

ASSIGNMENT SET-III**Department of Nutrition****Mugberia Gangadhar Mahavidyalaya****M.VOC(FTNM):****Semester-I****Paper Code:FTNM15****Unit -1:**

1. Discuss the factors influencing the cost structure of functional food production.
2. Explore strategies for optimizing production costs without compromising product quality.
3. Highlight recent innovations and advancements in various categories of dairy products.
4. Discuss how these advances address consumer preferences and industry challenges.
5. Explain the regulatory frameworks governing nutraceuticals, including the role of international standards such as CODEX.
6. Discuss the challenges and opportunities associated with regulatory compliance in the nutraceutical industry.

Unit -2:

1. Explain the nutritional challenges faced by the elderly.
2. Discuss dietary recommendations to address the unique nutritional needs of the aging population.
3. Provide examples of deficiency diseases related to micronutrients.
4. Discuss strategies for preventing and addressing micronutrient deficiencies.
5. Explore the therapeutic applications of dairy products in addressing nutritional deficiencies.
6. Discuss how dairy can be used as a valuable source of nutrients in clinical settings.

7. Identify key minerals found in milk and dairy products.
8. Discuss the role of these minerals in supporting overall health.
9. Explain the presence and significance of CLA in dairy products.
10. Discuss potential health effects associated with CLA consumption.
11. Discuss the process of milk fermentation and its impact on nutritional content.
12. Highlight the health benefits associated with the consumption of fermented dairy products.

Unit – 3:

1. Explain the nutritional significance of dietary fibers in the diet.
2. Discuss the impact of dietary fibers on digestive health and overall well-being.
3. Categorize dietary fibers into different classes based on their characteristics.
4. Discuss how the different classes of dietary fibers contribute to health outcomes.
5. Outline techniques for fortifying dairy foods with dietary fibers.
6. Discuss the challenges and solutions associated with incorporating fibers into dairy products.

Unit – 4:

1. Explain the role of additives in infant foods, such as vitamins, minerals, and stabilizers.
2. Discuss safety considerations and regulations for the use of additives in infant food products.
3. Identify specific ingredients beneficial for geriatric foods.
4. Discuss how the inclusion of certain nutrients and bioactive compounds addresses the nutritional requirements of the elderly.

Unit – 5:

1. Identify different types of bulking agents used in reduced calorie foods.
2. Discuss the functions of bulking agents in terms of texture, mouthfeel, and overall product quality.
3. Describe the application of bulking agents in specific food products.
4. Discuss challenges and solutions related to the use of bulking agents in reduced calorie formulations.
5. Name different types of fat replacers used in the food industry.
6. Discuss the characteristics and functions of specific fat replacers suitable for low-calorie dairy foods.
7. Explain how fat replacers are used in the formulation of low-calorie dairy products.
8. Discuss the impact of fat replacers on the sensory attributes of dairy foods.
9. Identify challenges associated with formulating foods with reduced calories.
10. Discuss potential solutions to overcome these challenges.
11. Explore how consumers perceive and accept reduced calorie foods.
12. Discuss the importance of sensory attributes and marketing in consumer acceptance.

Unit – 6:

1. Discuss specific techniques for reducing sodium in processed dairy foods.
2. Highlight challenges in maintaining product quality while reducing sodium in dairy formulations.
3. Explain how sodium reduction may affect the taste, texture, and overall sensory characteristics of dairy products.
4. Discuss strategies to mitigate these effects.
5. Compare natural and synthetic flavor enhancers in terms of safety and consumer perception.
6. Discuss trends in consumer preference for natural flavor enhancers.

Unit – 7:

1. Discuss the ethical considerations and potential risks associated with the use of ergogenic aids.
2. Discuss current trends in the development of sports foods.
3. Explore innovations in formulations, packaging, and delivery methods for sports nutrition products.
4. Explore the role of sustainability in sports nutrition, including eco-friendly packaging and sourcing practices.
5. Discuss consumer awareness and preferences related to sustainability in sports foods.

