

(6)

- (e) _____ shunt pathway is active in high altitude.
- (f) Proteins exist in zwitterion form at _____
- (g) Heat shock proteins are required for _____ after the translation process is over.
- (h) Prostaglandins are synthesized from _____ via _____ pathway.
- (i) The enzyme deficit in Von Gierke's disease is _____.
- (j) _____ and _____ are the major end products of HMP shunt pathway.

Total Number of Pages—6
**1st Prof.-MBBS—
Biochemistry-I**

2021

BIOCHEMISTRY

Paper – I

Full Marks : 100

Time : 3 hours

Answer all questions

The figures in the right-hand margin indicate marks

SECTION –A

[Marks : 50]

1. Define primary, secondary and tertiary structure of protein. Mention the bonds responsible to maintain these structures. 6 + 4
2. Write short notes on any five : 5 × 5
 - (i) Mutarotation
 - (ii) Essential fatty acids

- (iii) Nucleotide analogues used in cancer therapy
 - (iv) Anion Gap
 - (v) Ion Channels
 - (vi) Folate trap.
3. A child aged 10 year was brought to a paediatrician with a history of diminished vision during night since 1 year. He had past history of repeated respiratory tract infection and diarrhea. On examination he had white foamy patch on the outer sclera on both the eyes, he had rough skin on extensor aspects of his arms. 2 + 2 + 1
- (a) Which micronutrient deficiency may be the reason of such signs and symptoms ?
 - (b) What are the eye changes known as ?
 - (c) What dietary advice you would prescribe to the child ?

4. Fill in the blanks : 1 × 10
- (a) Cataract seen in galactosemia is due to deposition of _____ in the lens protein.
 - (b) Cytokines are apart of _____ immunity.
 - (c) Thiamine deficiency can be detected by doing _____ enzyme assay.
 - (d) _____ is a specific marker for acute pancreatitis.
 - (e) Mechanism of action of Ionophores _____
 - (f) _____ marker enzyme for mitochondria.
 - (g) The simplest phospholipid, phosphatidic acid is made up of _____.
 - (h) _____ of ETC is inhibited by Cyanide.
 - (i) _____ present in cytochrome oxidase is inhibited by lead.

(4)

(j) Pseudotumor cerebri is seen in toxicity

of _____

SECTION - B

[Marks : 50]

5. Describe the components of electron transport chain and the inhibitors of each with diagram. 10
6. Write short notes on any five : 5 × 5
 - (i) Isozymes
 - (ii) Function of phospholipids
 - (iii) Mucopolysaccharides
 - (iv) Renal mechanism of acid base balance
 - (v) Diagnostic and therapeutic use of radioisotopes
 - (vi) Role of vitamin D in calcium homeostasis.
7. A person presents himself in comatose condition. He has a history of diabetes since last 15 years.

(5)

He is very irregular in taking insulin. On examination he had dehydration, cold clammy skin and a fruity odour from breath. Investigation report shows Blood Sugar-480 mg/dl, pH-7.2, Urine -protein-nil, Ketone bodies+++ , Sugar+++ . 1 + 2 + 2

- (a) What is your probable diagnosis ?
 - (b) What is the biochemical basis of his signs and symptoms ?
 - (c) Role of Insulin on fat metabolism.
8. Fill in the blanks : 1 × 10
- (a) Major apolipoprotein in chylomicron is _____
 - (b) Iron absorption requires _____ Vitamin.
 - (c) _____ the specific non-enzymatic marker of AMI.
 - (d) Photosensitivity is not a feature of _____ porphyria.