PH 591.2   Reg. No.:

St Aloysius College (Autonomous)
Mangaluru
Semester II – P.G. Examination - M.Sc. Food Science and Technology
May/June - 2023
FOOD PROCESS ENGINEERING AND INSTRUMENTATION

Time: 3 Hours   Max. Marks: 70

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

1. Write a note on heat transfer.

2. Write a note on properties of steam.

3. Write a note on thermal processing of foods.

4. Write a note on freezing and thawing.

5. Write a note on mass transfer.

6. List various types of boilers used in industry.

7. Write a note on FTIR and its applications.

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

8. Discuss on sensory evaluation methods.

9. Explain in-detail about corrosion of metals.

10. Discuss thermal and electrical properties of foods with examples.

11. Make the following conversions using standard conversion factors:

    (a) Convert 35,134g to kilograms

    (b) A bus is moving at a speed of 25 miles/h, convert it to m/s

12. Explain Spray drying? Discus its applications.

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

13. What are Newtonian and Non-Newtonian fluids? Discuss with examples.

14. Explain the principle and applications of GC, AAS and HPLC.

15. Symbolically represent the following quantities with proper Units and Dimensions: Area; Density; Velocity; Energy; Pressure; Force; Speed; Volume; Temperature and Mass.

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

May/June - 2023

PROCESSING TECHNOLOGY OF CEREALS, PULSES AND OIL SEEDS

Time: 3 Hours Max. Marks: 70

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

1. What are the factors affecting in wheat quality?
2. What changes occur during storage of oil?
3. Comment on the chemical composition of rice.
4. Write a short note on composition of oats.
5. Draw a labelled diagram of structure and composition of barley.
6. What are protein concentrates and isolates?
7. Write a short note on anti-nutritional factors.

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

8. Explain the role of ingredients in bread making.
9. Elaborate on utilization of pulses and legumes for value added products.
10. Elaborate on post-harvest processing of oats and its end products.
11. Discuss the process of oil extraction and refining process.
12. Explain the quality changes during aging of rice.

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

13. Explain the process of barley malting and explain its application.
14. Explain the technology of rice parboiling. Comment on the advantages and disadvantages of parboiling process.
15. Explain dough rheology and its measurement.

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Semester II – P.G. Examination - M.Sc. Food Science and Technology
May/June - 2023

SPICES AND PLANTATION CROPS TECHNOLOGY

Time: 3 Hours   **Max. Marks: 70**

I. Answer any <u>SIX</u> of the following.   (6x3=18)

1. How to identify the adulteration in cinnamon?
2. Write a note on different types of peppers grown in India and their medicinal properties.
3. Write the protocol for preparing the "cup" for cupping method in coffee quality analysis.
4. Write a short note on the protocol for green coffee beans grading.
5. Write the harvesting indications for cardamom and procedure of harvesting.
6. Write a short note on the defects of cocoa beans and methods for prevention of the same.
7. Write a note on value added products from arecanut.

II. Answer any <u>FOUR</u> of the following.   (4x7=28)

8. Explain the postharvest processing of turmeric and Ginger.
9. Discuss on the methods of preservation of spices and their advantages and disadvantages.
10. Discuss about the process and benefits of decaffeinated tea and flavored tea.
11. Describe the postharvest processing methods for coffee.
12. Discuss on Nutritive value and types of chocolates.

III. Answer any <u>TWO</u> of the following: (2x12=24)

13. Discuss in detail about processing of Oleo resins and Essential oils.
14. Discuss in detail about types of coffee and different methods of preparation.
15. Discuss in details about processing of various cocoa products.

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Mangaluru
Semester II – P.G. Examination - M.Sc. Food Science and Technology
May/June - 2023
RESEARCH METHODOLOGY AND ETHICS

Time: 3 Hours   Max. Marks: 70

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

1. Differentiate between basic and applied research.
2. What is quasi-experimental design?
3. What is the central limit theorem?
4. What is coefficient of correlation?
5. Calculate the mode in a moderately skewed distribution. Given: Mean=12, Median=11.
6. List the applications of computers in research.
7. What is h-index?

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

8. What are the criteria of good research? Outline the stages of a research process.   **(3+4)**
9. Discuss randomised controlled research design in detail.
10. Illustrate the following data as a pie chart.

Produce	Dairy products	Cereals	Millets	Seafood	Poultry
Overall exports in Million metric ton	138	112	50	35	15

11. Discuss ethics in research.
12. Compute the standard deviation for the scores of a class in the final examination:

    72,56,63,69,87,92,78,81,94,59

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

13. Discuss experimental research designs.
14. A farm produces crops of three different varieties each grown on 3 different plots of the ground. State if the production in varieties is significantly different. Given:5 % F-limit is 5.14

		Production of Variety of crop per acre of plot		
		A	**B**	**C**
Plot	**1**	6	5	5
	2	7	5	4
	3	3	7	3

15. Explain the structure of a thesis. What are the steps in the preparation of a thesis?   **(6+6)**

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