2021

FOOD & NUTRITION

[HONOURS]

Paper : VII

Full Marks : 80   Time : 4 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

1. Answer any **seven** from the following questions:

    $1 \times 7 = 7$

    a) Name one Ketohexose.

    b) What is trans-fatty acid?

    c) What is "iodine number" of fat?

    d) What is the key enzyme for glycogenolysis?

    e) What is atherosclerosis?

    f) What is pinocytosis?

    g) What is iso-electric point of amino acid?

    h) Name one important Metallo-enzyme.

    i) What is stereoisomer?

2. Answer any **six** from the following questions:

    $2 \times 6 = 12$

    a) What are retinoids?

    b) How riboflavin exists in tissues?

    c) What is 'DNA probe'?

    d) What is Hybridoma?

    e) Write any two physiological functions of Nitric Oxide.

    f) Why vitamins are called essential nutrients?

    g) Why oxidative phosphorylation is related with chemo-osmotic theory?

    h) What is transamination reaction?

3. Answer any **seven** from the following questions:

    $3 \times 7 = 21$

    a) What is molecular scissor?

    b) What is the importance of p53 in our body?

    c) What is 'Transfection'? Give example.

    d) What is Biological oxidation?

    e) What is meant by metabolic adaptation?

    f) Differentiate between facilitated diffusion and active transport.

g) Write the significance of LDL and HDL ratio.

h) How variation of pH affect the activity of enzyme?

4. Answer any **four** from the following questions:

5×4=20

a) "Magnesium activates enzyme requiring ATP"—Elaborate.

b) What is urinary buffer? Discuss the role of kidney in regulation of body pH.

c) Briefly describe the transcription process in the mammalian cell.

d) Describe in brief the salient features of B-DNA structure.

e) What are antioxidants? Briefly discuss their importance in the diet.

f) Discuss the biochemical role of Vitamin A.

5. Answer any **two** from the following questions:

10×2=20

a) What is meant by enzyme kinetics? Discuss the different factors which may influence enzyme activity.   2+8=10

b) Write short notes on any **two** of the following:

5×2=10

i) Importance of mineral in diet.

ii) Water soluble vitamins

iii) metabolic adaptation.

c) What is the importance of TCA cycle in our body? Discuss in brief about competitive and non-competitive form of enzyme inhibition.

2+4+4=10

d) What is adipose tissue? Discuss the process of fatty acid synthesis and its regulation.

2+8=10

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