

Second Semester B. Sc. (Part - I) Examination

2 S - FOOD SCIENCE

(Nutritional Biochemistry of Foods)

P. Pages : 5

Time : Three Hours]

[Max. Marks : 80

- Note :** (1) All questions are compulsory.
(2) Illustrate your answers with well labelled diagrams.

1. (A) Fill in the blanks :—

- (i) Starch is hydrolysed into mixture of dextrans and maltose by an enzyme ____.
- (ii) The amino acids which forms carbohydrates are called as ____.
- (iii) The Fatty acids which should be included in diet are known as ____.
- (iv) ____ is a Fat Soluble Vitamin which function in visual cycle. 2

(B) Choose the correct alternative to complete the statement :—

- (i) Energy yield from anaerobic glycolysis is ____ (2 ATPs, 8 ATPs)

5. (a) Classify Lipids giving examples. 4
(b) Describe β -oxidation of fatty acid. 4
(c) What do you understand by essential fatty acids ? Give examples. 4

OR

- (p) Give deficiency effects of fatty acids. 4
(q) Discuss nutritional importance of fats. 4
(r) What are saturated and unsaturated fatty acids ? 4
6. (a) Describe the functions of calcium. 4
(b) Give the important functions of Vitamin - D. 4
(c) Give deficiency symptoms of Vitamin - B₁. 4

OR

- (p) Describe the role of Vitamin - A in visual cycle. 4
(q) Describe nutritional deficiency effects of Iron. 4

- (ii) HCl is the constituent of _____
(Gastric juice, Pancreatic juice)
- (iii) The first enzyme which convert glucose to Glucose 6-Phosphate is _____
(Amylase, Hexokinase)
- (iv) The sugar present in the milk is _____
(Lactose, Galactose) 2

(C) Answer the following in **one** sentence :—

- (i) Name the enzymes in pancreatic juice that digest protein.
- (ii) Name any two essential amino acids.
- (iii) Which is the protein found in Egg White ?
- (iv) Name the reserve carbohydrate stored in liver and muscle. 4

2. Describe in detail digestion and absorption of dietary proteins.

OR

Describe the nutritional importance of protein. Give effect of deficiency of protein. 12

3. Describe the following :—

- (a) Digestion of carbohydrate. 4
- (b) Energy yield of glycolysis. 4
- (c) Nutritional importance of carbohydrates. 4

OR

- (p) Conversion of carbohydrates to Fat. 4
- (q) Oxidative decarboxylation of pyruvate to acetyl COA. 4
- (r) Synthesis of glycogen from glucose. 4

4. (a) Define and classify enzymes. 4

(b) Describe the effect of temperature on enzyme activity. 4

(c) Describe intestinal digestion of carbohydrates. 4

OR

- (p) Describe composition and functions of saliva. 4
- (q) How are dietary proteins digested in stomach ? 4
- (r) Describe the effect of pH on enzyme activity. 4

- (r) Give important function and deficiency effects of Vitamin-C. 4

7. Describe in detail importance of water in body. "Water as a nutrient" Explain.

OR

Describe principle and applications of any one analytical technique used in Biochemistry. 12



