

PH 591.3

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**St Aloysius College (Autonomous)**

**Mangaluru**

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

**November - 2019**

**Technology of Meat, Poultry and Fish Products**

**Time: 3 hrs.**

**Max Marks: 70**

**I. Answer any SIX of the following:** **ST.ALOYSIUS COLLEGE** **(6x3=18)**  
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1. Write a short note on meat colour.
2. Write short note on intermediate moisture meat products.
3. Write the steps involved in the slaughtering of Poultry.
4. What are Internal quality evaluations methods of egg.
5. What are the advantages and disadvantages in applying irradiation process in meat industry?
6. Mention the factors affecting the quality of fresh fish?
7. How does the stunning and slaughtering method will be carried out? Explain.

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

8. Discuss about different methods of meat tenderization.
9. Explain in detail about the changes during cooking and overall quality of meat.
10. Discuss on restructured Meat and meat products.
11. Discuss on Meat microbiology and safety.
12. How do the genetic and animal husbandry practices influence the quality of meat?

**III. Answer any TWO of the following:** **(2 x12=24)**

13. Explain in detail about preservation of egg and draw the structure of egg.
14. Write various postmortem changes on meat processing and how does it affect meat quality.
15. Explain in detail about by product utilization of fresh industry waste.

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**St Aloysius College (Autonomous)**

**Mangaluru**

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

**November - 2019**

**NUTRACEUTICALS AND FUNCTIONAL FOODS**

Time: 3 hrs.

Max Marks: 70

**I. Answer any SIX of the following:**

(6x3=18)

1. Define functional foods. Give example.
2. Write about regulatory issues of nutraceuticals.
3. Write note on omega-6 fatty acids.
4. Short note on the role of curcuminoids in cancer.
5. Write about the stability of phytochemical compounds.
6. Short note on health benefits of natural pigments.
7. How dietary supplements different from Nutraceuticals?

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**II. Answer any FOUR of the following:**

(4x7=28)

8. Discuss nutraceuticals a new dietary ingredients.
9. Explain the role of nutraceuticals in cholesterol management.
10. What are the health benefits of antioxidants?
11. Explain Nutrigenomics and its relation with nutraceuticals.
12. Explain the mechanism of probiotic microorganisms.

**III. Answer any TWO of the following:**

(2 x12=24)

13. Explain in detail on phytoestrogens and phytosterols.
14. Explain the role of nutraceuticals in the treatment of obesity and cholesterol management.
15. Elucidate the types of prebiotics and their effects on gut microbes.

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**St Aloysius College (Autonomous)**

**Mangaluru**

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

**November - 2019**

**FERMENTATION TECHNOLOGY**

**Time: 3 hrs.**

**Max Marks: 70**

**I. Answer any SIX of the following:**

**(6x3=18)**

1. Derive the equation for growth kinetics.
2. Mention the benefits of fermented foods.
3. Write short note on cocoa products and their application.
4. Write a note on fermentation in Tea.
5. Short note on various equipment's used for product recovery during downstream processing.
6. Write on application of filtration in fermentation technology.
7. Write a note on GMO act.

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**II. Answer any FOUR of the following:**

**(4x7=28)**

8. Discuss about various type of fermentations.
9. Describe the manufacturing process of any one cereal based product.
10. What is crystallisation? Explain its application in food industries.
11. Discuss on genetically modified food.
12. Discuss on application of genetic engineering in Food Science and Technology.

**III. Answer any TWO of the following:**

**(2 x12=24)**

13. Describe fermentation process in manufacture of Idli. How microorganism play role in developing flavor and texture to the product.
14. Explain in detail the process for production of beer and its fermentation.
15. Discuss on application of membrane filtration system in downstream processing.

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

November - 2019

**WASTE MANAGEMENT**

Time: 3 hrs.

Max Marks: 70

**I. Answer any SIX of the following:**

(6x3=18)

1. Define non-degradable and biodegradable waste.
2. How is liquid waste stored and disposed?
3. Give brief account of waste generated from the sugar industry.
4. Define waste in terms of food processing industry.
5. Write any five applications of antioxidants that are extracted from fruit peels.
6. Briefly describe about effluent treatment plant?
7. Write a short note on single cell protein?

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**II. Answer any FOUR of the following:**

(4x7=28)

8. Explain the waste generated in food industry.
9. Explain on the industrial wastes produces from fruit processing.
10. Describe the process of measurement of organic content in waste water.
11. Describe the processes utilizing fruit peel to produce value added product.
12. Explain ISO 14000 and its applications in food industry.

**III. Answer any TWO of the following:**

(2 x12=24)

13. Mention the types of waste generated in fish, meat and poultry industry? Explain their utilization.
14. Explain in detail on the solid waste storage and disposal methods.
15. Explain various physical, chemical and biological operations in waste water treatment.

