

2022

**INTRODUCTION TO FOOD PROCESSING AND PRESERVATION
TECHNOLOGY**

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

1.	a)	Derive the relationship between wet basis and dry basis moisture content.	5
	b)	100Kg of paddy at 24% moisture content is dried to 12% moisture content before being milled. Calculate the weight of the paddy after drying and the amount of moisture removed during drying. Write the composition of the dried potato.	5
	c)	What is cellulose, hemicellulose, pectin and lignin?	1+1+1+1=4
	d)	List two properties that each sugar and starch possess.	2+2=4
	e)	Write the monosaccharides of sucrose and lactose.	1+1=2
2.	a)	What are vitamins? Classify them with example. Write the function, food source and deficiency disease of any 2 vitamins.	1+4+6=11
	b)	What are minerals? Classify them with example.	1+4 = 5
	c)	Write true or false	1×4=4
	i)	Calcium is the most abundant mineral in the body.	
	ii)	Iron is a constituent of haemoglobin, myoglobin and many enzymes.	
	iii)	Deficiency of iodine can lead to enlargement of the thyroid gland known as goitre.	
	iv)	Phosphorus is present in nearly all foods and deficiency disease is unlikely to occur.	
3.	a)	Define water activity. What is the importance of water activity in foods?	2+1=3
	b)	What is meant by food spoilage? Classify the foods based on their ease of spoilage and give example.	2+3=5

	c)	Explain the six various causes of food spoilage in brief.	2×6=12
4.	a)	What is dehydration and its main purpose of dehydration or drying? Explain the mechanism of drying with suitable example.	1+1+4=6
	b)	Explain the drying rate curves (moisture content vs drying time and drying rate vs moisture content) with neat diagrams.	8
	c)	Define preservatives. Name any one preservative used in the preservation of fruits. Explain how salt act as preservatives.	1+1+4=6
5.	a)	Write short notes on (any 4)	4×5 =20
	i)	Canning	
	ii)	Pasteurization	
	iii)	Freezing	
	iv)	Tray drier	
	v)	Sterilization	
	vi)	Autoclave	
	vii)	Hot air oven	
	viii)	Blanching	
	ix)	Hot air oven	
6.	a)	What is a fermentation process? Write any 5 benefits of fermentation process. Explain the types of fermentation process.	1+5+4=10
	b)	What are enzymes? Explain the lock and key theory of enzyme action with suitable diagram. Name the types of enzymes with example of each one of them.	1+3+6=10
7.	a)	What is packaging? Describe the functions of packaging.	2+3=5
	b)	Explain the three classes of packaging with example.	2+2+2=6
	c)	Describe the different materials used for packaging foods.	9