



MAM-4652

Seat No. _____

First Year M. B. B. S. Examination

October / November – 2016

Biochemistry : Paper - I

Time : 3 Hours]

[Total Marks : 50

- Instructions :** (1) Each section should be answered in separate answer books.
(2) Answers should be brief and to the point.

SECTION – I

- 1 State true or false with justification : (any six) 1×6=6
- (a) Fructose is a stereoisomer of glucose.
 - (b) Glycine is optically inactive.
 - (c) Enzymes are always protein in nature.
 - (d) Phosphatidyl inositol acts as a precursor to second messenger of hormonal action.
 - (e) Immunoglobulins are not synthesized in liver.
 - (f) All the minerals and vitamins essential for health are present in milk.
 - (g) " A-DNA" is the commonest type of DNA in physiological condition.
- 2 (a) Read the following case report and answer the questions : 5
- A 50 year old man came to emergency with left sided severe chest pain. In investigation his Cardiac Troponin I level was 25 $\mu\text{g/L}$ (Normal 1-10 $\mu\text{g/L}$. Serum CK-MB level also was two fold higher than normal; blood Total cholesterol level 280 mg% (Normal 150 – 200 mg%). ECG report suggested "Myocardial infarction". He was admitted in ICU and immediate treatment was started.

- (i) What is Myocardial infarction?
- (ii) Write the reaction which is catalyzed by Creatine Kinase enzyme.
- (iii) What are the other enzymes also found to be increased in Myocardial infarction?
- (iv) Why estimation of Cardiac Troponin I is preferred more over CK-MB in myocardial infarction ?
- (v) What is the therapeutic role of Superoxide dismutase (SOD) in myocardial infarction?

(b) Discuss the followings : **3+2=5**

- (i) Describe different membrane transport systems and Structure of Plasma membrane.
- (ii) Describe functions of different plasma proteins. Write the causes of serum Albumin deficiency.

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

- (i) Factors influencing enzyme activity.
- (ii) Biologically important nucleotides.
- (iii) Structure and functions of IgG.
- (iv) Inner structure and principle of spectrophotometer.

SECTION – II

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

- (a) Dipalmitoyl Lecithin is a marker of lung maturity.
- (b) Serum Amylase estimation is done in Acute pancreatitis.
- (c) Mechanical distortion of the shape of RBCs occur in Sickle cell disease.
- (d) Sn-RNA helps in post transcriptional modification of m-RNA.

- (e) FADH_2 produce less ATP than $\text{NADH}+\text{H}^+$ in electron transport chain and oxidative phosphorylation.
- (f) 2,3- BPG interaction is more with adult hemoglobin than fetal hemoglobin.
- (g) Small dose of Aspirin is prescribed to prevent heart attack.

5 Discuss the following : (any **two**) **5×2=10**

- (a) Describe enzyme inhibitions with suitable examples.
- (b) Describe different types of Porphyrias and their diagnosis.
- (c) Describe Structure and functions of phospholipids.

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

- (a) Sulphate containing mucopolysaccharides.
 - (b) Markers of liver diseases.
 - (c) Applications of radioisotopes in medicine.
 - (d) NADH and Malate aspartate shuttle mechanisms.
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