

- (vi) THE (f) deficiency results in pellagra
 (vii) Retinal (g) deficiency causes beri beri
 (viii) Vitamin K (h) Serves as an antioxidant
 (ix) Vitamin H (i) stored in liver
 (x) Vitamin B12 (j) Biotin

(b) Minerals play an important role in human life. Justify your answer. (10+5)

5. (a) Write short notes on **any four** of the following:

- (i) Tertiary structure of proteins
 (ii) Globular and Fibrous proteins
 (iii) Denaturation of proteins
 (iv) Starch
 (v) Role of vitamin C
 (vi) Gums

(b) Differentiate between fats and oil. Give the skeletal structure of a lipid which on hydrolysis yields glycerol and palmitic acid.

(c) Indicate the symptoms associated with vitamin A deficiency and hypervitaminosis. (10+3+2)

(2000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1236

D

Unique Paper Code : 2174001006

Name of the Paper : GE-11 Chemistry of Food Nutrient

Name of the Course : B.Sc. (Prog)/BSc.(Hons)

Semester : I

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **FOUR** questions.in all.
3. All questions are carrying equal marks.

1. (a) Explain the following:

- (i) Differentiate between anomers and epimers with suitable example.

P.T.O.

- (ii) Structure and functions of two natural monosaccharides.
- (iii) Differentiate between aldo and keto sugars with example.
- (b) What happens when aqueous solution of D-Glucose is kept for some time? Name the phenomenon and discuss the equilibrium involved.
- (c) Discuss the importance and structure of polysaccharide (only starch and pectin) in food chemistry. (2+2+1+5+5)
- 2. (a) What is the significance of iodine number? Calculate the iodine number of glyceryl trioleate having Mol. Wt. 884 (Mol. Wt. of Iodine = 127).
- (b) What are triglycerides and phospholipids? Give their biological importance.
- (c) Give the structures of omega-3 and omega-6 fatty acids. Discuss their important role in biological system. (5+5+5)
- 3. (a) How are proteins related to amino acid? What do you understand by Zwitter ion? Discuss the primary and secondary structure of proteins.

- (b) Write the structure of:
 - (i) An amino acid with negative charge
 - (ii) Essential and non-essential amino acid
 - (iii) A sulphur containing amino acid
 - (iv) Basic amino acid
 - (v) Gly-Gly.
- (c) Discuss the physicochemical properties of proteins. (5+5+5)
- 4. (a) Match the following:

Vitamins	Characteristics/ deficiency diseases
(i) FAD	(a) deficiency results in clotting disorder
(ii) Thiamin	(b) Biological active form of thiamine
(iii) Niacin	(c) Coenzyme form of folic acid
(iv) TPP	(d) Coenzyme form of Vitamin A
(v) Vitamin E	(e) Derived from riboflavin