12425

20223

**03 Hours / 80 Marks**

Seat No. | | | | | | | | |

*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.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

(6) In case student has attempted sub-question of question no. 3 more than once, only first attempt should be considered for assessment.

**Marks**

**1. Attempt any SIX of the following:** **30**

a) Define and classify carbohydrates with example. Draw the structure of Glucose and Galactose.

b) Discuss in brief the steps involved in Glycolysis and give its energetic.

c) Define the term 'Enzyme'. Enlist the factors affecting enzyme activity. Explain effect of substrate concentration and temperature on rate of enzyme catalysed reaction.

d) Define proteins. Enlist different types of structure of proteins. Describe secondary structure of proteins.

e) Explain beta-oxidation of unsaturated fatty acid with energetic of palmitic acid.

f) Describe lipid profile tests with its clinical significance.

g) What is biological oxidation ? Explain electron transport chain in details.

**2. Attempt any TEN of the following :** **30**

a) Give types and functions of lipoproteins.

b) Give the schematic representation of overall view of TCA cycle.

c) Explain Watson and Crick model of DNA.

d) State the causes of

i) Phenyl ketonuria ii) Alkaptonuria

iii) Ketoacidosis

e) Define dehydration. Give causes and treatment of dehydration.

f) Explain different liver function tests.

g) What are minerals? Give its classification and functions.

h) Name normal and abnormal constituents of urine. Write significance of abnormal constituents in disease.

i) What are fatty acids? Classify it based on chemical structure and nutritional requirements with example.

j) Define and classify vitamins. Give deficiency diseases of vitamin D.

k) Define anaemia. Explain megaloblastic and sickel cell anaemia.

P.T.O.

Marks

**3. Attempt ALL of the following :** **20**

a) Full form of DNA is _____.

b) Define Biochemistry.

c) True of false : The prokaryote cell has a nucleus.

d) _____ is sulfur containing essential amino acid.

e) Lock and key model of enzyme action is proposed by

i) Emil Fischer ii) Koshland

iii) Crick iv) Watson

f) Match the following:

| | | | |
|---|---|---|---|
| 1. | Vitamin D | a. | Beri-Beri |
| 2. | Vitamin C | b. | Pernicious anemia |
| 3. | Vitamin $B_{12}$ | c. | Scurvy |
| 4. | Vitamin $B_1$ | d. | Ricket |

g) Co-enzyme form of vitamin B6 is

i) Pyridoxal Phosphate ii) Tetrahydrofolate

iii) Thiamine pyrophosphate iv) Nicotinamide adenine dinucleotide

h) Define endoenzymes.

i) Define Osmolarity.

j) Draw a structure of Lactose.

k) Name the two hormones responsible for the regulation of electrolyte balance.

l) Give coenzyme of Riboflavin.

m) ORS stands for _____

n) Define Biotechnology.

o) If one NADH molecule completely oxidized by electron transport chain reaction in mitochondria, then it generates _____

i) 2 ATP ii) 3 GTP

iii) 4 ATP iv) 3 ATP

p) Normal range of creatinine in urine is _____.

q) Two amino acids are joined together by _____ bond.

i) Glycosidal ii) Peptide

iii) Covalent iv) Pi

r) Which of the following nitrogenous base is not the component of RNA.

i) Adenine ii) Guanine

iii) Cytosine iv) Thymine

s) Normal range of leucocytes in adult is _____.

t) Term biotechnology was coined in

i) 1954 ii) 1919

iii) 1857 iv) 1820

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