Shahjalal University of Science and Technology
Department of Biochemistry and Molecular Biology
Course: BMB 221 (Enzymology-I), Term test-II
Time-60 min, Full Marks-20

1. Why do high pH optima is necessary for β1 Alcohol Dehydrogenase (ADH) as compare to β2 and β3 form? 4

2. What is K_m? Derive the definition of K_m from Michaelis-Menten equation? 3

3. In an experiment, with [Et] of 4 nM, the observed V_{max} is 1.6 μM s^{-1}. What is the value of k_{cat}? 3

4. The K_m of a reaction is 5 mM. After using of an inhibitor of 6 mM, the apparent K_m is 10 mM, without any change in V_{max}. What type of inhibitor is this and calculates K_I? 3

5. Describe the use of enzyme inhibitor in the treatment of following complications- 4
   (i) Methanol toxicity (ii) Myasthenia gravis

6. The blue curve (pointing by slope) was obtained in the absence of inhibitor. What type of plot this is? Which of the other curves (A, B, or C) shows the activity when a competitive inhibitor is added to the reaction mixture? 3