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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT  
TEST -3 EXAMINATION, December 2018

B.Tech VII<sup>th</sup> Semester(BT/BI)

Course Code: 11B1WBT833  
Course Name: Industrial Enzymes  
Course Credits: 03

MAX. MARKS: 35

MAX. TIME: 2 Hrs

*Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Marks are indicated in square brackets against each question*

**Q 1** Define the following terms and write their units. (1×3= 3 marks) **CO- I**

(a)  $K_{cat}$  (b)  $K_m$  (c)  $V_{max}$

**Q2** Explain the mechanism of acid base catalysis. Give two examples. (2) **CO- II**

**Q3** What are co-immobilized enzymes? Discuss the applications of immobilized enzymes. (2) **CO- IV**

**Q4** What is the importance of line-weaver burk plot in enzyme kinetics? Explain its advantages. (3) **CO- III**

**Q 5** What is enzyme inhibition? Explain the kinetics of mixed inhibition of enzyme with example. (3) **CO-III**

**Q6** Write an essay on saccharification enzymes. Give two examples with their industrial uses. (3) **CO-IV**

**Q7** Discuss the mechanism of catalysis for carbonic anhydrase. What are the industrial applications of microbial carbonic anhydrase? (4) **CO-IV**

**Q8** Why the intracellular enzymes are more difficult to isolate than extracellular ones? Discuss the various techniques to extract the intracellular enzymes. (5) **CO-V**

**Q9** Discuss the basic methodology of directed evolution of enzymes. Give the applications of directed evolution of enzymes. (5) **COV**

**Q10** Discuss the two examples of thermozymes and their source organisms. What are the structural features of an enzyme that decide its thermo-stability? (5) **CO VI**