



PL-M20176 Seat No. _____
First Year M. B. B. S. Examination
July - 2018
Biochemistry : Paper - II
(New 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) K_m value of Glucokinase is lower than Hexokinase.
- (b) Lead inhibits haemoglobin synthesis,
- (c) Carnitine deficiency leads to ketotic hypoglycaemia.
- (d) Gluconeogenesis is not a simple reversal of glycolysis.
- (e) Isocitrate dehydrogenase is activated by ATP and inhibited by low $[NADH] : [NAD^+]$ ratio.
- (f) Increased dietary consumption of protein raises urea production in the liver.
- (g) Peptidyl transferase is an example of a ribozyme.

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

A 4 year old fair chubby boy was brought to the hospital with the complaints of delayed developmental mile stones, mental retardation, seizures and eczema. He exhibits light coloured hair, skin and eye. Blood Phenylalanine level was 36 mg/dl (Normal 1-2 mg/dl). Guthrie bacterial inhibition assay and ferric chloride test showed blue green colour.

Questions :

- (i) What is the probable diagnosis ?
- (ii) What is the possible cause for the disorder ?
- (iii) Patient exhibits light coloured hair, skin and eyes. Why ?
- (iv) Name the metabolites appears in the urine of this patient ? Give reasons.
- (v) Suggest your line of treatment.

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

- (i) Homocystinurias
- (ii) Galactosemia.

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

- (i) Biological values of proteins
- (ii) De novo synthesis of purines
- (iii) Metabolism of Triacylglycerol
- (iv) Role of S-Adenosylmethionine (SAM) in transmethylation reactions.

SECTION - II

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

- (a) Fatty acids are activated before being catabolised.
- (b) Glucose interferes with the expression of Lac operon.
- (c) Leucine is strongly ketogenic amino acid.
- (d) Glutathione is essential for degradation of insulin.
- (e) Purine salvage pathway is highly active in RBC and Brain.
- (f) Diminished Telomerase enzyme activity is an important cause of aging.
- (g) Single strand binding proteins (SSB) is essential for DNA replication.

- 5** Discuss the following : (any **two**) **5×2=10**
- (a) Pancreatic function tests
 - (b) Molecular basis of cancer
 - (c) Phase -II reactions of xenobiotics metabolism.
- 6** Write short notes : (any **three**) **3×3=9**
- (a) Polymerase Chain Reaction (PCR)
 - (b) Reactive Oxygen Species (ROS)
 - (c) DNA repair mechanisms
 - (d) DNA Sequencing.
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