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BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Sc.(FND)-Hons-2023
Course Name – Functional Food and Nutraceuticals
Course Code - BFD40114
(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Which of these is an example of a functional food?
 - a) White bread
 - b) Orange juice fortified with calcium
 - c) Candy bars
 - d) Plain water
- (ii) Classify probiotic as-
 - a) Precursor nutrients
 - b) Beneficial bacteria
 - c) Antioxidants
 - d) Zoochemicals
- (iii) Choose the correct organism where zoochemicals are naturally occurring compounds:
 - a) Plants
 - b) Animals
 - c) Fungi
 - d) Algae
- (iv) Which of the following is an example of a xanthophyll carotenoid?
 - a) Beta-carotene
 - b) Lycopene
 - c) Lutein
 - d) Phytoene
- (v) Which of the following is a major dietary source of isoflavones?
 - a) Wheat
 - b) Soybeans
 - c) Apples
 - d) Milk
- (vi) which color in plants can be seen due to the presence of carotenoid ?
 - a) Red and orange
 - b) Blue and green
 - c) Black and brown
 - d) White and yellow
- (vii) Identify a key challenge in the formulation of functional foods.
 - a) Overproduction of flavors
 - b) Stability of bioactive compounds
 - c) Increasing sugar content
 - d) Reducing protein levels
- (viii) Choose the correct medium through which Nutraceuticals are typically delivered as functional foods.
 - a) Capsules and pills
 - b) Beverages, bars, and powders
 - c) Injections
 - d) Aerosols

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- (ix) Identify the antioxidant that is present in high levels in Green tea ?
- a) Lycopene
b) Catechins
c) Resveratrol
d) Lutein
- (x) Which of the following foods is the richest source of omega-3 fatty acids?
- a) Flaxseeds
b) Olive oil
c) Almonds
d) Chicken
- (xi) Which of the following functional foods is known for its immune-boosting properties?
- a) Garlic
b) Refined sugar
c) White rice
d) Soft drinks
- (xii) Which of the following functional foods is known to support brain health?
- a) Walnuts
b) French fries
c) Candy bars
d) Ice cream
- (xiii) Which technological treatment is known to enhance the bioavailability of some antioxidants like lycopene?
- a) Frying
b) Baking
c) Microwaving
d) Blanching
- (xiv) Recall the term used for claims made by manufacturers about the health benefits of a nutraceutical.
- a) Drug claim
b) Health claim
c) Safety claim
d) Medical claim
- (xv) Discover the agency responsible for regulating dietary supplements in the European Union.
- a) European Food Safety Authority (EFSA)
b) European Medicines Agency (EMA)
c) Food and Drug Administration (FDA)
d) Health Canada

Group-B

(Short Answer Type Questions)

$$3 \times 5 = 15$$

2. Describe the concept of prebiotics and its role as functional foods. (3)
3. Determine the sources of lycopene and explain their health benefits. (3)
4. Summarize the adverse effects of phytosterols. (3)
5. Interpret the concept of toxicity in relation to nutraceuticals. (3)
6. Evaluate the role of plant sterols in human health and their application in disease prevention. (3)

OR

Explain the role of olive oil in human health and its impact on disease prevention. (3)

Group-C

(Long Answer Type Questions)

$$5 \times 6 = 30$$

7. How are nutraceuticals classified? Provide examples for each category. (5)
8. Describe Food for Special Dietary Uses (FSDU) and their significance. Give examples. (5)
9. Explain how antioxidant activity varies during different food processing. (5)
10. Explain the role of tea polyphenols in promoting health and preventing chronic diseases. (5)
11. Explain the role of broccoli in cancer prevention and overall health. (5)
12. Compose the regulations governing nutraceuticals in India. (5)

OR

Compose the adverse effects and toxicity of omega-3 fatty acid supplements. (5)
