

00808

21718

3 Hours / 80 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.

Marks

1. Solve any EIGHT of the following :

16

- (a) Define & explain metabolism.
- (b) What is enediol reaction of carbohydrate ? Give its biological importance.
- (c) What are essential amino acids ? Give structure of any one of them.
- (d) Explain with chemical reaction, saponification reaction of simple fats.
- (e) What is egg-white injury ? Give its symptoms.
- (f) Define pathology. Name any one pathological condition in human being.
- (g) What do you mean by 's-GOT' in enzymes ? What is its significance ?
- (h) What is the importance of electron transport & oxidative phosphorylation in carbohydrate metabolism ?
- (i) Explain the process of transamination in protein catabolism.
- (j) What are Keton bodies ? What is Ketogenesis ?
- (k) Give only structure of Folic Acid.
- (l) How water is distributed in the different compartments in the body of human being ?

2. Solve any FOUR of the following :**12**

- (a) Define 'cell'. Draw neat labelled diagram of a typical animal cell & give two functions of mitochondrion.
- (b) Give structures of the following :
 - (i) α -D Glucose
 - (ii) α -D Mannose
 - (iii) β -D Fructose
- (c) Discuss 'acid-base' nature of amino acids & explain isoelectric point of an amino acid.
- (d) Define lipids. Classify lipids with examples.
- (e) Explain any six biological functions of 'Calcium'.
- (f) Give significance of abnormal constituents of urine. (any six)

3. Solve any FOUR of the following :**12**

- (a) Give pharmaceutical & therapeutic use of enzymes.
- (b) Explain 'Coris' cycle & give its biological importance.
- (c) How ammonia is produced in the body ? Enlist different ways of disposal of ammonia from the body.
- (d) What are lipid storage diseases ? Explain arteriosclerosis.
- (e) Explain biological role of carbohydrates.
- (f) Define polysachharides. Explain the structure of glycogen.

4. Solve any FOUR of the following :**12**

- (a) Explain any one protein deficiency disease.
- (b) Define the following :
 - (i) Polensky value
 - (ii) Iodine value
 - (iii) Sap. value
- (c) Explain the role of lipids in biological membrane with the help of models.
- (d) Define dehydration. Explain causes, symptoms & treatment of dehydration.
- (e) What are coenzymes ? Name co-enzymes of the following vitamins :
 - (i) Thiamin
 - (ii) Pyridoxin
 - (iii) Riboflavin
 - (iv) Nicotinamide
- (f) Explain causes, symptoms & treatment of the following diseases :
 - (i) Scurvy
 - (ii) Pellagra

5. Solve any FOUR of the following :**12**

- (a) Explain functions & pathology of lymphocytes & platelets.
- (b) Give structure & two colour reaction of cholesterol.

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- (c) Define compound lipids. Explain any two important biological functions of phospholipids.
- (d) Explain the following colour reactions :
 - (i) Seliwanoff's reaction
 - (ii) Ninhydrin reaction
 - (iii) Newman's reaction
- (e) Discuss –
 - (i) Pernicious anemia
 - (ii) Sickle-cell anemia
- (f) Define & explain Glycogenesis. Give in brief, importance of the process.

6. Solve any FOUR of the following :

16

- (a) Explain reactions of beta oxidation of fatty acids.
 - (b) Explain reactions of Kreb's cycle.
 - (c) Explain Urea cycle in detail.
 - (d) Discuss extramitochondrial fatty acid synthesis.
 - (e) Explain reactions of Glycolysis.
 - (f) Discuss secondary structures of protein.
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