ASSIGNMENT SET-I

Department of Nutrition

Mugberia Gangadhar Mahavidyalaya

M.VOC(FTNM):

Semester-I

Paper Code:FTNM15

Unit -1

1. Definition and Classes of Functional Foods:
2. Define functional foods and provide examples of different classes.
3. Discuss the current global status of functional foods, including market trends and consumer preferences.
4. Explore the status and trends of functional foods in the Indian market.
5. Explain the concept of new product development in the context of functional foods.
6. Define nutraceuticals and categorize them into different classes.
7. Discuss the safety considerations involved in the development and consumption of functional foods and nutraceuticals.
8. Outline effective marketing strategies for promoting functional foods.
9. Analyze consumer perceptions and attitudes toward functional foods.
10. Discuss factors influencing consumer decision-making when choosing functional food products.
11. Explain the economic considerations involved in the production and marketing of novel foods.

Unit -2:

1. Explain the methods used to assess the nutritional status of individuals.
2. Discuss the importance of regular nutritional assessments for different target groups.
3. Dietary Requirements for Infants and Young Children:

4. Outline the specific dietary requirements for infants and young children.
5. Discuss the role of breast milk and complementary feeding in meeting nutritional needs.
6. Dietary Significance of Dairy Nutrients:
7. Discuss the nutritional composition of dairy products.
8. Explain the dietary significance of key nutrients found in dairy, such as calcium and vitamin D.

Unit – 3:

1. Define food fortification and explain its purpose in enhancing the nutritional value of foods.
2. Discuss the role of fortification in addressing nutrient deficiencies at a population level.
3. Explain the techniques used for fortifying dairy foods with essential minerals.
4. Discuss the considerations and challenges in fortifying dairy products with vitamins.

Unit – 4:

1. Outline the key nutritional requirements for infants during the first year of life.
2. Discuss the significance of breast milk and formula in meeting these nutritional needs.
3. Explain the formulation of a standard infant diet for normal development.
4. Discuss the importance of introducing complementary foods and their timing.
5. Discuss key considerations in designing foods for the elderly, including texture and nutrient density.

Unit – 5:

1. Explain the technological principles behind the reduction of calories in food products.
2. Discuss the various approaches to achieving calorie reduction in food formulations.
3. Identify alternative ingredients and approaches used for reducing calories in food products.
4. Discuss the challenges and benefits associated with incorporating calorie-reducing alternatives.

Unit – 6:

1. Discuss the physiological role of sodium in the human body.
2. Explain how sodium contributes to various bodily functions, including fluid balance and nerve transmission.
3. Provide recommendations for daily sodium intake for different age groups.
4. Discuss the potential health risks associated with excessive sodium consumption.
5. Define bio-flavors and explain their role in food products.
6. Discuss natural sources of bio-flavors and their applications in the food industry.
7. Identify challenges in formulating foods with reduced sodium while maintaining desirable flavors.

8. Discuss the importance of consumer acceptance in the success of sodium reduction initiatives.

Unit – 7

1. Define sports foods and their purpose in the context of sports nutrition.
2. Discuss how sports foods differ from regular foods in terms of composition and function.
3. Identify essential ingredients commonly found in sports foods.
4. Discuss the role of carbohydrates, proteins, and fats in formulating effective sports nutrition products.
5. Explain how dairy components contribute to the nutritional profile of sports foods.
6. Discuss the benefits of incorporating dairy-derived ingredients in sports nutrition products.
7. Name common dairy proteins used in sports foods.
8. Discuss the unique properties of dairy proteins and their role in muscle recovery.

Unit – 8:

1. Define herbs in the context of plant-based materials used for culinary and medicinal purposes.
2. Discuss the versatility of herbs in traditional and modern applications.
3. Categorize herbs into different classes based on their characteristics or uses.
4. Provide examples of herbs from each class and their common applications.
5. Explore the medicinal properties of herbs and their historical use in traditional medicine.
6. Discuss how herbs contribute to health and wellness.

Unit – 9:

1. Define prebiotics and their role in the context of gut health.
2. Explain how prebiotics differ from probiotics.
3. Define symbiotic foods and explain the synergy between probiotics and prebiotics.
4. Discuss how symbiotic foods contribute to gut health.
5. Discuss technological considerations in the production of probiotic foods.
6. Explore challenges and solutions related to maintaining probiotic viability during food processing.
7. Highlight recent advancements in probiotic research.
8. Discuss novel strains, delivery methods, or formulations that have emerged in the field.

Unit – 10:

1. Define phytochemicals and their significance in plant-based foods.
2. Discuss the diverse range of phytochemicals found in various plant sources.
3. Explain how phytochemicals can be incorporated into functional foods.
4. Discuss the challenges and benefits of using phytochemicals in food formulations.
5. Provide examples of functional foods enriched with specific phytochemicals.

6. Discuss how these foods contribute to overall health and well-being.
7. Explain the health benefits of phytosterols.
8. Discuss how phytosterols contribute to cholesterol management.
9. Define phytoestrogens and their role in the body.
10. Discuss food sources rich in phytoestrogens and their potential health effects.

Unit – 11:

1. Identify specific functional foods known for their cholesterol-lowering properties.
2. Discuss the mechanisms through which these foods impact cholesterol levels.
3. Name key nutraceuticals used in managing cholesterol.
4. Explain how these nutraceuticals contribute to lipid profile improvement.
5. Functional Foods and Nutraceuticals for CVD Prevention:
6. Discuss the role of functional foods and nutraceuticals in preventing cardiovascular diseases.
7. Highlight specific dietary components effective in CVD risk reduction.

Unit – 12:

1. Explain how nutrients can act as gene modulators.
2. Discuss the significance of nutrient-gene interactions in human health.
3. Explore the impact of specific nutrients on the onset and progression of puberty.
4. Discuss how nutrition influences the timing of puberty in both males and females.
5. Define xenoestrogens and their role as endocrine disruptors.
6. Explain the mechanism through which xenoestrogens affect hormonal balance.
7. Definition and Principles of Nutrigenomics:
8. Define nutrigenomics and its significance in personalized nutrition.
9. Explain the principles guiding nutrigenomic research.
10. Define epigenetics and its role in gene expression.
11. Discuss how epigenetic modifications can be influenced by environmental factors, including nutrition.

Unit – 13

1. Define Foodomics and its scope in the field of food science.
2. Discuss how Foodomics integrates various disciplines for comprehensive food analysis.
3. Define Nutrigenomics and its role in personalized nutrition.
4. Discuss the relationship between genetics and dietary factors.
5. Explain how genetic variability influences individual responses to diet.
6. Define Nutrimetabolomics and its role in studying the metabolic response to nutrition.

7. Discuss how Nutrimetabolomics complements Nutrigenomics.
8. Define Nutriproteomics and its focus on studying proteins in the context of nutrition.
9. Discuss the role of proteins in various physiological processes related to nutrition.

Unit – 14:

1. Define food nanotechnology and its applications in the food industry.
2. Discuss the scope of how nanotechnology is utilized in food-related processes.

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