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**St Aloysius College (Autonomous)
Mangaluru**

**Semester IV – P.G. Examination – M.Sc. Food Science and Technology
May - 2024**

MEAT, FISH, AND POULTRY PROCESSING TECHNOLOGY

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:

(6x3=18)

1. Identify a significant challenge currently faced by the fish industry.
2. Define the term "marbling" in the context of meat grading.
3. Comment on intermediate moisture meat products.
4. Brief on smoking of meat and its health implications.
5. Give the AGMARK grading for the eggs.
6. Write a note on external egg evaluation.
7. Name three common sources of fish protein concentrates.

II. Answer any FOUR of the following:

(4x7=28)

8. Apply the principles of meat pigments to explain the color changes observed during the cooking process.
9. Discuss on aging of meat.
10. Explain the different types of meat analogs.
11. Write a note on egg white and egg Yolk proteins.
12. Explain in detail the manufacturing of fish oil and fish meal.

III. Answer any TWO of the following:

(2 x12=24)

13. Explain in detail the factors affecting the quality of meat.
14. Elaborate on methods of fish preservation.
15. Illustrate the different types of stunning and slaughtering methods used in meat industry.

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**Semester IV – P.G. Examination – M.Sc. Food Science and Technology
May - 2024**

FOOD PACKAGING

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:**(6x3=18)**

1. List three common materials used in packaging.
2. Write a note on FSSAI regulations on food package labelling.
3. Define aseptic packaging.
4. What is vacuum packaging, and how does it differ from traditional packaging methods?
5. Discuss the Classification of polymers.
6. What are the potential sources of toxic materials in food packaging? Provide three examples and briefly explain their risks.
7. What is the purpose of testing glass containers in the food packaging industry?

II. Answer any FOUR of the following:**(4x7=28)**

8. Define tertiary packaging and its significance in the logistics and supply chain of food products. Discuss on the levels of packaging in detail.
9. Describe the various functions of food packaging.
10. Explain the processing of paper. What are the testing methods for paper packaging material?
11. Elaborate on the steps involved in manufacturing of three piece cans.
12. With the neat labelled diagram explain glass nomenclature and the types of glass.

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III. Answer any TWO of the following:

13. Explain on the different types of packaging of milk and milk products.
14. Describe Retort pouch packaging. Add a short note on the challenges of Retort packaging.
15. Compare and contrast the processing techniques used for thermoplastic polymers, such as extrusion, injection molding, and blow molding.

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Food Biotechnology

Time: 3 hrs.

Max Marks: 70

I. Answer any SIX of the following:

(6x3=18)

1. Discuss the significance of aeration in fermentation processes.
2. What are the key features of a photo bioreactor?
3. Define genetic engineering and explain its significance in modern biotechnology.
4. Describe the aseptic method of inoculation in fermenter operations.
5. Define catabolic repression in brewing.
6. Discuss the health benefits associated with consuming natto.
7. Explain the principle of solid phase separations in downstream processing.

II. Answer any FOUR of the following:

(4x7=28)

8. Comment on media sterilization and optimization.
9. Discuss the role of fermentation in enhancing the shelf life of traditional Indian fermented products. Provide examples and discuss the microbial mechanisms involved.
10. Discuss on fermented vegetable products.
11. Analyze the impact of cell lysis methods on downstream processing efficiency. Discuss two different cell lysis techniques and their advantages and disadvantages.
12. Analyze the differences between microfiltration and ultrafiltration in membrane systems. Provide examples of their respective applications in bioprocessing.

III. Answer any TWO of the following:

(2 x12=24)

13. Discuss on the manufacturing of beer, wine & whiskey.
14. Investigate the factors influencing the selection of sterilization methods for fermenters and ancillary equipment in industrial-scale fermentations. Evaluate the advantages and limitations of different sterilization techniques.
15. Design a comprehensive risk assessment framework for evaluating the potential environmental and health impacts of introducing a new genetically modified crop into the market.

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Semester IV – P.G. Examination – M.Sc. Food Science and Technology

May - 2024

FOOD SAFETY AND QUALITY CONTROL

Max Marks: 70

(6x3=18)

Time: 3 hrs.

I. Answer any SIX of the following:

1. Write a short note on interrogated pest management.
2. What are food hazards? Give examples.
3. What are the four pillars of GAP? Write a short note.
4. Write a short note on the objectives of good hygiene practices.
5. Discuss the significance of cleaning and sanitation agents in food establishments. Give Examples.
6. Make a short note on organic farming and its relevance
7. What are the primary objectives of food safety regulations?

II. Answer any FOUR of the following:

(4x7=28)

8. Explain the key elements of food labels. Discuss on nutritional labeling.
9. Discuss the importance of consumer awareness in preventing food adulteration. Provide two examples of how consumers can be vigilant against adulterated food products
10. Give the classification of pests. Explain the importance of IPM in food systems.
11. Explain the significance of the Codex Alimentarius Commission (CAC) in international food safety standards. What is the primary objective of the CAC, and how does it contribute to ensuring the safety and quality of food products on a global scale?
12. Explain the seven principles of HACCP in detail.

III. Answer any TWO of the following:

(2 x12=24)

13. Elaborate on food traceability in detail.
14. Critically examine the role of GLP in the pharmaceutical industry, focusing on its impact on drug development and regulatory compliance
15. Describe the WTO agreements in detail.