HBC-M20176

Seat No. _____

First Year M. B. B. S. Examination

August – 2017

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 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.

2 (A) Read the following case report and answer the all five questions : **5**

25 year 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 spleeenomegaly 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 hemolysis 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.

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 enzyme 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.

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) Post transcriptional modifications

(b) Lactose (Lac) Operon model

(c) Thyroid functions tests

(d) Oncogenes and Antioncogenes.