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Note: Answer to all questions (including multiple choice questions) should be written in the provided answer book only.

Number of Printed Pages = 2

(36 & A-9)

SARDAR PATEL UNIVERSITY
M.Sc (II Semester) Examination
Wednesday, 13th April, 2016
10:30 am to 1:30 pm
Organic Chemistry
PS02ECHE02 – Introduction to Biochemistry

TOTAL MARKS: 70

Q.1 Tick mark / select the correct answer for the following. (*Only correct option against given question number needs to be written in provided answer book*) **(08 Marks)**

1) To which of the following families do folic acid and panthothenic acid belong?
   a) Vitamin C
   b) Vitamin K
   c) Vitamin A
   d) Vitamin B complex

2) Orange, gooseberry (amla), guava and tomatoes are rich source of_____
   a) biotin
   b) tocopherol
   c) thiamine
   d) ascorbic acid

3) The phenomenon of disorganization of native protein structure of is called:
   a) Denaturation
   b) Coagulation
   c) Flocculation
   d) All of the above

4) One of the following is a method of sequencing amino acids in a peptide:
   a) Edman degradation
   b) Hofmann elimination
   c) Haber's processes
   d) Kolbe-Schmitt reaction

5) One of the following is more commonly known as milk sugar:
   a) Glucose
   b) Maltose
   c) Lactose
   d) Sucrose

6) Water is polar solvent. It readily dissolves _____ solutes.
   a) Non-polar
   b) amphoteric
   c) Polar
   d) All of the above

7) The Michaelis- Menten equation relates the rate of an enzyme catalysed reaction to which of the following
   a) product concentration
   b) substrate concentration
   c) activation energy
   d) inhibitor concentration

8) How many hydrogen bonds are possible between guanine and cytosine
   a) 1
   b) 3
   c) 2
   d) 4

(1)

(P.T.O)

Q.2 Answer **any seven** from the following: **14**

a) Distinguish between fat-soluble and water-soluble vitamins.
b) Justify: Vitamin D is a Hormone.
c) What are sphingophospholipids?
d) Classify proteins based on their metabolic fate.
e) What are the functions of carbohydrates?
f) Glucose and fructose are reducing sugars, but sucrose (containing glucose and fructose) is a non-reducing sugar, why?
g) What are sources of lysozyme ? Write about its mechanism.
h) Explain enzyme inhibitors citing example of reversible inhibition.
i) Add a note on triple stranded DNA.

Q.3 **(A)** Summarize the biochemical functions of vitamin A in the processes of vision and explain the key steps of rhodopsin cycle. **6**

(B) Write an account on classification of lipids with suitable examples. **6**

OR

(B) Enlist different tests used to check the purity of fats and oils and describe them. **6**

Q.4 **(A)** Describe the various structures of protein. **6**

(B) Give an account on the determination of primary structure of protein **6**

OR

(B) Write a note on **6**
(1)Fibrous protein
(2)Globular protein

Q.5 **(A)** Discuss the structure and function of two biochemically important disaccharides. **6**

(B) What are isomers? Draw all possible isomers of glucose. **6**

OR

(B) Give a brief explanation on the ionization of water. **6**

Q.6 **(A)** List the various factors that affect the speed of enzyme catalyzed reactions and explain in detail any three factors. **6**

(B) Give a diagrammatic overview of Watson & Crick's double helical structure of DNA. **6**

OR

(B) What is RNA? Briefly explain the three types of RNA with their function. **6**

— X —

(2)