

Thapar University
Department of Biotechnology and Environmental Sciences

BT 004: Principles of Food Processing and Preservation

Attempt any six questions. All questions carry equal marks.

Instructor: Shalini G. Rudra

Time: 3 h

M.M. 72

1	i	Classify proteins on the basis of their solubility. What are the indices of protein quality?	6
	ii	Differentiate between CAS and MAP.	4
	iii	What are the D- and z- values.	2
2	i	Discuss any four types of dryers. What is osmotic dehydration?	5
	ii	What is the PFA act. In which cases a food article is considered adulterated?	4
	iii	What is sorption isotherm and the theory of its hysteresis?	3
3	i	What are the areas in which biotechnology been applied in food processing? Which microbes have been used for vitamin and gum production commercially?	7
	ii	Give the structure and importance of pectin in fruits. Discuss its transformation during ripening.	5
4	i	Discuss briefly: (i) Rancidity, (ii) Enzymatic browning, & (iii) Caramelization	6
	ii	What is the status of Indian food industry? Mention the scenario in different sectors of food processing.	6
5	i	What are the major functions of packaging? Which considerations are involved in bulk packaging?	6
	ii	What is aseptic packaging? What are its advantages over conventional packaging.	3
	iii	Explain the freezing curve.	3
6	i	Discuss the application of pulsed electric field and ultrasound in food preservation.	5
	ii	Write short notes on any four: (i) Blanching, (ii) Case hardening, (iii) Freeze-burn, (iv) BMR, & (v) Cold shortening	4
	iii	Draw the structure of starch.	3
7	i	Discuss egg proteins and milk proteins.	5+3
	ii	How much protein is required for human body?	1
	iii	Enlist essential amino acids.	3
8	i	What are the sources of irradiation?	2
	ii	Explain beer making.	4
	iii	According to the Food Safety and Standards Act, what is the definition of food and food additive. What is the composition of the Food authority?	6

All the Best!!