

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

Number of Printed Pages = 2

SEAT No. \_\_\_\_\_

[23]

SARDAR PATEL UNIVERSITY  
M.Sc (II Semester) Examination  
Thursday, 19<sup>th</sup> April, 2018  
10:00 am to 1:00 pm  
M.Sc Chemistry

PS02ECHE22 – 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) Deficiency of Thiamine leads to one of the following disease
  - a) Beri Beri
  - b) Scurvy
  - c) Ricket
  - d) Night blindness
- 2) All are non essential fatty acid except
  - a) Linolenic acid
  - b) Oleic acid
  - c) Stearic acid
  - d) Palmitic acid
- 3) \_\_\_\_\_ occurs when the inhibitory chemical, which does not resemble the substrate, binds to the enzyme other than at the active site.
  - a) Uncatalysed reaction
  - b) Non competitive inhibition
  - c) Competitive inhibition
  - d) All of the above
- 4) The formation of a peptide bond between two amino acids is an example of \_\_\_\_\_ reaction
  - a) Cleavage
  - b) Condensation
  - c) Reduction
  - d) Isomerization
- 5) Which of the following is a non reducing sugar:
  - a) Lactose
  - b) Maltose
  - c) Glucose
  - d) Sucrose
- 6) Which of the following nucleotide is not present in the structure of RNA?
  - a) Adenine
  - b) Uracil
  - c) Guanine
  - d) Thymine
- 7) The functional unit of enzyme is known as:
  - a) Apoenzyme
  - b) Coenzyme
  - c) Holoenzyme
  - d) Isoenzyme
- 8) The phenomenon of disorganization of native protein structure is called \_\_\_\_\_
  - a) Coagulation
  - b) Flocculation
  - c) denaturation
  - d) Condensation

(P.T.O.)

- Q.2** Answer any seven from the following: **14**
- a) Explain the term mutarotation citing  $\alpha$ -D Glucose as an example.
  - b) What are proteoglycans? List different types of linkages present in proteoglycans.
  - c) Enlist water soluble and lipid soluble vitamins. Explain why Vitamin E is a membrane bound antioxidant.
  - d) Explain 'hydrolysis' of proteins.
  - e) Define Enantiomer with suitable example.
  - f) What is denaturation of proteins? List various agents that denature proteins.
  - g) Give the enzymatic reactions carried out by chymotrypsin.
  - h) What are inducers and repressors? Explain with suitable examples.
  - i) State Chargaff's rule of DNA structure.
- Q.3** (A) Give an account of absorption, transport and storage of vitamin B12 6
- (B) Write a short note on phospholipids. 6
- OR**
- (B) Describe the various structural lipids involved in plasma membrane of various living organisms. 6
- Q.4** (A) Describe the various structures of protein. 6
- (B) Describe the processes of Merrifield Solid-Phase Peptide synthesis with suitable examples. 6
- OR**
- (B) Write a note on  
(1) Fibrous protein  
(2) Globular protein 6
- Q.5** (A) What are isomers? Draw all possible isomers of Glucose. 6
- (B) Give an outline classification of carbohydrates. Explain the formation of Haworth projection of glucose with its importance. 6
- OR**
- (B) Give a brief explanation on the ionization of water. 6
- Q.6** (A) Give a diagrammatic overview of Watson & Crick's double helical structure of DNA. 6
- (B) What is enzyme inhibition? List the various types of enzyme inhibition and explain any one enzyme inhibition in detail. 6
- OR**
- (B) Explain enzyme specificity in detail. 6

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