PARUL UNIVERSITY

PARUL INSTITUTE OF APPLIED SCIENCES

MID SEMESTER INTERNAL EXAMINATION, Summer 2019

B. Sc Semester VI

Subject: Microbiology

Paper Code: 11103201 **Title of the paper: Enzymology**

Date: 27/02/2019 **Time: 11:30am-1:00pm**

Maximum Marks: 40

Instructions:

1. **All questions are compulsory and options are given in first and second question only.**
2. **Numbers to the right of question indicate the marks of respective question.**

Q. 1	Attempt any one question of the following. (i) Explain M.M equation and derive it. (ii) Derive kinetics for Competitive inhibition with its plot.	**(08)**
Q. 2	Attempt any three questions of the following. (i) Write a note on FAD/FMN as a cofactor (ii) Explain Lock & key and induced fit model for enzyme specificity. (iii) List out features of active site. (iv) Derive Eadie Hofstee equation with its plot. (v) Enlist significance of Km.	**(12)**
Q. 3	Do as directed. Attempt all five questions. (i) Give examples of irreversible inhibitor. (ii) What do you meant by first order reaction? (iii) Define Holoenzymes. (iv) What are enzymes? (v) Draw graph of enzyme activity verses pH.	**(05)**
Q. 4	Write correct option in your answer sheet for following 15 multiple choice questions.	**(15)**

MCQ 1	Human enzyme starts to denature at temperature above_____.			
	(A)	40^0C	(B)	95^0C
	(C)	65^0C	(D)	15^0C
MCQ 2	Enzyme activity takes place at _____.			
	(A)	Low temperature	(B)	Constant
	(C)	High temperature	(D)	Zero
MCQ 3	When we plot velocity verses substrate concentration_____type of graph is obtained.			
	(A)	Bell	(B)	Hyperbola
	(C)	Straight	(D)	All of the above
MCQ 4	The structural similarity is observed between substrate and inhibitor			

	in_____inhibitor.			
	(A)	Competitive	(B)	Non-competitive
	(C)	Un-competitive	(D)	Mixed
MCQ 5	Enzymes are chemically _____.			
	(A)	Proteins	(B)	Proteins and nucleic acids
	(C)	Proteins and rarely ribonucleic acids	(D)	Proteins and rarely carbohydrates
MCQ 6	V_{max} decreases and K_m remains constant in _____inhibition			
	(A)	Competitive	(B)	Non-competitive
	(C)	Un-competitive	(D)	Mixed
MCQ 7	Which of the following statements are true regarding enzyme inhibition?			
	(A)	May be reversible or irreversible	(B)	Reversible can be competitive or non-competitive
	(C)	Both a and b	(D)	Always reversible
MCQ 8	K_m=_____.			
	(A)	½ V_{max}	(B)	2 V_{max}
	(C)	V_{max}	(D)	¼ V_{max}
MCQ 9	The enzyme becomes_____ beyond optimum temperature.			
	(A)	Flat	(B)	Hyperactive
	(C)	Denatured	(D)	None of the above
MCQ 10	In plants, enzymes become denatured above_____.			
	(A)	40^0C	(B)	60^0C
	(C)	50^0C	(D)	70^0C
MCQ 11	Shapes of active sites are determined by_____of enzyme.			
	(A)	Naturation	(B)	Specificity
	(C)	Viscosity	(D)	Saturation
MCQ 12	_____is the example of inorganic cofactors.			
	(A)	Metal ions	(B)	Potassium ions
	(C)	Nitrogen ions	(D)	Sulphur ions
MCQ 13	Organic cofactors that are loosely bound to enzymes are classified as_____.			
	(A)	Active enzymes	(B)	Inactive enzymes
	(C)	Coenzymes	(D)	Aesthetic enzymes
MCQ 14	FAD stands for_____.			
	(A)	Flavin adipose dinucleotide	(B)	Folic adenine di-nuclear
	(C)	Folic adipose di-nuclear	(D)	Flavin adenine dinucleotide
MCQ 15	All the substrates are first bound to the enzyme in a defined order in _____ sequential reactions.			
	(A)	Ordered	(B)	Random
	(C)	Disordered	(D)	All of the above

-- End of Paper--