JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATIONS-2022

B.Tech-VII Semester (BT)

COURSE CODE (CREDITS): 18B1WBT733(3)

MAX. MARKS: 15

COURSE NAME: Industrial Enzymes Technologies

COURSE INSTRUCTOR: Dr. Saurabh Bansal

MAX. TIME: 1 Hour

Note: All questions are compulsory. Marks are indicated against each question in square brackets.

CO-I

1. How an apoenzyme is different from holoenzyme? [1]

2. Differentiate between Competitive and Classic Non-competitive Reversible Inhibition. [2]

3. What do you understand by Enzyme specificity? Explain its types with suitable examples. [3]

CO-II

4. A kinetics experiment was performed for a particular enzyme with two different substrates A and B. The data collected were used to draw a Lineweaver-Burk plot as shown below:
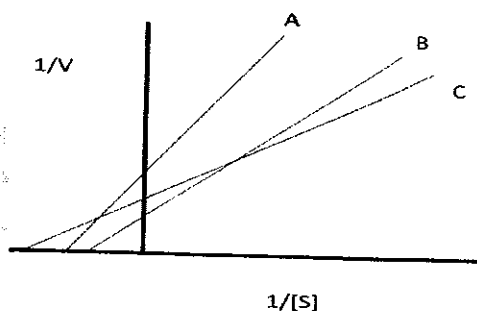
a) Which Enzyme-substrate pair has a higher K_m value? Explain. [1]
b) For which substrate enzyme shows higher V_{max} value? Explain. [1]
c) Assuming the same amount of enzyme was used in both experiments, with which substrate does the enzyme attain the highest catalytic efficiency? Explain your answer. [1]

CO- III

5. a) An enzyme mixture contains three different enzymes with a molecular weight 80, 140 and 200 kDa. How will you purify each enzyme from the mixture? [2]

b) How will you confirm whether the enzyme is purified or not? Mention at least two methods for confirming the same. **[2]**

6. Gout refers to an increase in uric acid concentration in blood. How can you treat gout by enzyme inhibition? Give the suitable reaction. **[2]**