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# B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

## January / February 2025 Semester End Main Examinations

**Programme: B.E.**

**Semester: VII**

**Branch: Biotechnology**

**Duration: 3 hrs.**

**Course Code: 22BT7PEFPC**

**Max Marks: 100**

**Course: Food Processing & Quality Control**

**Instructions:** 1. Answer any FIVE full questions, choosing one full question from each unit.  
2. Missing data, if any, may be suitably assumed.

<b>UNIT - I</b>			<b>CO</b>	<b>PO</b>	<b>Marks</b>	
<b>Important Note:</b> Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.	1	a)	Sorbic acid is also used as a preservative in fruits and vegetables to slow the growth of molds and yeast. Elucidate the mode of action of Sorbic acid in preserving the fruits and vegetables.	CO2	PO 2	<b>08</b>
		b)	Illustrate the preparation of ketchup with the neat flow chart.	CO2	PO2	<b>06</b>
		c)	What is meant by "minimum processing" of food, and how does it differ from traditional food processing methods?	CO2	PO2	<b>06</b>
<b>OR</b>						
2	a)	Why the use of more than one class II preservative is prohibited? Justify your answer.	CO2	PO2	<b>06</b>	
	b)	Explain the preparation of marmalade with the neat flow chart.	CO2	PO2	<b>08</b>	
	c)	How the dried fruits are preserved? Explain the mode of action of carbon dioxide in food preservation.	CO2	PO2	<b>06</b>	
<b>UNIT - II</b>						
<b>Important Note:</b> Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.	3	a)	Classify the materials used to store the food materials. In food processing, internal and external pressure affect the design of processing equipment. Do you agree? Justify your answer.	CO3	PO2	<b>10</b>
		b)	Suggest the suitable type of heat exchanger, which is commonly used in heating and cooling cheese sauce, deserts etc. Explain the construction and working of the given heat exchanger. Name the parts.	CO3	PO2	<b>10</b>
<b>OR</b>						
4	a)	How cryogenic freezing is beneficial in preserving meat, poultry and dairy products? Explain.	CO3	PO2	<b>10</b>	

	b)	Explain the various types of mechanical separators used in food industry.	CO3	PO2	<b>10</b>
<b>UNIT - III</b>					
5	a)	Tabulate the differences between various types of food hazards and mitigating methods.	CO4	PO2	<b>10</b>
	b)	Design the HACCP audit for a fruit jam producing unit.	CO4	PO2	<b>10</b>
<b>OR</b>					
6	a)	Every aspect of food manufacture should be controlled according to defined managerial and technical standards. Justify this statement by explaining GAP and GMP in food processing.	CO4	PO1, 2	<b>10</b>
	b)	What are PFA, FPO and AGMARK? Explain the objectives of these standards.	CO4	PO1, 2	<b>10</b>
<b>UNIT - IV</b>					
7	a)	How does MAP work? Explain some factors that affect the atmosphere in a MAP package.	CO4	PO1, 2	<b>10</b>
	b)	Flexible packaging has significantly grown in popularity in the food and beverage industry. How does flexible packaging protect food? Explain with examples.	CO4	PO2	<b>10</b>
<b>OR</b>					
8	a)	Explain the working of snorkel machines used for the MAP of grains.	CO4	PO2	<b>10</b>
	b)	Explain the methods for increasing shelf life of packaged food. Suggest any three techniques.	CO4	PO2	<b>10</b>
<b>UNIT - V</b>					
9	a)	Highlight on the need for the food labelling. List the FDA guidelines for food labelling.	CO4	PO1	<b>10</b>
	b)	Design a nutritional labelling table for a food product of your choice. Write each component in nutritional table for 100 g of food product.	CO4	PO1, 2	<b>10</b>
<b>OR</b>					
10	a)	List the limitations of labelling safety issues. How to ensure safety aspects in labelling?	CO4	PO1	<b>08</b>
	b)	What are the points need to be considered while labelling infant food?	CO2	PO2	<b>06</b>
	c)	Write the EU rules on nutritional labelling. How it is different from US rules.	CO4	PO1	<b>06</b>

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