AS–1392

B.Sc. Part—I (Semester—II) Examination

FOOD SCIENCE

(Nutritional Biochemistry of Foods)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) **All** questions are compulsory.
(2) Draw a neat diagram if necessary.

1. (a) Fill in the blanks :
   (i) _____ are the building blocks of body.
   (ii) _____ is the main source of energy for brain.
   (iii) Night blindness may cause due to deficiency of vitamin _____.
   (iv) _____ is known as a universal solvent. 2

   (b) Choose the correct alternative :
   (i) _____ is the enzyme present in saliva.
   (a) Trypsin (b) Pepsin
   (c) α-amylase (d) Protease
   (ii) Spectrophotometry uses the principle of :
   (a) Newtons law (b) Michalis-Mentan equation
   (c) Beer-Lamberts law (d) None of above
   (iii) The amino acids necessary to take from diet :
   (a) Essential amino acids (b) Non-essential amino acids
   (c) Aliphatic amino acids (d) None of above
   (iv) The fatty acids containing double or triple bonds :
   (a) Saturated fatty acids (b) Unsaturated fatty acids
   (c) Essential fatty acids (d) Non-essential fatty acids 2

   (c) Answer in **one** sentence :
   (i) What are the water soluble vitamins ?
   (ii) Define fats/oils.
   (iii) What are holoenzymes ?
   (iv) Give the names of any two monosaccharides. 4

2. Explain in detail digestion and absorption of protein. 12

OR

Describe synthesis of carbohydrate and fats from amino acids and add a note on oxidation of amino acids. 12

3. (a) Describe significance and energy yield of glycolysis. 4
   (b) Explain synthesis of fatty acids from carbohydrate. 4
   (c) Give outline of TCA cycle. 4

OR

   (p) Describe transport of glucose in cells. 4
   (q) Explain Nutrional importance of carbohydrates. 4
   (r) Give classification of carbohydrates. 4

4. (a) Describe enzyme specificity. 4
   (b) Explain role of enzyme in intestinal digestion. 4
   (c) Explain any four characteristics of enzymes. 4

OR

   (p) Explain role of enzyme in stomach. 4
   (q) Describe classification of enzyme. 4
   (r) Explain in detail effect of temperature on enzyme activity. 4

5. (a) Explain functions of fats. 4
   (b) Describe digestion of fats. 4
   (c) Explain effects of deficiency of fats. 4

OR

   (p) Describe the process of absorption and transport of fats. 4
   (q) Explain β-oxidation of fatty acid. 4
   (r) Explain structure and functions of cholesterol. 4

6. (a) Describe dietary sources and daily requirement of Vitamin B_1 and B_6. 4
   (b) Describe Biochemical functions of Vitamin E. 4
   (c) Explain deficiency effect of Vitamin A and Vitamin K. 4

OR

   (p) Explain functions of iron. 4
   (q) Describe importance of iodine in nutrition. 4
   (r) Describe role of vitamin and mineral in digestion and absorption process. 4

7. Describe in detail properties and functions of water in human body and add a note on ELISA. 12

OR

Describe in detail principle and application of electrophoresis and spectrophotometry. 12