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**St Aloysius College (Autonomous)**  
**Mangaluru**

**Semester III - P.G. Examination - M.Sc. Food Science and Technology**  
**November 2018**

**TECHNOLOGY OF MEAT, POULTRY AND FISH PRODUCTS**

Time: 3 Hours

Max. Marks: 70

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

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1. What is Rigor Mortis?
2. Mention different methods of stunning the animal.
3. What is cold shortening and how can it be prevented.
4. What are mortem changes in meat color.
5. Write a note on freezing of egg.
6. List the steps involved in production of poultry meat with a flow chart.
7. Define fish handling and name different preservation techniques for fish.

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

8. Discuss the Irradiation processing of meat.
9. Explain enzymatic hydrolysis of fish protein and its bioactivity.
10. What is meat tenderization? Explain how meat can be tenderized by salt, acid and external enzymes.
11. Write a brief note on meat hygiene and microbiological safety.
12. How is grading of egg done? Discuss methods of egg preservation.

III Answer any **TWO** of the following: (2 x12=24)

13. What are the factors influencing meat quality?
14. Explain structure and compositions of egg; also discuss methods of evaluating the quality of egg.
15. What are by products of fish industry and how they can be utilized?

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**St Aloysius College (Autonomous)**  
**Mangaluru**

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

**November 2018**

**NUTRACEUTICALS AND FUNCTIONAL FOODS**

Time: 3 Hours

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Max. Marks: 70

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I Answer any SIX of the following:

(6x3=18)

1. Differentiate between Functional foods and Nutraceuticals.
2. Write a short note on stilbenes.
3. Define probiotics, what are the criteria for microorganisms to be probiotic.
4. Define fructo-oligosaccharides and list their prebiotic effects on health.
5. Write short notes on source of functional foods and nutraceuticals.
6. List out the different types of nutraceuticals products available in market.
7. Write a note on isoflavonoids.

II Answer any FOUR of the following:

(4x7=28)

8. What is Phytosterols and discuss its role as nutraceuticals.
9. Discuss Biological significance of Nutraceuticals.
10. What are Omega 3 and Omega 6 fatty acids and explain their significance in Human Nutrition?
11. Discuss prebiotic effect of Fructo-oligo saccharides.
12. What is angiogenesis? Discuss its role as nutraceuticals.

III Answer any TWO of the following:

(2 x12=24)

13. Explain the health benefits of probiotics.
14. Explain the health benefits of chlorophyll and chlorophyllin pigments?
15. What are the health beneficial effects of anthocyanin pigments?

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

November - 2018

**FERMENTATION TECHNOLOGY**

Time: 3 hrs.

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Max Marks: 70

I. Answer any **SIX** of the following:

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(6x3=18)

1. Illustrate the steps involved in genetic engineering
2. Write the changes during fermentation of tea.
3. Give the role of microbes during fermentation of cocoa beans.
4. Write a note on any one fermented soy based products.
5. Write a note on process of evaporation
6. Comment on fermentation process in vodka.
7. List on ethical issues concerning GM foods.

II. Answer any **FOUR** of the following:

(4x7=28)

8. Discuss about various types of fermentations.
9. Explain in detail the process of wine.
10. What is solvent extraction? Explain its application in food industries.
11. What principle involved in Reverse Osmosis process with reference to downstream processing.
12. Discuss on fermentation Kinetics.

III. Answer any **TWO** of the following:

(2 x12=24)

13. Describe the role of Genetic Engineering in food industry and agriculture
14. Describe fermentation process in manufacture of idli and dosa. How microorganism play role in developing flavor and texture to the product.
15. Elaborate on application of membrane filtration system in downstream processing.

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Semester III – P.G. Examination – M.Sc. Food Science and Technology  
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Time: 3 Hours

## WASTE MANAGEMENT

I Answer any **SIX** of the following:

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Max. Marks: 70

(6x3=18)

1. What are the differences between biodegradable and non- biodegradable wastes?
2. Define waste in terms of food processing industry.
3. Mention any five biofunctional molecules extracted from fruit processing waste.
4. What are the advantages of tricking filters?
5. Write briefly on the utility of bagasse in sugar industry.
6. What is the role of sludge digesters in the waste management?
7. What are organo-zeolites and mention their use in the treatment of waste.

II Answer any **FOUR** of the following:

(4x7=28)

8. Provide legal aspects for storage and disposal of waste.
9. Explain the industrial wastes produced from Fish processing industry.
10. Explain ISO 14000 and its applications in food industry.
11. What is solid waste and explain the characteristics of solid waste.
12. Explain different waste disposal methods and their advantages and disadvantages.

III Answer any **TWO** of the following:

(2 x12=24)

13. Explain the methods of physical unit operation in waste water treatment.
14. Explain types of waste from citrus fruit industry and their utilization in the development of value added products.
15. Describe the type of waste generated and its utilization from meat and poultry industry.

