

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2022 - 23 Examination

Semester: 4**Subject Code: 203144255****Subject Name: Enzymology and Enzyme Technology****Date: 24/03/2023****Time: 2:00pm to 4:30pm****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 Objective Type Questions - (Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (All are compulsory) (Each of one mark) (15)

1. What is turn over number?
2. Define enzyme.
3. The enzyme hexokinase can be categorized in _____
 - A. Isomerase
 - B. Lyase
 - C. Transferase
 - D. Hydrolase
4. What is the shape of the graph when enzyme activity is plotted against substrate concentration?
5. What is prosthetic group?
6. Define coenzyme.
7. Give an example of enzyme mediated reaction.
8. What do understand by enzyme denaturation?
9. Name any two enzymes used in brewing industry.
10. Mention any example of allosteric enzyme.
11. List any two characteristics of Enzyme.
12. Which of the following inhibition is exhibited by Aspartate Transcarboxylase?
 - A. Competitive
 - B. Uncompetitive
 - C. Mixed
 - D. Allosteric
13. What is covalent catalysis?
14. Show Michaelis Mentan equation.
15. Name one protein digesting enzyme.

Q.2 Answer the following questions. (Attempt any three) (15)

- A) Derive the Michaelis-Menten equation for V_{max} calculation.
- B) Write the equation for Line Weaver Burk plot and draw the double reciprocal graph for enzyme kinetics.
- C) Describe all the categories of enzyme classification as given by enzyme commission. Also, cite an example for each category.
- D) Explain the fluidized bed bioreactor along with its diagrammatic representation.

Q.3 A) Differentiate between Competitive and Non-Competitive Inhibition. (07)

B) Explain the mechanism of allosteric inhibition with the help of graph. Cite any example for it. (08)

OR

B) Explain the functioning of CSTR bioreactor along with its diagram layout. (08)

Q.4 A) Elaborate the stepwise processes that are carried out in tanning industry with reference to the application of different enzymes. (07)

OR

A) Elaborate the stepwise processes that are carried out in Juice industry with reference to the application of different enzymes. (07)

B) How are enzymes involved in different processes of textile industries? (08)