UNIVERSITY OF THE PUNJAB

B.A. / B.Sc. Part – I
Annual Examination - 2017

Roll No. .....

Subject: Biochemistry-I
PAPER: A (Macro Molecules)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 40

NOTE: **Attempt FIVE questions including question # 1 which is compulsory. All questions carry equal marks.**

Q. No. 1: Mark the Correct Statement. (8)

1. To possess optical activity, a compound must be:
(A) A Carbohydrate (B) A Hhexose (C) Asymmetric (D) Coloured

2. **Mitochondrial DNA is**
(A) Circular double stranded (B) Circular single stranded
(C) Linear double helix (D) None of these

3. **Which of the following is a reducing sugar?**
(A) Sucrose (B) Trehalose (C) Isomaltose (D) Agar

4. **Enzymes catalyzing electron transport are present mainly in the**
(A) Ribosomes (B) Endoplasmic reticulum
(C) Lysosomes (D) Inner mitochondrial membrane

5. **Reducing ability of carbohydrates is due to**
(A) Carboxyl group (B) Hydroxyl group (C) Aldol formation (D) Ring structure

6. **Proteins contain**
(A) Only L-α- amino acids (B) Only D-amino acids
(C) DL-Amino acids (D) Both (A) and (B)

7. **A Zwitter ion is one which has in aqueous solution:**
(A) One positive charge and one negative charge
(B) Two positive charges and one negative charge
(C) Two negative charges and one positive charge
(D) No electrical charges at all

8. **Degeneracy of genetic code implies that**
(A) Codons do not code for specific amino acid (B) No anticodon on tRNA molecule
(C) Multiple codons must decode the same amino acids
(D) Specific codon decodes many amino acids

Q. No. 2: What is primary structure of protein and how it can be determined for specific protein? (8).

Q. No. 3: Define secondary structure of Protein. Explain features and characteristic amino acids of α -helix. β-Sheets and β- turns. (8).

Q. No. 4: How lipids are classified. Give biological significance of Cholesterol and Lipoproteins. (8)

Q. No. 5: Describe in detail the storage carbohydrates of animals and plants. (8).

Q. No. 6: Define lipids give its structural properties. How it forms bilayer?, Micelles and Liposomes? (8).

Q. No. 7: Define Vitamins. Give Structure, Source, Biochemical roles and Deficiency diseases of vitamin C. (8).

Q. No. 8: Explain the following with the help of their structures. (4+4)

(a) Purine and Pyrimidines? (b) Nucleoside and Nucleotide?

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Roll No. .....

Subject: Biochemistry-I
PAPER: B (Enzymology and Signal Transduction)

TIME ALLOWED: 3 hrs.
MAX. MARKS: 35

NOTE: **Attempt any FIVE questions. Question # 1 is compulsory. All questions carry equal marks.**

Q. No.1. **Select the correct answer.** 7

i), A coenzyme containing non aromatic hetero ring is

(A) ATP (B) NAD

(C) FMN (D) Biotin

ii), Vitamin D absorption is increased in

(A) acid pH of intestine (B) alkaline pH of intestine

(C) impaired fat absorption (D) contents of diet

iii), The most important natural antioxidant is

(A) vitamin D (B) vitamin E

(C) vitamin B12 (D) vitamin K

iv), In iron deficiency anemia

(A) the plasma bound iron is low (B) the plasma bound iron is high

(C) total iron binding capacity is low (D) both the plasma bound iron and total iron binding capacity are low

v), Iron is mainly absorbed from

(A) Stomach and duodenum (B) Ileum

(C) Caecum (D) Colon

vi), Which group is affected by copper deficiency?

(A) Elderly women (B) Alcoholics

(C) Active toddlers (D) Premature baby birth

vii), What is the principal cation of intracellular fluid?

(A) K+ (B) Na+

(C) Ca2+ (D) Mg2+

Q. No.2. Define enzyme. Derive the Michaelis Menton equation. 7

Q. No.3. Write down the names of pituitary hormones. Discuss the mechanism and clinical aspect of thyroid hormones. 7

Q. No.4. Define vitamins. Describe the structure and functions of vitamin E. 7

Q. No.5. Write down names of innate immunity cells. Describes different functions of immunoglobulins G (IgG) molecules. 7

Q. No.6. Describe main composition of blood along with their general functions. 7

Q. No.7. What are trace elements? Describe the functions, regulation and absorption of iodine. 7