



HBA-4652

Seat No. _____

First Year M. B. B. S. (Biochemistry) Examination

August - 2017

Biochemistry : Paper - I

(Old Course)

Time : 3 Hours]

[Total Marks : 50

SECTION - I

1 State true or false with justifications : (any six) 1×6=6

- a) Mutarotation of glucose is because of interconversion between cyclical structures of glucose.
- b) In the 2nd carbon position of lecithin there is almost always a saturated fatty acid is attached.
- c) Glycine is also called a "little master."
- d) Nucleotides are always found only inside cell nucleus.
- e) Albumin is responsible for maintaining "Total body water" in human.
- f) 2-3 Bisphosphoglycerate interaction is more with fetal hemoglobin than adult hemoglobin.
- g) Coenzymes are always protein in nature.
- h) IgA is found in body secretions like tears and saliva.

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

A 3 years old boy of tribal origin presented with complaint of pain in abdomen. On examination: Pallor of skin ++, hepato-spleenomagaly+, Laboratory tests showed Hb 4.2 gm%, RBC Sickling test +ve, electrophoresis showed that, the patient had HbS. The patient was diagnosed as having Sickle cell anaemia.

- i) What is molecular defect in Sickle cell disease?
- ii) Why sickling occurs in sickle cell disease?
- iii) Why sickling occurs in deoxygenated RBCs only?
- iv) What is Sickle cell trait?
- v) Draw the electrophoretic pattern of Hb electrophoresis of Sickle cell trait patients.

- (b) Discuss the following : **3+2=5**
i) Principle and structure of spectrophotometer.
ii) What are iso enzymes ? Write their importance in disease diagnosis.

- 3** Write Short notes : (any three) **3×3=9**
a) Structure of Ig G.
b) Functions of phospholipids with examples.
c) Biologically important nucleotides.
d) lac operon.
e) Collagen.

SECTION - II

- 4** Give comments with justifications : (any six) **1×6=6**
a) Shape of Glucosazone and Fructosazone are same.
b) Inulin is used for renal clearance test.
c) Glycine is optically inactive.
d) Cyclic AMP acts as second messenger for hormonal action.
e) In SDS PAGE electrophoresis proteins are separated on basis of their molecular weight.
f) Met hemoglobin can not carry oxygen.
g) Antibiotic resistance of bacteria is related with plasmids.
h) Ribozymes are not protein in nature.
- 5** Discuss the following : (any two) **5×2=10**
a) Medical applications of Recombinant DNA technology.
b) Enzyme inhibitions with examples.
c) Functions of Plasma proteins.
- 6** Write short notes : (any three) **3×3=9**
a) Mucopolysaccharides.
b) Chromatography.
c) mRNA.
d) Classification of enzymes.