Enrollment No._____

NAVRACHANA UNIVERSITY
a UGC recognized University

School: School of Science
Program/s: M.Sc. Life Science (Biochemistry)
Year: 2nd **Semester:** 3rd
Examination: End Semester Examination
Examination year: December - 2021

Course Code: LS243 **Course Name:** Enzymology
Date: 03/12/2021
Time: 8:30 am to 10:30 am

Total Marks: 40
Total Pages: 03

Instructions:

- *Write each answer on a new page.*
- *Use of a calculator is permitted/not permitted.*
- ** COs=Course Outcome mapping. # BTL=Bloom's Taxonomy Level mapping*

Q. No.	Details	Marks	COs*	BTL#
Q.1	**Multiple choice question: 1 mark each** 1. Select correct characteristic of the functional enzyme from the given options. a) Usually increased in disease conditions b) Do not have any function in plasma c) Present in plasma at higher concentration than tissues d) Both a and c 2. _____ are enzymes that differ in amino acid sequence but catalyze the same chemical reaction. a) Cofactor b) Isoenzyme c) Metalloenzyme d) Metal activated enzyme 3. _____is the only plasma enzyme physiologically found in urine a) Alpha amylase b) Lipase c) Alkaline phosphatase d) Cholinesterase 4. _____ is a serine proteinase that hydrolyse the peptide bonds formed by the carboxyl groups of lysine arginine with other amino acids. a) Lipase b) Trypsin c) Alpha amylase d) Alkaline phosphatase	12*1=12	CO1, CO2, CO3, CO4, CO5,CO6	BT2, BT3

5. The _____ are enzymes involved in the transfer of an amino group from a 2-amino- to a 2-oxoacid with the involvement of cofactor_____.
a) Oxidoreductase, Pyridine phosphate
b) Ligase, Pyridoxal phosphate
c) Aminotransferase, pyridoxal phosphate
d) Aminotransferase, pyridine phosphate

6. The _____ enzyme catalyses the reversible interconversion of lactate and pyruvate.
a) Pyruvate kinase
b) Lactate dehydrogenase
c) Pyruvate dehydrogenase
d) Hexokinase

7. Clotting enzymes are plasma_____ enzymes.
a) Lipases
b) Functional
c) Non-functional
d) Multienzyme

8. The specific liver damage enzyme marker is _____
a) Alanine transaminase
b) Aspartate transaminase
c) Glutamate dehydrogenase
d) Creatinine kinase

9. Which enzyme may be may be of value in the diagnosis and monitoring of acute pancreatitis?
a) Alpha amylase
b) Creatinine kinase
c) Aspartate transaminase
d) Glucokinase

10. Match the following. Write the correct answer.

i.	Lactate dehydrogenase	a)	Muscle disease
ii.	Creatine kinase	b)	Cholestasis
iii.	Alanine transaminase	c)	Haemolysis
iv.	Alkaline phosphatase	d)	Hepatitis

11. Lactate dehydrogenase has _____ isozymes.
a) 7
b) 4
c) 5
d) 8

12. _____ resembles the folate substrate of the enzyme dihydrofolate reductase (DHFR).
a) Doxorubicin
b) Ergotrexate
c) Methotrexate
d) Folic acid

Q.2	**Answer the following question: Any 5 2 mark each** 1 Write the difference between metalloenzymes and metal activated enzymes. 2 What are coenzymes? Explain with any two examples in short. 3 Mention the application of enzyme in food industry. 4 Mention the application of enzymes in diagnostics. 5 What is feedback inhibition? 6 Write difference between direct and indirect ELISA format.	5*2=10	CO1, CO2, CO5	BT2, BT3
Q.3	**Answer the following question: 3 mark each** 1 Discuss the biomedical application of enzyme based biosensors with diagram. 2 Explain reversible inhibitors with example. 3 Elaborate on any one multienzyme complex.	3*3=9	CO2, CO3, CO6	BT2, BT3
Q.4	**Answer the following question. Any 1** 1. Write short note on extraction methods of soluble enzymes. 2. Write short note on extraction methods of membrane-bound enzymes.	1*4=4	CO4	BT2, BT3
Q.5	Write detailed note on methods of immobilization of enzymes. Explain it with the diagram.	1*5=5	CO5,CO6	BT2, BT3

**********End of Question Paper**********