

B.Sc. (Part—I) Semester-II Examination
2S-FOOD SCIENCE
(Nutritional Biochemistry of Foods)

Time : Three Hours]

[Maximum Marks : 80

Note :—(1) All questions are compulsory.

(2) Illustrate your answers with well labelled diagram if necessary.

1. (A) Fill in the blanks : 2
- (i) Night blindness occurs due to the deficiency of vit
 - (ii) Protein energy deficient nutrient in age 1 – 5 years is called
 - (iii) Enzyme present in salivary gland is
 - (iv) β cell produces hormone.
- (B) Choose the correct options : 2
- (i) Average life span of RBC is :
 - (a) 200 days (b) 85 days
 - (c) 120 days (d) 50 days
 - (ii) The essential source of energy for brain are :
 - (a) fats (b) carbohydrates
 - (c) proteins (d) vitamins
 - (iii) Humans are unable to digest :
 - (a) Starch (b) Complex carbohydrate
 - (c) Proteins (d) Cellulose
 - (iv) Dietary fats in the intestine are hydrolysed by :
 - (a) Tricylglycerol lipase (b) Adenylate cyclase
 - (c) Pancreatic lipase (d) Protein kinase
- (C) Answer in one sentence : 4
- (i) What are the chemical elements that form living being ?
 - (ii) Why is iodine important for human beings ?
 - (iii) What are catalysts ?
 - (iv) Where in the GI tract does the majority of nutrient digestion and absorption take place ?
2. (A) Discuss the biological function of proteins. 4
- (B) How are proteins digested by gastric secretion ? 4
- (C) Discuss oxidation and non-oxidation deamination. 4
- OR**
- (P) Discuss the metabolism of Ammonia. Give its functions. 4
- (Q) Give the diagrammatic representation of Urea cycle. 4
- (R) Explain the protein digestion with the enzyme involved. 4

3. Explain TCA or citric acid cycle with its energetics. 12

OR

Give Diagrammatic representation of Glycolysis. Explain the steps involved in Glycolysis with its energetics. 12

4. (A) Give the functions of co-enzymes. 4
(B) Define specificity of enzymes. 4
(C) Explain factors affecting enzyme activity. 4

OR

- (P) What is the optimum temperature of enzyme activity ? Give its diagram. 4
(Q) Define enzymes, endoenzyme, exoenzyme, apoenzyme. 4
(R) Give the characteristic of enzymes. 4

5. Explain the β -oxidation of fatty acids. 12

OR

Give the function of fatty acid and explain digestion and absorption of lipids. 12

6. (A) Explain metabolic functions of vit. A and carotenes. 4
(B) Describe Absorption and Metabolism function of vit. D. 4
(C) Discuss absorption and metabolic function of vit. F. 4

OR

- (P) Explain metabolic function of any two water soluble vitamins. 4
(Q) Discuss function and deficiency systems of vit. B₆. 4
(R) Give metabolic function of Iron and Calcium. 4

7. (A) Discuss electrophoresis. 4
(B) Describe paper chromatography with example. 4
(C) What is spectrophotometer ? Give its principle. 4

OR

- (P) Describe ion exchange chromatography. 4
(Q) Discuss function of water. Give its input and output in human body. 4
(R) Discuss thin layer chromatography. 4