

2022

Principles of Food Processing and Preservation

Full Marks: 100

Time: Three hours

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

Answer any five questions.

1.	a)	What is Food Preservation? Define food.	2+1
	b)	Write the various Principles of Food Preservation.	5
	b)	What do you understand by term "CANNING"? Describe the various steps of general canning process.	12
2.	a)	Define decimal reduction time (D-value), and Z-Value.	5
	b)	Write the equation for determining D-Value and Z-Value.	5
	c)	Calculate the D-value of an organism that show 100 survivors from an initial inoculum of 5×10^6 spores after 10 min of thermal treatment at 121.1°C.	10
3.		Write short notes on the followings	5x4
	a)	Case hardening	5
	b)	Critical moisture content	5
	c)	Aseptic canning	5
	d)	Equilibrium moisture content	5

4.	a)	What is aseptic canning? Write the various steps involved in the aseptic canning. What are the advantages of aseptic canning.	2+5+3
	b)	What do you understand by perishability? Classify the food based on their perishability.	2+4
	c)	Write the steps involved in Hot-Filling process	4
5.	a)	Describe the working principle of fluidized bed dryer (FBD) by giving a clean schematic diagram.	10
	b)	Write the advantages and disadvantages of FBD.	5
	c)	The F value at 121.1°C equivalent to 99.999% inactivation of stain of <i>C. botulinum</i> is 2.24 min. Calculate the D ₀ value of this organism	5
6.	a)	Draw schematic diagrams for co-current and counter-current tunnel dryer, and write their working principles.	5+5
	b)	Write the advantages and disadvantages of co-current tunnel dryer	5
	c)	Write the advantages and disadvantages of counter-current tunnel dryer	5
7.	a)	Discuss the working principle of single, double, and twin drum dryer by giving clean diagram.	5+5+5
	b)	Classify the food based on their pH.	5

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