

2024

PHYSIOLOGY — HONOURS

Paper : CC-8

(Digestion and Metabolism)

Full Marks : 50

The figures in the margin indicate full marks.

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

Group - A

1. Answer *any five* questions : 2×5

- (a) What is ptyalin? Mention its source.
- (b) What is thermogenin?
- (c) What do you mean by oxidative deamination?
- (d) What are ketogenic amino acids? Give example.
- (e) State the significance of NO as a biological signal transducer.
- (f) What are ketone bodies?
- (g) Mention the location of Meissner's and Myenteric nerve plexus in gut wall.
- (h) What is Zollinger-Ellison Syndrome?

Group - B

2. Write short notes on (*any two*) : 5×2

- (a) GALT
- (b) Transamination
- (c) Oxidative phase of Pentose Phosphate Pathway
- (d) Amino acid pool.

Group - C

Answer *any three* questions.

3. (a) State the mechanism of HCl secretion from parietal cells of stomach.
(b) Discuss in brief the histological characteristics of liver.
(c) What causes gallstone formation? 4+4+2

Please Turn Over

4. (a) Discuss the role of four key enzymes unique to the conversion of pyruvate to glucose via gluconeogenesis.
- (b) What is Cori cycle? Explain its significance. 6+(2+2)
5. (a) Describe the steps of mitochondrial beta oxidation of a saturated fatty acid.
- (b) How many ATPs are generated from the complete oxidation of palmitic acid?
- (c) How are ketone bodies synthesized? Why diabetic patients are prone to ketoacidosis? 4+2+(3+1)
6. (a) Mention two important amino acids decarboxylation reactions.
- (b) What is the active form of methionine? Discuss its role in transmethylation with a suitable example.
- (c) What causes phenylketonuria? 4+(1+3)+2
7. (a) What is the difference between *de novo* and salvage pathway? How purine bases are salvaged to produce AMP and GMP?
- (b) What do you mean by oxidative phosphorylation?
- (c) What is redox potential? (2+3)+3+2
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