



PJ-4652 Seat No. _____
First Year M. B. B. S. Examination
July - 2018
Biochemistry : Paper - I
(Old Course)

Time : 3 Hours]

[Total Marks : 50

Instructions :

- (1) Each section to be answered in **separate** answer book.
- (2) Answer should be brief and to the point.

SECTION - I

1 State True or False with Justification : (any **six**) **1×6=6**

- (a) Crystalline glucose is β -L-Glucopyranose.
- (b) Primary structure of protein is stabilized by covalent bonds.
- (c) Poly unsaturated fatty acids are nutritionally non-essential.
- (d) Isozymes catalyze the different reactions.
- (e) Peptide bond has partial double-bond character.
- (f) Oleic acid is a member of ω 6 series.
- (g) RNA obeys Chargaff's rules.
- (h) Pellagra occurs in people whose staple diet is maize.

2 (A) Read the following case report and answers **1×5=5**
the questions :

A 4 years boy was brought to paediatric OPD by his mother with complaint of low body weight, diarrhoea and difficulty of vision at night. During examination the boy was malnourished and bitot's spots were found on eyes. Biochemical parameter reveals serum total protein 5 gm/dl (normal 6-8 gm/dl). The case was diagnosed as malnutrition with vitamin A deficiency.

Questions :

- (i) Which isomer of retinal is necessary for vision ?
- (ii) How is all trans retinal regenerated ?
- (iii) Mention the role of retinol and retinoic acid.
- (iv) What are the daily requirements and sources of vitamin A ?
- (v) What is the possible biochemical reason of finding malnutrition and vitamin A deficiency together ?

(B) Discuss the following : **3+2=5**

- (i) Diagnostic significance of enzymes
- (ii) Megaloblastic anemia.

3 Write short notes : (any **three**) **3×3=9**

- (i) Vitamin E
- (ii) Electrophoresis
- (iii) Classification of enzymes
- (iv) Glycerophospholipids
- (v) Diagnostic importance of plasma proteins.

SECTION - II

4 Give your comments with justification : (any **six**) **1×6=6**

- (a) Coenzymes serve as substrate shuttles.
- (b) Aspirin in small doses is prescribed to prevent heart attack.
- (c) Sulfa drugs are commonly used as antimicrobial agents.
- (d) Vitamin D helps in bone and teeth formation.
- (e) Synthetic nucleotide analogues used in the treatment of cancer.
- (f) NAD⁺ and FAD play important role in oxidation reduction reactions.
- (g) Glutathione keeps cell membrane in reduced state.
- (h) Protein precipitation is maximal at isoelectric pH.

- 5** Discuss the following : (any **two**) **5×2=10**
- (a) Functions of Prostaglandins
 - (b) Abnormal hemoglobin
 - (c) Types of Ribonucleic acid (RNA).
- 6** Write short notes : (any **three**) **3×3=9**
- (a) Types of mutation
 - (b) DNA replication
 - (c) Functions of various immunoglobulins
 - (d) Biochemical functions of iron and copper
 - (e) Active site of enzymes.
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