JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

M.Sc.-II Semester (MB)

COURSE CODE (CREDITS): 20MS1MB211 (03) MAX. MARKS: 15

COURSE NAME: Enzymes & Bioprocess Technology

COURSE INSTRUCTOR: Dr. Saurabh Bansal MAX. TIME: 1 Hour

Note: *(a) All questions are compulsory.*

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculators is not allowed

Q. No.	Question	Marks
Q1	a) Differentiate between enzyme and inorganic catalyst?	2
	b) Whether the statement "Enzymes only fasten the rate of reaction, but do not alter the equilibrium point." is correct? Provide a justification with suitable reasoning.	2
Q2	Explain how temperature and pH influence the enzyme activity with suitable reasons.	3
Q3	Suppose an enzyme A has a Km of 0.1 for substrate (X) while another enzyme B has a Km of 0.01 mM for the same substrate. Which enzyme would you prefer for setting up a reaction? Justify your choice with reasons.	2
Q4	In competitive inhibition, what happens to Vmax and Km, when the inhibitor concentration [I] equals the inhibition constant (Ki)?	2
Q5	a) What do you understand by reversible inhibition? List the different types.	1
	b) Illustrate each type with a self-explanatory Lineweaver-Burk (LB) Plot.	2
Q6	In an experiment, enzyme 'A' loses its activity when incubated with Diisopropylphosphofluridate (DIPF), whereas enzyme 'B' sustains its activity. How would you interpret this observation in terms of enzyme structure and function?	1

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