

## **ASSIGNMENT SET-II**

### **Department of Nutrition**

### **Mugberia Gangadhar Mahavidyalaya**



### **M.VOC(FTNM):**

### **Semester-I**

### **Paper Code:FTNM15**

#### **Unit -1:**

1. Explain how functional foods differ from traditional foods in terms of health benefits.
2. Highlight any regional variations in the acceptance and consumption of functional foods.
3. Discuss the factors influencing the adoption of functional foods in India.
4. Discuss the key considerations and challenges in bringing new functional food products to market
5. Provide examples of nutraceuticals and their health benefits.
6. Explore the regulatory frameworks in place to ensure the safety of these products.
7. Discuss the role of labeling and advertising in conveying health benefits to consumers.
8. Discuss how economic factors impact the pricing and accessibility of functional foods.

#### **Unit -2:**

1. Identify the key nutritional requirements during pregnancy.
2. Discuss the significance of maternal nutrition for fetal development.
3. Dietary Recommendations for Adolescents:
4. Discuss the dietary recommendations for adolescents, emphasizing nutrient-dense

foods.

5. Highlight common nutritional challenges faced by adolescents.
6. Explain the role of lactose in dairy products and its dietary significance.
7. Discuss considerations for individuals with lactose intolerance.
8. Discuss the bioactive properties of whey proteins in dairy.
9. Explore the potential health benefits associated with the consumption of whey proteins.

### **Unit – 3:**

1. Identify high-protein foods commonly used in dairy products.
2. Discuss the nutritional benefits and applications of incorporating high-protein sources into dairy foods.
3. Define nutraceuticals and provide examples relevant to fortifying dairy foods.
4. Discuss the potential health benefits and considerations associated with using nutraceuticals in dairy fortification.

### **Unit – 4:**

1. Identify common special needs in infants, such as preterm birth or allergies.
2. Discuss dietary formulations designed to meet the unique nutritional requirements of infants with special needs.
3. Provide an overview of the current market status of infant foods.
4. Discuss trends and innovations in infant food formulations and products.
5. Highlight challenges associated with meeting the nutritional needs of aging populations.

### **Unit – 5:**

1. Name different types of low-calorie sweeteners commonly used in food products.
2. Discuss the sweetness profile and applications of specific low-calorie sweeteners.
3. Explain how low-calorie sweeteners are utilized in the formulation of reduced calorie foods.
4. Discuss considerations for maintaining sweetness and sensory qualities in products.

### **Unit – 6:**

1. Name alternative ingredients that can be used to replace or reduce sodium in foods.
2. Discuss the challenges and benefits of using sodium alternatives.
3. Explain techniques for reducing sodium content in food products.
4. Discuss how food processing methods can impact sodium levels in the final product.
5. Identify common flavor enhancers used in the food industry.
6. Explain how flavor enhancers contribute to the overall sensory profile of foods.
7. Discuss the delicate balance between creating flavorful foods and meeting health-related objectives.
8. Explore how advancements in food science contribute to achieving this balance.

### **Unit – 7:**

1. Discuss the key considerations in designing sports drinks for hydration.
2. Explore factors such as electrolyte balance, carbohydrate content, and flavor in sports drink formulations.
3. Explain how sports drinks contribute to hydration during physical activity.
4. Discuss the optimal composition of sports drinks for various exercise intensities and durations.
5. Define ergogenic aids in the context of sports nutrition.
6. Discuss how ergogenic aids are used to enhance athletic performance.
7. Identify common ergogenic aids such as caffeine, creatine, and beta-alanine.
8. Discuss their mechanisms of action and potential benefits in sports performance.

### **Unit – 8:**

1. Explain how herbs can be incorporated into functional drinks, including dairy-based beverages.
2. Discuss the potential health benefits and flavor enhancements associated with herb-infused drinks.
3. Describe the process of infusing ghee with herbs.
4. Discuss the potential therapeutic properties and culinary applications of herbal ghee.
5. Identify challenges associated with incorporating herbs into dairy products.
6. Discuss solutions to overcome these challenges while maintaining product quality.

### **Unit – 9:**

1. Provide examples of common prebiotic substances.
2. Discuss the sources of these substances in nature.
3. Explain technological considerations in incorporating prebiotics into food products.
4. Discuss challenges and innovations related to prebiotic stability and functionality.
5. Explore recent developments in the understanding and utilization of prebiotics.
6. Discuss any breakthroughs in prebiotic research or applications.

### **Unit – 10:**

1. Categorize phytochemicals into different classes based on their chemical structure or function.
2. Provide examples of phytochemicals from each class.
3. Explain how phytochemicals contribute to cardiovascular health.
4. Discuss specific phytochemicals known for their positive effects on preventing cardiovascular diseases. Isoflavonoids in Soy and Their Health Effects:
5. Discuss the presence of isoflavonoids in soy products.
6. Explain the potential health effects of consuming soy isoflavonoids.
7. Explain the role of glucosamine in joint health.
8. Discuss dietary sources of glucosamine and its potential benefits.
9. Explore the organosulfur compounds found in garlic.
10. Discuss the health benefits attributed to garlic consumption.
11. Define flavonoids, catechins, and tannins.
12. Discuss their presence in various foods and their potential health effects.
13. Explain the importance of carotenoids in maintaining health.

14. Discuss specific carotenoids and their sources.
15. Define each of these anti-nutritional factors found in plants.
16. Discuss their potential effects on nutrient absorption and human health.

### **Unit – 11:**

1. Identify functional foods associated with cancer prevention.
2. Discuss the potential mechanisms through which these foods exert anti-cancer effects.
3. Name nutraceuticals with potential benefits for managing inflammatory bowel disease.
4. Discuss how these compounds may alleviate symptoms associated with IBD.
5. Identify functional foods recommended for individuals with diabetes.
6. Explain how these foods can contribute to blood sugar control.

### **Unit – 12:**

1. Identify nutrients that play a crucial role in reproductive health.
2. Discuss how nutritional status can affect fertility and reproductive outcomes.
3. Discuss how exposure to xenoestrogens may impact puberty.
4. Explore the reproductive implications of xenoestrogen exposure.
5. Discuss how nutrigenomics can provide insights into the influence of nutrition on puberty.
6. Explore nutrigenomic interventions in the context of reproductive health.
7. Epigenetic Changes in Puberty and Reproduction:
8. Explore the epigenetic changes associated with puberty.
9. Discuss the role of epigenetics in reproductive processes.

### **Unit – 13:**

1. Outline the primary objectives of conducting Foodomics studies.
2. Discuss how Foodomics contributes to advancements in food research.
3. Discuss practical applications of Nutrigenomics in designing personalized nutrition plans.
4. Explore how Nutrigenomics can be used for disease prevention.
5. Explain the metabolomic techniques used in Nutrimetabolomics.

### **Unit – 14:**

1. Explore the functional properties that nanomaterials bring to food products.
2. Discuss how nanotechnology enhances attributes like texture, taste, and shelf life in foods.

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