

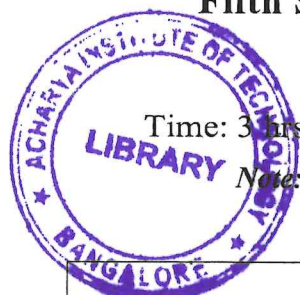
Fifth Semester B.E./B.Tech. Degree Examination, June / July 2026

Enzyme Technology + Lab

Time: 3 hrs.

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.*



Module – 1			M	L	C
Q.1	a.	In a Transferases enzyme reaction, a reactant (A) has carboxyl group which has been reacted with pyruvate and produce a product of (B) with oxaloacetate.			
		i) Define the name of Reactant (A) and Product (B)	04	L2	CO1
		ii) Write the E.C. number for the above reaction	04	L2	CO1
		iii) Define the name of the enzyme involved in the reaction.	02	L2	CO1
	b.	Illustrate the mechanism of action of enzyme action with neat chemical reaction. i) Acid –base ii) Covalent Interactions iii) Metal ion catalysis iv) Entropy effects	10	L2	CO1
OR					
Q.2	a.	Illustrate the mechanism of action of co-enzymes i) Coenzyme A ii) TPP, and (Biotin) by using chemical reaction.	10	L2	CO1
	b.	Illustrate about the various chromatographic mechanisms involved on purification of enzymes with neat diagram.	10	L2	CO1
Module – 2					
Q.3	a.	Write the advantages of Immobilized enzymes over free enzymes with neat diagrams.	08	L2	CO2
	b.	Explain the standardization method and optimization parameters to attest the enzyme activity with neat diagram.	12	L2	CO2
OR					
Q.4	a.	Explain about fixed incubation and Kinetic method for the measurement of enzyme activity with neat graphical representation.	10	L2	CO2
	b.	Explain about the biocatalyst from extremophiles and its applications.	10	L2	CO2

Module – 3

Q.5	a.	Illustrate the Kinetics of immobilized enzymes with respect to internal diffusion an spherical shape immobilized catalyst.	10	L3	CO3
	b.	Explain about different types of immobilization techniques with neat diagram.	10	L3	CO3

OR

Q.6	a.	Explain about the applications of immobilised enzyme technology in Biomedical domain.	10	L3	CO3
	b.	Illustrate the significance of $K_m < C_s$ and $K_m \gg S$ in batch Process and CSTR for an enzymatic reaction.	10	L3	CO3

Module – 4

Q.7	a.	Explain about the basic reaction mechanism involved in bio-transformation Process.	10	L3	CO4
	b.	i. Explain about Abzymes and its proportion. ii. Explain about the peptide synthesis mechanisms and its types.	10	L3	CO4

OR

Q.8	a.	Describe the strategies of enzyme stability by genetic modifications for solvent tolerance, chemical modifications and immobilization for modified enzymes.	12	L3	CO4
	b.	Explain about key aspects, sources and types novel enzymes.	08	L3	CO4

Module – 5

Q.9	a.	Explain about the Replacements enzymes and its functions.	10	L3	CO5
	b.	Describe the importance of enzymes in detergents and its usage with neat mechanisms.	10	L3	CO5

OR

Q.10	a.	Describe the functions of enzymes used in leather industry with neat chemical reactions.	10	L3	CO5
	b.	Describe the functions of enzymes used in textile industry with neat chemical reactions.	10	L3	CO5
