

KANYASHREE UNIVERSITY

M.Sc. 1st Semester Examination-2024

Subject: Food & Nutrition

Course- CC 5

Nutritional Biochemistry

Full Marks-40

Time-2.00 Hours

Group A

[Answer **any four** of the following]

(5×4=20)

1. Name the enzymes involved in electron transport chain. What function does lactate dehydrogenase enzyme perform? (2.5 + 2.5)
2. What is the main purpose of urea cycle? Discuss the role of carbamoyl phosphate in this cycle. (2.5 + 2.5)
3. What is the fate of pyruvate in aerobic degradation of glucose? At which step of Krebs's cycle does GTP production occur? (3 + 2)
4. Where does glycogenolysis occur in the body? What is the net yield of ATP in TCA cycle in presence of oxygen? (2+3)
5. Discuss the hormonal regulation of blood glucose level in the body. (5)
6. Describe schematically the synthesis of mevalonate from acetyl CoA. (5)
7. State the Michaelis-Menten equation of enzyme kinetics? What is a holoenzyme? (3+2)

Group B

[Answer **any two** of the following]

(10×2=20)

1. Explain the gluconeogenesis pathway and its significance. (5+5)
2. Write down the steps of pentose phosphate pathway. Why is it important? Distinguish between hexokinase and glucokinase. (5+3+2)
3. What is enzyme inhibition? Classify different forms of enzyme inhibition with example. What is Lineweaver-Burk plot? How does it help to determine the type of enzyme inhibition? (2+3+2+3)
4. What are eicosanoids? Give an example. Explain how the de novo fatty acid biosynthesis pathway is regulated? (2+1+7)
