



Z-4652

Seat No. _____

First Year M.B.B.S. Examination

February – 2006

Biochemistry : Paper - I

Time : 3 Hours]

[Total Marks : 50

SECTION - I

1 Explain any six : 6

- (1) Cysteine amino acid residues are important in structure of protein.
- (2) L-Glucose is not a source of energy for body.
- (3) Vegetable oils never have cholesterol in it.
- (4) Adenine is not essential in food.
- (5) pH imbalance in body affects functioning of cellular enzymes.
- (6) Cigarette smoking affects function of Hemoglobin.
- (7) Protein electrophoresis is useful in diagnosis of Multiple Myeloma.
- (8) Vitamin C deficiency affect collagen.

2 Read the case and answer the questions : 10

A 3 yrs old boy was admitted to pediatric ward of a government hospital due to pain in abdomen. He had severe palor of skin, which prompted paediatrician to order his Hemoglobin estimation in the laboratory. It was 3 gm%. Considering his tribal origin, possibility of sickle cell diseases was suspected. Laboratory was requested to test his blood for the possibility of Sickle cell disease. Patient's hemoglobin was found insoluble in low oxygen solution. Electrophoresis showed that patient had only HbS, while both parents had HbS and HbA.

- (1) Write primary structural defect in the patient's Hemoglobin.
- (2) Why the patient has anemia ?
- (3) Why the patient's hemoglobin was not soluble in low oxygen solution ?
- (4) Why HbS move slower towards anode during electrophoresis at pH 8.6 ?
- (5) Why the patient did not suffer from anemia right from the birth ?

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[Contd...

- 3** Write notes on any **three** : **9**
- (1) Disaccharides
 - (2) Prostaglandins
 - (3) Denaturation of proteins
 - (4) ELISA
 - (5) Functions of cell membrane.

SECTION - II

- 4** Explain any six : **6**
- (1) Liver disease can lead to deficiency of fat soluble vitamins.
 - (2) Six months requirement of Vitamin A can be taken together.
 - (3) All pregnant women must take folic acid.
 - (4) In DNA A=T and G=C.
 - (5) If Genetic code was not degenerate, there would have been 44 non-sense codon.
 - (6) Sunbath improve body calcium, but cause skin cancer.
 - (7) Niacin is required in Citric acid cycle.
 - (8) Ciprofloxacin, a DNA gyrase (topoisomerase) inhibitor, is used as anti-bacterial drug.
- 5** Write note on any two : **10**
- (1) Vitamin K
 - (2) Recombinant DNA technology
 - (3) Enzyme regulation.
- 6** Write notes on any three : **9**
- (1) Polymerase chain reaction
 - (2) DNA repair
 - (3) DNA double helix
 - (4) Genetic code.
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