

B.Sc. (Part-I) (Semester-I) Examination
FOOD SCIENCE
(Basic Chemistry of Foods)

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) All questions are compulsory.

(2) Draw diagrams and give chemical equations wherever necessary.

1. (A) Fill in the blanks :

(i) _____ are as structural monomers for proteins.

(ii) Beri-Beri disease is due to deficiency of _____.

(iii) _____ is a body building Nutrient.

(iv) Scurvy disease is due to deficiency of _____.

2

(B) Choose the correct answer :

(i) Unit of temperature is :

(a) Centigrade ($^{\circ}\text{C}$)(b) Fahrenheit ($^{\circ}\text{F}$)(c) Kelvin ($^{\circ}\text{K}$)

(d) All of the above

(ii) Sucrose is the name of :

(a) Maltose

(b) Common sugar

(c) Common starch

(d) Fructose

(iii) How many calories do we get give from 1 gm fat ?

(a) 6 calories

(b) 8 calories

(c) 4 calories

(d) 9 calories

(iv) Which disease occurs due to deficiency of Vitamin 'A' ?

(a) Rickets

(b) Nightblindness

(c) Beriberi

(d) Anemia

2

(C) Answer in one sentence :

(i) What is Atomic weight ?

(ii) Define MUFA.

(iii) Define Nutrition.

(iv) Define Essential fatty acid.

4

2. (A) 20 gm of NaOH is dissolved in water to make 250ml solution. What will be the normality (given Equivalent wt : w) ?

4

(B) Define Surface Tension and Viscosity with their units.

4

(C) Give the classification of unit operations.

4

OR(P) Calculate the equivalent weight of Na_2CO_3 (Given At. wt of Na \rightarrow 23, C \rightarrow 12, O \rightarrow 16 and valency = 2.

4

(Q) Define pH and buffer, give pH scale.

4

(R) Define Equivalent weight with formula.

4

3. (A) Write food groups with nutrient content. 4
 (B) Give importance of Balanced diet. 4
 (C) Give Deficiency systems of Kwashiorkor and Marasmus. 4

OR

- (P) Discuss about factors affecting BMR. 4
 (Q) Discuss about Bomb calorimeter. 4
 (R) Give importance of Nutrients. 4
 4. (A) Classify carbohydrates with examples. 4
 (B) Difference between amylose and amylopectin. 4
 (C) Give importance of fiber in diet with food source. 4

OR

- (P) Discuss properties of sugar. 4
 (Q) Define pectic substance. 4
 (R) What are Polysaccharides and their food sources ? 4
 5. Classify protein and amino acids food sources. Give names of essential and non essential amino acids. 12

OR

- Discuss about Physical and Chemical properties of proteins. 12
 6. Discuss about properties of Lipids and Food Sources of Lipids. 12

OR

- Classify Lipids, food sources of fatty acids and importance of fatty acids. 12
 7. (A) Classify vitamins and minerals 4
 (B) Discuss about B₁ and B₂ with characteristics, food sources. 4
 (C) Define function of Vitamin A and food sources. 4

OR

- (P) Give deficiency symptoms and prevention of Vitamin 'D' and 'C'. 4
 (Q) Discuss general characteristics of Vitamins and Minerals. 4
 (R) Define deficiency systems of Iron and Calcium. 4