AT – 286

First Semester B. Sc. (Part – I) Examination

1 S – FOOD SCIENCE

(Basic Chemistry of Food)

P. Pages : 6

Time : Three Hours] [Max. Marks : 80

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

1. (A) Fill in the blanks :—

(i) The micronutrient _____ is necessary for the formation of muscles.

(ii) Beans / Pulses are the good sources of nutrient _____.

(iii) Fructose is different from glucose as it have _____ functional group in its structure.

(iv) Fats can provide _____ kcal of energy per gram. 2

(B) Choose the correct alternative :—

(i) Vitamin C is a _____ vitamin.

(a) Fat soluble

(b) Water soluble

(c) Soluble in both

(d) Soluble in none

(ii) Unit operations are the ____ processes.

(a) Chemical

(b) Microbiological

(c) Physical

(d) None of above

(iii) Animal Fats contains high percentage of _____ fatty acids.

(a) Saturated

(b) Unsaturated

(c) Both in equal

(d) None of above

(iv) If the nutrients are oversupplied then the term known as _____.

(a) BMR

(b) Anemia

(c) Hyperalimentation

(d) None of above. 2

(C) Answer in One sentence :—

(i) What is obesity ?

(ii) Define buffer.

(iii) What are the minerals important in body structure ?

(iv) Define disaccharides. 4

2. (A) What is Normality and Molarity ? 4

(B) Define pH. What is pH scale ? 4

(C) Calculate the molecular weight of $KMnO_4$ (Potassium Permanganate)
(Given → Atomic Weight of K → 39
Mn → 55
O → 16) 4

OR

(P) If 158 g of $KMnO_4$ dissolve in water to prepare 1000 ml solution. What is the Normality of this solution ?
(Given → Valency of $KMnO_4 = 5$) 4

(Q) Define melting point and boiling point. 4

(R) What are unit operations ? Classify with examples. 4

3. Classify nutrients. Give the Food sources. Explain balanced diet and malnutrition.

OR

What is BMR ? Explain the factors affecting BMR. Draw a diagram of Bomb calorimeter. 12

4. (A) Give the Food sources and importance of dietary fibres. 4

(B) What are monosaccharides ? Draw the structure of glucose. 4

(C) Discuss Polysaccharides. 4

OR

(P) Give an account of functions of carbohydrates. 4

(Q) Give the Physical properties and any two chemical properties of sugars. 4

(R) Give the classification. 4

5. (A) Define Proteins. Give the Food sources. 4

(B) Differentiate the essential and non – essential amino acids. 4

(C) What is denaturation of protein ? Explain the affecting factors. 4

OR

(P) What are amino acids ? Give the general structure. 4

(Q) Explain the structure of proteins. 4

(R) Give the functions of proteins. 4

6. What are lipids ? Give the Classification, Food sources and Functions.

OR

Give an account of fatty acids. Classify. Explain the properties with the importance of saturation. 12

7. Give the functions, food sources and deficiency symptoms of —

(A) Vitamin D. 4

(B) Vitamin C. 4

(C) Vitamin A. 4

OR

(P) Calcium. 4

(Q) Phosphorus. 4

(R) Iron. 4