Unit – 8:

1. Discuss regulatory aspects related to the use of herbs in food products.
2. Highlight any specific regulations or guidelines governing herbal ingredients in dairy foods.
3. Explore consumer attitudes toward herbs in dairy products.
4. Discuss factors that influence consumer acceptance of herb-infused dairy items.
5. Discuss current trends and innovations in the development of herbal dairy products.
6. Explore the potential for new herbal combinations and formulations.

Unit – 9:

1. Explain how prebiotics can be incorporated into functional food products.
2. Discuss the potential health benefits associated with the consumption of prebiotic-rich foods. Describe the formulation process of symbiotic foods.
3. Discuss considerations in combining probiotics and prebiotics to enhance health benefits.
4. Discuss technological challenges in formulating synbiotic foods.
5. Explore synergies and considerations in combining probiotics and prebiotics.
6. Highlight recent advancements in the development of synbiotic products.
7. Discuss the potential impact of synbiotics on gut health and overall well-being.

Unit – 10:

1. Roles of Phytochemicals in Cancer Prevention:

2. Discuss the potential role of phytochemicals in preventing cancer.
3. Highlight examples of phytochemicals with anti-cancer properties.
4. Explore how certain phytochemicals enhance the immune system.
5. Discuss the importance of a plant-rich diet for immune system health.
6. Discuss the non-nutrient effects of polyunsaturated fatty acids (PUFA) and monounsaturated fatty acids (MUFA).
7. Explore how these fats influence factors beyond basic nutrition.
8. Explain how vitamins and minerals can function as proteins, peptides, and nucleotides.
9. Discuss specific examples and their roles in cellular functions.

Unit – 11:

1. Discuss the role of specific nutraceuticals and functional foods in weight management.
2. Explore mechanisms through which these compounds may influence metabolism.
3. Identify dietary strategies and functional foods beneficial for managing joint pain.
4. Discuss the impact of certain nutrients on joint health.
5. Identify nutraceuticals associated with preventing age-related macular degeneration.
6. Discuss the role of these compounds in supporting eye health.
7. Name functional foods that can enhance endurance performance.
8. Explain how these foods may positively impact physical endurance.
9. Discuss dairy alternatives suitable for individuals with milk allergy.
10. Explain the nutritional considerations for maintaining a balanced diet without dairy.
11. Identify lactose-free dairy products suitable for those with lactose intolerance.
12. Discuss the mechanisms through which these products enable lactose-intolerant individuals to consume dairy.
13. Provide an overview of common mechanisms of action for functional foods and nutraceuticals.
14. Discuss how these mechanisms contribute to health benefits.
15. Discuss considerations for determining appropriate dosage levels of nutraceuticals.
16. Highlight factors such as age, health status, and specific health conditions influencing dosage recommendations.

Unit – 12:

1. Discuss the association between nutrition and polycystic ovary syndrome.
2. Outline nutritional strategies for managing PCOS symptoms.
3. Discuss the potential impact of nutrition on epigenetic changes in individuals with PCOS.
4. Explore the role of dietary interventions in modulating epigenetic markers.
5. Discuss how knowledge from nutrigenomic and epigenetic studies can inform personalized nutritional interventions.
6. Explore the potential for precision nutrition in addressing health issues related to puberty, reproduction, and PCOS.

Unit – 13:

1. Identify key analytical techniques employed in Foodomics.
2. Discuss the significance of these techniques in understanding food composition and quality.

3. Applications of Foodomics in Food Safety:
4. Discuss how Foodomics can be applied to ensure food safety.
5. Highlight examples of Foodomics applications in detecting contaminants or adulterants.
6. Identify challenges associated with implementing Nutrigenomics in public health.
7. Discuss ethical considerations related to the use of genetic information in dietary recommendations.
8. Applications of Nutrimetabolomics in Dietary Studies:

Unit – 14:

1. Identify specific applications of nanotechnology in food processing.
2. Discuss how nanotechnology improves the efficiency and quality of food manufacturing.

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