

(d) Humans can synthesize ascorbic acid.

(b) Discuss the physiological roles of fat-soluble vitamins. (5)

(c) What are microminerals? Discuss the importance of iron and zinc in our body mentioning their deficiency effects. (5)

5. Differentiate between the following: (with suitable examples) (**any three**): (3×5=15)

(a) Starch & Cellulose

(b) Saturated & Unsaturated fatty acids

(c) α -helix & β -pleated sheet structures of proteins

(d) ω -3 & ω -6 Fatty acids

6. Write short notes on the following: (**any three**) (3×5=15)

(a) Non-enzymatic browning

(b) Polenski Value

(c) Biological roles of proteins

(d) Water-soluble vitamins

(1000)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3521

I

Unique Paper Code : 2174001006

Name of the Paper : Chemistry of Food Nutrients

Name of the Course : **B.Sc. (H) / B.Sc. Prog. : GE**

Semester : I/III/V

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 out of **six**.
3. **All** questions carry equal marks i.e. **15** marks.
4. Attempt **all** parts of the questions together.

1. (a) What are carbohydrates? Discuss their role as sweeteners in food. (5)

P.T.O.

- (b) What is inversion of sugar? Explain in details. (5)
- (c) What happens when an aqueous solution of α -D-glucose is kept for some time? Name the phenomenon and discuss in detail. (5)
2. (a) How will you differentiate between real butter and vegetable ghee using Reichert Meissl value & Polenski value. (5)
- (b) What is Saponification Number? Calculate the Saponification number of a fat with Molecular Weight 884. (5)
- (c) What is flavour reversion in oils? How this is different from rancidity? (5)
3. (a) What is peptide linkage? What do mean by N-terminal and C-terminal in a polypeptide chain. Explain giving structure. (5)
- (b) Discuss different types of bonds used in stabilizing the tertiary structure of proteins. (5)
- (c) What is the effect of temperature and pH on proteins? Discuss in detail. (5)

4. (a) Choose the correct option : (1×5=5)
- (i) Which vitamin helps in blood clotting?
(a) Vitamin A (b) Vitamin D
(c) Vitamin K (d) Vitamin B
- (ii) Which of the following vitamin can be synthesized in our body?
(a) Vitamin A (b) Vitamin D
(c) Vitamin K (d) None of all
- (iii) Which of the following vitamin contain cobalt ?
(a) Vitamin B₁ (b) Vitamin B₂
(c) Vitamin B₆ (d) Vitamin B₁₂
- (iv) Which of the following is a fat-soluble vitamin?
(a) Vitamin B (b) Vitamin K
(c) Vitamin B₁₂ (d) Vitamin C
- (v) The incorrect statement about ascorbic acid is
(a) It shows antioxidant activity.
(b) It is also known as vitamin C.
(c) Its deficiency causes scurvy disease.