



**HBC-4653**      Seat No. \_\_\_\_\_

**First Year M. B. B. S. Examination**

**August - 2017**

**Biochemistry : Paper - II**

**(Old Scheme)**

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 reasons on any six : **1×6=6**

- (a) Alcohol consumption leads to hypoglycemia.
- (b) Urea cycle helps in synthesis of a semi essential amino acid.
- (c) Histamine is a biogenic amine produced from tyrosine.
- (d) Alanine is a semi essential amino acid.
- (e) Glycolysis in erythrocytes always ends in lactate.
- (f) Ammonia is toxic to brain tissue.
- (g) Liver plays crucial role in metabolism of drugs.
- (h) High HDL level is bad for health.

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

25 years old male presented in hospital with complaints of passing reddish black coloured urine and pain in abdomen. History revealed that ten days back he had fever which was treated as malaria. He was given tablet Primaquin to avoid recurrence of malaria. On examination – pallor +, icterus +, mild splenomegaly present. Laboratory findings were :

Haemoglobin - 8 gm/dl, Serum total bilirubin - 5 mg/dl, Conjugated bilirubin - 0.2 mg/dl, Urine blood++, Urine urobilinogen +. Blood sample was sent for some enzyme tests. On discharge from hospital he was advised to avoid certain drugs.

- (i) Which enzyme is likely to be defective in this patient?
  - (ii) What is the biochemical explanation for haemolysis in this case?
  - (iii) Why hexose monophosphate shunt is important for RBCs?
  - (iv) Name some pathways where NADPH is required.
  - (v) Do you think that bilirubin would be present in urine of this patient? Justify your answer.
- (B) Discuss the following : **3+2=5**
- (i) Glycosuria
  - (ii) Hartnup's disease

- 3** Write short notes on any **three** : **3×3=9**
- (i) Specific Dynamic Action (SDA)
  - (ii) Digestion of proteins
  - (iii) Deamination of amino acids
  - (iv) Metabolic disorders of tyrosine
  - (v) Protein energy malnutrition (PEM).

## SECTION - II

- 4** Give your comments with justification on any **six** : **1×6=6**
- (a) Pancreatitis leads to fat malabsorption.
  - (b) Fructose is also known as the 'fatty' carbohydrate.
  - (c) Oxaloacetate can prevent ketosis.
  - (d) LCAT deficiency leads to atherosclerosis.
  - (e) Methionine plays an important role in methylation reactions.
  - (f) Fluoroacetate is a potent inhibitor of TCA cycle.
  - (g) Elevated unconjugated bilirubin levels are toxic to the brain.
  - (h) Orotic aciduria is a disorder of pyrimidine metabolism.
- 5** Discuss any two of the following : **5×2=10**
- (a) Trace pathway of glycogenesis and glycogenolysis
  - (b) Diabetes mellitus - molecular basis, types and metabolic disturbances
  - (c) Denovo synthesis of fatty acids and its regulation.

**6** Write short notes on any three :

**3×3=9**

- (a) Blood buffers - types and functions
  - (b) Biologically important substances synthesized from glycine
  - (c) Salvage pathway for nucleotides
  - (d) Fatty liver and lipotropic factors
  - (e) Oncogenes and Antioncogenes.
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