



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Tech(FT)/SEM-1/MFT-103C/2012-13  
2012**

**FUNCTIONAL FOODS AND NUTRACEUTICALS**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

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

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) Major functional component present in vegetables is
  - a) total dietary fibre      b) soluble fibre
  - c) crude fibre      d) total carbohydrate.
- ii) Soya protein can improve bone health due to presence of the functional phytocomponents namely
  - a) free amino acids      b) hemagglutinins
  - c) bioactive peptides      d) isoflavones.
- iii) Successful incorporation of soy-protein in mayonnaise requires the ..... property of the protein.
  - a) foam formation
  - b) emulsion forming ability
  - c) gelling ability
  - d) all of these.



- iv) Carrot loses its functional value on
  - a) tray-drying
  - b) washing
  - c) freezing
  - d) none of these.
- v) Development of a functional food product essentially requires
  - a) detection of functional component in the food product
  - b) both detection and clinical trial of the product
  - c) only clinical trial of the product
  - d) regular quality analysis of the product.
- vi) Two fatty acids mainly identified as functional component are
  - a) Oleic and linoleic acids
  - b) Linoleic and myristic acids
  - c) Linoleic and linolenic acids
  - d) Eicosa-pentaenoic and oleic acids.
- vii) The major polyphenolic constituent of green tea having cancer preventive property is due to
  - a) beta-carotene
  - b) anthocyanin
  - c) epigallocatechin gallate
  - d) all of these.
- viii) The example of NSP compound is
  - a) cellulose with beta-glycosidic bond
  - b) hemicelluloses
  - c) sugar acids
  - d) all of these.



- ix) The full form of FOS is
- a) Fructan-oligosaccharide
  - b) Fructo-oligosaccharide
  - c) Fructose gallacto-oligosaccharide
  - d) none of these.
- x) Kefir is a well known probiotic product originated from
- a) fermented vegetable product
  - b) symbiotic beverage
  - c) fermented soy product
  - d) traditional fermented milk drink.

**GROUP - B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. Highlight a brief overview about functional food product in Indian market.
3. "Natural food ingredient is a rich source of different functional components." Comment on the statement.
4. How will you evaluate the regulatory perspective of nutraceuticals in India ?
5. What are dietary fibres ? Classify them based on solubility and fermentability with suitable examples.
6. What are the natural antioxidants and phytochemicals present in garlic ? Mention their therapeutic effects.



**GROUP - C**  
**( Long Answer Type Questions )**

Answer any *three* of the following.

$3 \times 15 = 45$

7. What are the physiologically functional substances present in soybeans ? Mention them with their physiological functions.

What are the different types of isoflavones present in soy-protein products and how soy-processing helps in retention of isoflavones in soy-protein and protein-based products ? Give a brief overview of functionality of soy in various food products.

$2 + 2 + 5 + 6$

8. What is beta-glucan ? Elaborate different functional benefits of beta-glucans. Highlight different cereal-based products involving this functional component.
9. Outline recent development in functional foods in different sectors of food products with special mentioning about its current market and consumer acceptance.
10. What are the main criteria of prebiotics ? Write a note on Inuline as prebiotic component. Describe the production process of inuline from any source. Discuss the beneficial effects of prebiotics on health.
11. Define functional foods. Mention about some natural and processed food items with their functional components. Discuss the health claims approved by FDA. What are termed as 'probiotics' ? Describe the role of probiotic on blood cholesterol and cancer treatment. What are the probiotic foods available in the market ? What is meant by symbiotic food ?

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