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Semester III – P.G. Examination – M.Sc. Food Science and Technology  
November 2017

**TECHNOLOGY OF MEAT, POULTRY AND FISH PRODUCTS**

Time: 3 Hours

Max. Marks: 70

I Answer any **SIX** of the following:

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(6x3=18)

1. What are the advantages and disadvantages of irradiation process in meat industry?
2. Define Albumen Index, yolk Index and Haugh Unit.
3. Define the following units? a) myofilament b) myofibril c) fascicle
4. What are meat analogs?
5. What is cold shortening and give preventive measures?
6. Define ageing of meat. Explain its advantages.
7. What is glazing of fish and why is it done?

II Answer any **FOUR** of the following:

(4x7=28)

8. Discuss about different methods of meat tenderization.
9. Explain in detail about gelatin extraction and its uses?
10. Define the major advantages of smoking and curing in meat preservation.
11. Explain in detail about preservation of egg.
12. What is rigor mortis? What are the biochemical changes encountered?

III Answer any **TWO** of the following:

(2 x12=24)

13. Elaborate on layout and operations of a Modern Abattoirs.
14. Explain in detail the factors affecting the quality of meat.
15. Explain the manufacturing of fish meal.

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**St Aloysius College (Autonomous)  
Mangaluru**

**Semester III - P.G. Examination - M.Sc. Food Science and Technology  
November 2017**

**NUTRACEUTICALS AND FUNCTIONAL FOODS**

Max. Marks: 70

Time: 3 Hours

I Answer any **SIX** of the following:

(6x3=18)

1. Nutrigenomics.
2. Antioxidants.
3. World market for nutraceuticals.
4. Natural pigments.
5. Isoflavonoids.
6. Omega 3 and omega 6 fatty acids.
7. Pro-biotic food.

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II Answer any **FOUR** of the following:

(4x7=28)

8. Explain the role of functional foods in prevention of angiogenesis and cardiovascular disease.
9. Classify and explain polyphenols and their role in health.
10. Explain the prebiotic effects of Resistant starches.
11. Explain the role of different nutraceutical compounds in cholesterol management.
12. Explain nutrigenomics and its relation to nutraceuticals.

III Answer any **TWO** of the following:

(2 x12=24)

13. Explain the process for the isolation of Beta-xanthin and Beta-cyanine using Aqueous Two Phase Extraction (ATPE).
14. Explain in detail about beneficial microbes
15. Explain the role of nutraceuticals as antioxidants.

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MangaluruSemester III - P.G. Examination - M.Sc. Food Science and Technology  
November - 2017FERMENTATION TECHNOLOGY  
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Max. Marks: 70

Time: 3 Hours

I Answer any **SIX** of the following:

(6x3=18)

1. Mention different traditional Indian fermented products. Explain the process for any one product.
2. Write short note on Dhokla.
3. Define flux? How do you calculate flux of permeate.
4. Write a short note on ultrafiltration membrane process.
5. Explain how crystallization takes place?
6. Write a note on solvent recovery.
7. Write a note on wine from fruit juice.

II Answer any **FOUR** of the following:

(4x7=28)

8. Explain in detail the process of tea fermentation.
9. Explain the applications of genetic engineering.
10. Discuss about preparation of rum from sugarcane.
11. Explain fermentation kinetics.
12. Explain Solid state fermentation process and its advantages.

III Answer any **TWO** of the following:

(2 x12=24)

13. Give the difference between whisky and Beer. Explain any one of the fermentation process.
14. Explain objectives and problems faced during downstream processing of fermented products.
15. Explain in detail the public perception of genetically modified foods.

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Semester III – P.G. Examination – M.Sc. Food Science and Technology  
November 2017

### WASTE MANAGEMENT

Max. Marks: 70

Time: 3 Hours

I Answer any **SIX** of the following:

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1. Biodegradable and non degradable wastes.
2. Biological treatment of food industry wastes.
3. Waste water management.
4. Effluent treatment plants.
5. Antioxidants from fruit peels.
6. Mention the tools required in Gaseous waste treatment.
7. Write a note on struvite formation.

II Answer any **FOUR** of the following:

(4x7=28)

8. Explain in brief methods of utilizing food processing wastes to make value added products and give example for each.
9. Explain in detail solid waste storage and disposal methods.
10. Write in detail on food industrial waste from fruits processing industry.
11. Discuss on Biomolecules and enzymes from meat processing.
12. Explain chemical and biological unit operations in waste water treatment.

III Answer any **TWO** of the following:

(2 x12=24)

13. Explain ISO 14000 and its application in food industry.
14. Explain solid waste storage and disposal method.
15. Explain characteristics of waste water measurement of organic content in waste water and the salient features of waste water treatment.

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15. Explain technology in processing of Decaffeinated tea.