



JG-4652

Seat No. _____

First Year M. B. B. S. Examination

July - 2019

Biochemistry : Paper - I

(Old Course)

Time : **3 Hours**]

[Total Marks : **50**

- Instructions :** (1) Figures on right indicate full marks
(2) Write Section I & II in separate answer sheets.

SECTION - I

- 1** State true or false with justification on any **six** : **1×6=6**
- (a) Sucrose is a reducing sugar.
 - (b) All enzymes are protein in nature.
 - (c) Glycine is the simplest amino acid.
 - (d) Glutathione is a tripeptide.
 - (e) Mitochondria is the power house of the cell.
 - (f) Nucleus acts as a packing unit of the cell.
 - (g) Base pairing rule is always maintained in DNA.
 - (h) IgA is responsible for primary immune system.
- 2** (a) Read the following case report and answer the **5**
all five questions (No Options)
A 7-years-old boy was brought to the OPD with injury, following a fall. X-Ray spine revealed a fracture in the first lumbar vertebrae. The other significant radiological finding was diffuse haziness at the metaphyseal border and inadequate mineralization. He had been feeling mild fatigue, bodyache, upper abdominal discomfort and fatty food intolerance. During the past three months, he had developed slight abnormality of gait. Examination showed diffuse bony tenderness, especially over tibia, mild liver enlargement, and proximal muscle weakness.

Investigations test	Patient's report	Reference range
Total bilirubin	2.8 mg/dL	0.1-1.0 mg/dL
ALT	88 U/L	10-35 U/L
AST	102 U/L	10-40 U/L
APL	128 U/L	40-100 U/L
Serum calcium	8.2 mg/dL	8.5-10.5 mg/dL
Serum phosphate	2.3 mg/dL	2.5-4.5 mg/dL

Questions :

- (1) What is the probable diagnosis?
- (2) Write cause of vitamin D deficiency in this child.
- (3) Write factors affecting calcium metabolism.
- (4) Write role of liver and kidney in vitamin D synthesis
- (5) What is renal rickets?

(b) Discuss the following : (any **Two**) (No Option) **3+2=5**

- (1) Biological importance of Poly unsaturated fatty acid.
- (2) Classification of Enzyme.

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

- (1) Explain Mucopolysaccharides with example and their biological role.
- (2) Draw and describe: Fluid Mosaic Model.
- (3) Draw figure and explain Principle of Colorimeter.
- (4) Biologically important nucleotides.
- (5) Explain structure of Immunoglobulin.

SECTION - II

4 Give your comments with Biochemical justification on **1×6=6** any **six** :

- (a) Sulfonamides are given as antibacterial agent.
- (b) Vitamin B6 deficiency leads to anemia.

- (c) Methotrexate acts as anticancer drug.
- (d) High LDH level found in Hemolyzed sample.
- (e) Inulin is used for renal clearance test.
- (f) Iron is one way element.
- (g) Selenium decrease requirement of Vitamin E.
- (h) FIGLU excretion test used for folate deficiency.

5 Discuss any **two** of the following : **5×2=10**

- (a) Gene expression and lac operon theory.
- (b) Bilirubin metabolism and disorder associated with it.
- (c) Definition and importance of Acute phase protein.

6 Write short notes on any **three** : **3×3=9**

- (a) Phospholipids.
 - (b) Electrophoresis: Principle and its applications.
 - (c) Markers for Cardiac disease.
 - (d) Explain structure, function and synthesis of Collagen.
 - (e) Structure of t-RNA.
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