

2021

CLINICAL NUTRITION AND DIETETICS — MAJOR

Paper : CC-5

(Nutritional Biochemistry-II)

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.*

Answer **any five** questions.

1. Answer **any five** questions : 2×5
 - (a) What is emulsification?
 - (b) What is phenylketonuria?
 - (c) Write down the name of any two ketone bodies.
 - (d) Write any two functions of lipoproteins.
 - (e) What is Cori cycle?
 - (f) How is glucose absorbed in the small intestine?
 - (g) Write down the role of vitamin K.
2. Write short notes on **any two** : 5×2
 - (a) Carnitine shuttle.
 - (b) Significance of pentose phosphate pathway.
 - (c) Role of vitamin B₁ in metabolism.
3. What is gluconeogenesis? How is pyruvate converted to phosphoenol pyruvate? How is pyruvate converted to acetyl CoA? Write down the name of the enzymes, coenzymes and cofactors, if any. 2+4+4
4. Name the steps of glycolysis where ATP is generated. How and when Pyruvate is converted to lactate? Write down the reaction step by which pyruvate is converted to lactate with name of the enzyme, coenzyme and cofactors, if any. 3+3+4
5. Write down the steps of fatty acid β -oxidation with name of the enzymes, coenzymes and cofactors, if any. How many rounds of β -oxidation are required for complete oxidation of one molecule of palmitic acid (C₁₆)? What is Ketogenesis? 6+2+2

Please Turn Over

6. What is transamination reaction? Explain with example. Write down the names of four lipoproteins. How are amino acids absorbed in the small intestine? What is the role of calcium in our body? 3+2+2+3
7. What is the rate determining step of cholesterol biosynthesis? Name two phospholipids. What is the role of vitamin C in our body? Name the disease caused by deficiency of vitamin C. Write down the name of the coenzyme form of vitamin B₁ and B₆. 2+2+3+1+2
8. Write down at least one function of
- (i) Magnesium
 - (ii) Phosphorus
 - (iii) Zinc.

Write down the biological function and deficiency disease of Vitamin A. What is alcaptonuria? 3+4+3
