ASSIGNMENT SET - III

Department of Nutrition

Mugberia Gangadhar Mahavidyalaya

M.VOC(FTNM):

Semester-I

Paper Code:FTNM11

UNIT-1

Answer all the questions

1. Explain the freeze-drying process and its applications in food preservation.
2. What are the advantages of freeze-dried foods over conventionally dried foods?
3. Discuss a scenario where freeze-drying is the preferred preservation method.
4. Define enzymatic browning and its impact on the quality of fruits and vegetables.
5. How can enzymatic browning be controlled or prevented in the context of preservation?
6. Provide examples of fruits or vegetables prone to enzymatic browning.
7. Describe the role of lactic acid bacteria in the fermentation process.
8. How does fermentation by lactic acid bacteria contribute to food preservation?
9. Discuss the health benefits associated with consuming fermented foods.
10. Explore methods for preserving herbs and spices for extended shelf life.
11. How does drying impact the flavor profile of herbs and spices? Share tips for maintaining the potency of dried herbs and spices over time.
12. Explain the principle behind high-pressure processing in food preservation.
13. What types of foods are well-suited for HPP, and why?
14. Discuss the effects of HPP on the nutritional content of preserved foods.
15. How do different packaging materials affect the preservation of foods?
16. Discuss the role of oxygen barrier properties in packaging for preserving freshness.
17. Evaluate the environmental impact of various packaging materials.
18. Explore methods for preserving dairy products, such as cheese and yogurt.
19. Discuss the challenges associated with preserving dairy compared to other food types.
20. How does pasteurization contribute to the preservation of milk?
21. Define antioxidants and their role in preventing food spoilage. Provide examples of

foods rich in natural antioxidants.

22. How can the addition of antioxidants extend the shelf life of certain products?
23. Identify challenges specific to preserving meat compared to fruits and vegetables.
24. Discuss the role of curing and smoking in meat preservation. Address safety considerations when preserving meat at home.
25. How does the combination of various preservation techniques contribute to long shelf life?
26. Discuss considerations for maintaining both safety and quality in ready-to-eat meals.

UNIT-2

1. Explain the principles behind different sterilization methods used in canning industries.
2. Compare and contrast pressure cooking and steam retort sterilization in terms of efficiency and application.

3. Discuss the importance of temperature and pressure monitoring devices in the canning process.
4. How do automatic control systems enhance the efficiency and safety of sterilization in canning?
5. Discuss the key considerations in the construction of cold storage facilities for preserving perishable foods.
6. How does insulation play a crucial role in maintaining optimal temperatures in cold storage?

7. Compare the principles and applications of tray driers and roller driers in food drying.
8. Discuss the factors influencing the choice between these two types of driers.

UNIT-3

1. Define the term "food additive" and provide examples.
2. Classify food additives based on their functions, such as preservatives, colorings, flavor enhancers, and emulsifiers.
3. Discuss the role of food additives in enhancing the overall quality of processed foods. Describe the role of preservatives in food preservation.
4. Provide examples of common preservatives and explain how they prevent spoilage. c. Discuss the challenges and controversies associated with the use of preservatives.
5. How do food additives contribute to allergic reactions in some individuals?
6. Discuss labelling requirements related to allergens in food products. c. Explore strategies for managing and mitigating allergen city concerns in food manufacturing.

