B.Sc. Semester-III Examination, 2022-23

NUTRITION [Honours]

Course ID : 32311 Course Code : SH/NUT/301/C-5

Course Title : Nutritional Biochemistry-I

Time : 2 Hours Full Marks : 40

The figures in the right-hand margin indicate marks.

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

Answer **all** the questions.

UNIT–I

1. Answer any **five** of the following questions: 2×5=10

   a) Define K_m value with its significance.

   b) Distinguish between coenzyme and cofactor.

   c) Write the significance of P:O ratio.

   d) What do you mean by ketosis and ketoacidosis?

   e) Write the importance of glycogenin in the glycogenesis process.

   f) Define gluconeogenesis with its location.

   g) What do you mean by glucogenic amino acid and ketogenic amino acid?

   h) In which condition K_m = [S]?

UNIT-II

2. Answer any **four** of the following questions: 5×4=20

   a) Discuss the metabolic pathway by which glycogen is converted to glucose. 5

   b) Distinguish between competitive and non-competitive inhibition. State the characteristics of the isoenzyme. 3+2

   c) Describe β-oxidation of a 16C fatty acid. 5

   d) Discuss how ketone bodies are produced and utilized in the human body. 5

   e) Describe the different types of enzyme specificity. Give a brief idea about suicidal inhibition. 3+2

   f) What do you mean by substrate level and oxidative phosphorylation? Write the components of the electron transport chain. 3+2

UNIT-III

3. Answer any **one** of the following questions: $10 \times 1 = 10$

   a) Describe the ornithin cycle. Write the clinical features of transamination. State the role of PLP in transamination. 5+3+2

   b) Describe Kreb's cycle. How many ATPs are produced after the oxidation of one mole of glucose via Kreb's cycle? Why Kreb's cycle is called as an amphibolic cycle? 6+2+2

———————