

(viii) Soluble dietary fibres produces which of the following important beneficial substance?

- (a) non-starch polysaccharides (b) PUFA
(c) SCFA (d) probiotics.

(ix) One cationic surfactant is

- (a) lecithin
(b) quaternary ammonium salt
(c) propylene glycol ester
(d) none of these

(x) The food gum commonly used in candies is

- (a) carrageenans (b) gum Arabic
(c) xanthan gum (d) guar gum.

Group - B

2. (a) What are antioxidants? What are their beneficial effects?

(b) Compare the mode of action of any two antioxidants.

6 + 6 = 12

3. (a) Define dietary fibre. Give examples of some natural sources of it.

(b) What changes of fibre occur in intestine?

(c) Describe the health benefits of both soluble and insoluble fibres.

(1 + 3) + 2 + (3 + 3) = 12

Group - C

4. (a) What are different non-bacterial agents associated with food spoilage?

(b) What is aflatoxin? Write its mode of action.

6 + 6 = 12

5. (a) Write notes on *Mycobacterium* And *Salmonella* contamination of different foods.

(b) Write different methods for detection of food pathogens.

6 + 6 = 12

Group - D

6. (a) Define nutraceutical and mention its properties. What is the advantage of nutraceuticals over pharmaceuticals?

(b) Discuss the importance of the following compounds as nutraceutical: PUFA, Aequorin

(3 + 3) + (3 + 3) = 12

7. (a) Mention a toxic component present in cereal. Describe its structure.

(b) How it can be reduced?

(1 + 2) + 9 = 12

Group - E

8. (a) How thioesterase and elongase enzymes are exploited for genetic modification of plant oil?

(b) 'Ascorbic acid is more potent antioxidant than didehydro ascorbic acid'- Explain.

(3 + 3) + 6 = 12

9. (a) Why lycopene is important for production of functional food?

(b) What is the mode of action of parabens and epoxides?

6 + (3 + 3) = 12

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 5 (five) from Group B to E, taking at least one from each group.

Candidates are required to give answer in their own words as far as practicable.

Group - A
(Multiple Choice Type Questions)

1. Choose the correct alternative for the following: 10 × 1 = 10
- (i) Glutathione acts as antioxidant due to presence of
 - (a) sulphhydryl group
 - (b) carbonyl group
 - (c) hydroxyl group
 - (d) none of these.
 - (ii) Allium present in onion is a
 - (a) colouring agent
 - (b) flavouring agent
 - (c) humecant
 - (d) none of these.
 - (iii) Benzoic acid is added in food as
 - (a) antioxidant
 - (b) emulsifier
 - (c) preservative
 - (d) none of these.
 - (iv) Which of the following is a food pigment?
 - (a) diacetyl
 - (b) vanillin
 - (c) lycopene
 - (d) lipase.
 - (v) Commonly used antioxidant is
 - (a) vitamin C
 - (b) vitamin D
 - (c) vitamin K
 - (d) none of these.
 - (vi) GPC is obtained from
 - (a) fish oil
 - (b) mother's milk
 - (c) NSP
 - (d) turmeric.
 - (vii) Aflatoxins are produced by
 - (a) a flavus
 - (b) a oryzae
 - (c) a niger
 - (d) penicillium sp.