are isoenzymes? Explain with examples. (03)
 (c) Explain the mechanism of action of pyruvate dehydrogenase complex (03)