'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 2nd Semester Examination, 2023

CC4-PHYSIOLOGY

CHEMISTRY OF BIOMOLECULES

Time Allotted: 2 Hours | Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

1. Attempt any ***five*** questions from the following: 1×5 = 5

   (a) What is oxidative decarboxylation?

   (b) Name an imino acid.

   (c) What is the ATP yield in glycolysis under anaerobic condition?

   (d) Write one important difference between tertiary and quaternary structures of protein.

   (e) What are reducing sugars?

   (f) Name few high energy compounds.

   (g) What is the composition of lecithin?

   (h) What are essential fatty acids?

GROUP-B

Answer any *three* questions from the following 5×3 = 15

2. Describe the biosynthesis of lecithin. 5

3. (a) What is the role of tRNA in protein synthesis? 2

   (b) Write the importance of pentose phosphate pathway. 3

4. (a) Classify phospholipids. 3

   (b) What is beta-oxidation? 2

5. State the difference among different types of DNA. 5

6. Describe the different steps of urea cycle. 5

GROUP-C

Answer any *two* questions from the following 10×2 = 20

7. (a) What is Cori cycle? 2

   (b) Describe the successive steps in glycolysis, mentioning the name of enzyme in each step. 6

   (c) Why is branching in glycogen physiologically important? 2

8. (a) Describe the mitochondrial electron transport chain. 5

   (b) What are the significances of biological oxidation? 2

   (c) Write the importance of glycogenolysis. 3

9. Describe de-novo synthesis of saturated long chain fatty acid and its regulation. 10

10. (a) Trace the main pathway of gluconeogenesis from lactate to glucose. 8

    (b) What are the key enzymes of gluconeogenesis? 2

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