

**F. Y. B. Sc. (Biotechnology) SEM – II (CBCS - 2015 COURSE) :**

**WINTER - 2018**

**Subject: Biochemistry-I**

Day: Tuesday  
Date: 23/10/2018

**W-2018-1171**

Time: 02.00 PM TO 05.00 PM  
Max. Marks: 60

**N.B.:**

- 1) Q1 and Q5 are compulsory.
- 2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
- 3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
- 4) Answers to Both the sections to be written in SEPARATE answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

**SECTION - 01**

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) What is the importance of the –R group (variable radical) in an amino acid molecule?
- b) Give two unique characteristic features of an enzyme.
- c) What is the unit of protein molecular weight? Define it.
- d) What do you understand by protein de-naturation?
- e) What are the constituents of a nucleotide?
- f) What are phosphor-proteins?

Q.2) Answer the following: (5 Marks X 2 = 10)

- a) What are enzymes? What is their significance in biological system?
- b) Describe the structural organization of proteins briefly.

Q.3) Explain the following: (5 Marks X 2 = 10)

- a) Discuss the properties of peptide bond.
- b) Explain the concept of complementary base pairing in DNA structure?

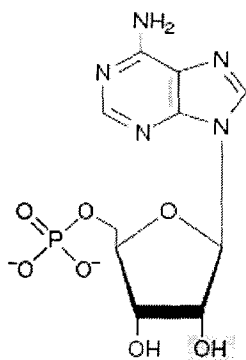
Q.4) Write short notes on the following: (5 Marks X 2 = 10)

- a)  $\beta$ -sheets and  $\beta$ -turns
- b) Water soluble vitamins

**SECTION - 02**

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) Identify the following –



- b) Name two metalloenzymes.
- c) Define the term- gravimetry
- d) Explain briefly the toxic effect of fluoride in potable water.
- e) Name two factors responsible for protein separation in 2 D gel electrophoresis.
- f) What do you understand by density gradient?

(P.T.O.)

Q.6) Answer the following: (5 Marks X 2 = 10)

- a) Discuss the shapes and preferred geometries of any four minerals and their significance in metalloenzymes.
- b) What factors decide the purity of water? Explain in details.

Q.7) Explain the following: (5 Marks X 2 = 10)

- a) What are the deficiency symptoms observed in case of vitamin B deficiency.
- b) What is PAGE? Elaborate on its use for separation of proteins.

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

- a) Ultracentrifugation
- b) Estimation of potassium by flame photometry

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