

Navrachana University
School of Liberal Sciences and Education
End-Semester Examination November 2017
M. Sc. Chemistry Semester III

Course: Bio-organic Chemistry**Course Code: CH234****Date: 23/11/2017****Marks: 40****Time: 3:30 to 5:30 pm****Instructions:**

- ➔ Write each answer on a new page
- ➔ Use of a calculator is not required

Q.1. Match the following

(10)

	Column A		Column B
a)	sulphated polysaccharide	i)	redox reactions
b)	alcohol dehydrogenase	ii)	egg whites
c)	enzyme immobilization support	iii)	Thiamine pyrophosphate
d)	inactive precursor of enzyme	iv)	catalytic triad
e)	lysozyme	v)	cheese making
f)	ylide	vi)	carrageenan
g)	corrin ring	vii)	Zn ²⁺
h)	rennet	viii)	zymogen
i)	FAD	ix)	vitamin B ₁₂
j)	Chymotrypsin	x)	calcium alginate

Q.2. Choose the correct option

(5)

1. Corn syrup containing fructose content is used in canned fruits.
 (a) 55% (b) 42% (c) 80% (d) 100%
2. The first enzyme to have its 3-D structure determined is
 (a) aldolase (b) lysozyme (c) amylase (d) carbonic anhydrase
3. Combination of an enzyme with a cofactor is called as
 (a) holoenzyme (b) apoenzyme (c) coenzyme (d) proenzyme
4. Vitamin B₁₂ is used for
 (a) Transfer of -OH group (b) Transfer of -CH₃ group (c) Removal of halogen (d) All of the above
5. Pyridoxal phosphate acts as a coenzyme in reactions.
 (a) decarboxylation (b) deamination (c) racemization (d) transamination

Q.3. Answer the following (6)

- (a) Explain use of any four enzymes in day to day life.
- (b) Give full forms of GABA, NAM, ATP and FAD.
- (c) What is the effect of temperature and pH on enzymes?

Q.4. Answer **any three** of the following (9)

- (a) Explain three applications of immobilized enzymes.
- (b) Explain types of enzyme inhibitions with suitable diagrams.
- (c) Explain different types of enzymes.
- (d) Differentiate between prosthetic group and coenzyme.

Q.5. Answer **any one** of the following (5)

- (a) Describe methods of immobilization of enzymes with suitable diagrams.
- (b) Describe mechanism of chymotrypsin on peptides.

Q.6. State whether following statements of action of alcohol dehydrogenase enzyme are **true** or **false**.

Also correct the false statements. (5)

- (i) During fermentation process the first step is conversion of pyruvate into acetaldehyde by a process called as decarboxylation.
- (ii) The next step is the oxidation of acetaldehyde into an industrially important alcohol known as ethyl alcohol.
- (iii) This second step is catalysed by Zn^{2+} ions present in the enzyme alcohol dehydrogenase.
- (iv) Here Zn^{2+} ions polarizes the carbonyl group, causing transfer of a proton from NADH.
- (v) The coenzyme NAD^+ stands for Nicotinamide Adenine Dinucleoside, which catalyses the reaction.
- (vi) NADH is a derivative of nicotinic acid, which contains a pyrrole ring in its structure.

-----End of Question Paper-----