UNIT-4

1. Outline the key steps involved in the transformation of paddy into rice.
2. Discuss the importance of pre-cleaning and drying in the paddy processing stage.
3. Explain the rice milling process, highlighting the stages involved.
4. How do milling conditions influence the quality characteristics of the final milled rice products?
5. Define parboiling and its significance in rice processing.
6. Discuss methods for stabilizing rice bran during parboiling.
7. Explore the concept of aging in rice.
8. Discuss the factors influencing the aging process and its impact on the quality of rice.
9. Discuss the need for enriching rice and the methods involved.
10. Explore the nutritional implications and challenges associated with rice enrichment.
11. Describe the break system in wheat processing.
12. Discuss the functions and significance of the purification and reduction systems.
13. Explain the concept of extraction rate in wheat milling.
14. Discuss how extraction rate affects the composition of wheat flour.
15. Identify key quality characteristics of wheat flour.
16. How do these characteristics influence the suitability of flour for baking applications?
17. Compare and contrast dry and wet milling processes for corn.
18. Discuss the separation of starch and gluten during corn milling.
19. Explain the processes of malting and milling in barley processing.
20. Discuss the uses of malted barley in various food applications.
21. Describe the milling, malting, and pearling processes for sorghum.
22. Discuss the importance of millets, their composition, and processing methods for food uses.
23. Classify different types of legumes and highlight their significance.
24. Discuss the anti-nutritional compounds in legumes and methods for their removal.
25. Compare home scale, cottage scale, and modern milling methods for legumes.
26. Discuss factors affecting milling quality, efficiency, and common problems in the dhal milling industry.
27. Explain the importance of soaking and germination in pulse processing.
28. Discuss how these processes affect the cooking quality of legumes.
29. Identify common byproducts of pulse processing.
30. Discuss potential value addition strategies for these byproducts.

UNIT-5

1. Explain the concept of clean milk production and its importance in the dairy industry.
2. Discuss the annual milk production, production growth rate, and per capita availability of milk in a given region.
3. Outline the Anand pattern, the role of NDDB (National Dairy Development Board), and Operation Flood in the development of the dairy sector. Discuss Dr. Verghese Kurien's contributions.
4. Detail the processing steps involved in producing market milk.
5. Discuss the importance of quality control measures in ensuring the safety and hygiene of market milk.
6. Explain the processing methods for UHT milk, flavored milk, dahi, yoghurt, cream, butter, butter oil, and ghee.
7. Discuss the technological aspects and considerations for producing ice cream.
8. Describe the processes for producing condensed and dried milk, malted milk powder, and infant milk food.
9. Explain the production processes for Cheddar, Swiss, mozzarella, cottage, and processed cheese.
10. Discuss the technology behind cheese spread production.
11. Describe the processes for making khoa, gulabjamun, channa, rasogolla, and paneer.
12. Discuss the significance of these traditional products in Indian dairy culture.
13. Identify common dairy by-products and their uses.
14. Explain the concept of Clean-in-Place (CIP) in dairy processing. Discuss its importance in maintaining hygiene.

UNIT-6

1. Describe the structure of meat at a microscopic level, emphasizing muscle fibers and connective tissue.
2. Explain the composition of meat, including proteins, fats, and water content.
3. Define rigor mortis and explain its impact on meat quality.
4. Discuss post-mortem changes in meat, including enzymatic and microbial processes.
5. Outline the steps involved in the meat slaughtering process.
6. Discuss the importance of humane slaughtering practices and regulatory considerations.
7. Provide examples of various meat products and their processing methods.
8. Discuss different techniques for meat preservation, including chilling, freezing, and curing.
9. Explain the importance of maintaining hygiene in meat processing plants.
10. Discuss effective sanitization practices and proper waste disposal methods.
11. Identify common byproducts generated during meat processing.
12. Discuss the uses and applications of meat byproducts, such as bones, blood, and offal.
13. Classify different types of poultry meat based on species.
14. Discuss the composition of poultry meat, highlighting key nutritional components.
15. Outline the steps involved in poultry meat processing, from slaughtering to packaging.
16. Discuss specific challenges and considerations in poultry processing compared to red meat processing.

17. Describe the processes involved in egg processing, including cleaning, grading, and packaging.
18. Provide examples of egg products and discuss their applications in the food industry.
19. Outline the steps involved in fish processing, from harvesting to filleting.
20. Discuss methods for preserving fish, including smoking, salting, and canning.
21. Provide examples of various fish products and their processing techniques.
22. Discuss the challenges and opportunities in the fish processing industry.

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