Name: Enrolment No:	

UPES

End Semester supplementary Examination, December 2024

Course: Food Preservation Technology — **Semester: III**

Program: B.Tech Food Technology — **Duration: 3 Hours**

Course Code: HSFT2013 — **Max. Marks: 100**

Instructions: Read each question carefully and answer

S. No.	Section A Short answer questions/ MCQ/T&F (20Qx1.5M= 30 Marks)	Marks	COs
Q1	What does the extent of deterioration of vitamins in dried food items depend upon? a) Caution exercised during the preparation of food by dehydration b) Dehydration process selected and the care in its execution c) Conditions of the dried food d) All of the mentioned	1.5	CO4
Q2	Statement 1: Chemical reactions _____ during dehydration and storage of dehydrated material. Statement 2: The low cost of dried meat, fish and eggs is because_____. a) Increase, they aren't dried properly b) Decrease, it's expensive c) Increase, fresh and frozen has a higher quality d) Decrease, All of the mentioned	1.5	CO4
Q3	In which dryer, hot air jets are used for drying purposes? a) Vacuum Dryer b) Spray Dryer c) Roller Dryer d) Fluidized Bed dryer	1.5	CO4
Q4	When the crystallization process takes place for a long time, the size of the crystals is _____ a) Small b) Large c) No crystals formed d) None of the mentioned	1.5	CO4
Q5	Ice crystals in frozen meat should be formed by rapid crystallization. a) True b) False	1.5	CO4
Q6	Statement 1: With the increase in temperature, the enzyme gets deactivated. Statement 2: With the increase in temperature, the enzyme gets reactivated.	1.5	CO2

	a) True, False b) True, True c) False, False d) False, True		
Q7	The condition that is highly critical in the drying process. a) Moisture b) Pressure c) Temperature d) Volume	1.5	CO2
Q8	Which of the following is the time-temperature combination for HTST pasteurization? a) 72°C to 74°C for 15 to 20 seconds b) 135°C to 140°C for 2 to 4 seconds c) 63°C for 30 minutes d) 57°C to 68°C for 15 min	1.5	CO2
Q9	Which of the following is the time-temperature combination for Sterilization? a) 72°C to 74°C for 15 to 20 seconds b) 135°C to 140°C for 2 to 4 seconds c) 63°C for 30 minutes d) 115 – 120°C for some 10 – 20 minutes	1.5	CO3
Q10	The final removal of liquid from solids by vaporization with the aid of heat is known as: a) Evaporation b) Drying c) Sublimation d) Desiccation	1.5	CO3
Q11	Heat exchanger works on which of the following principle? a) Direct heating b) Indirect heating c) Slow heating d) Fast heating	1.5	CO3
Q12	Which of the following is the target microbe in commercial sterilization? a) *Pseudomonas aeruginosa* b) *Bacillus anthracis* c) *Salmonella typhi* d) *Clostridium botulinum*	1.5	CO3
Q13	Which process is generally carried out by retorts? a) Pasteurization b) Freezing c) Blanching d) Sterilization	1.5	CO3

Q14	The quality problem with sliced apples and potatoes is: a) Enzymatic browning b) Lipolytic rancidity c) Hydrolytic rancidity d) Putrefaction	1.5	CO2
Q15	In drying of fruit which chemical is used to minimize browning a) Carbon dioxide b) Sulphur dioxide c) Benzene d) Chlorophyll	1.5	CO2
Q16	The main causative spoilage organisms of dried fruits and vegetables are: a) Mould b) Yeast c) Bacteria d) All of them	1.5	CO1
Q17	Subjecting fats to high temperature in the presence of oxygen such that fats deteriorate is called _____. a) Hydrolytic rancidity b) Auto-oxidation c) Thermal decomposition d) Lipolysis	1.5	CO3
Q18	Rice has a higher water activity than apples. a) True b) False	1.5	CO6
Q19	Statement 1: Destruction of the phosphate-based enzyme in milk after heat treatment is an indication that several pathogens have been destroyed. Statement 2: Destruction of the peroxide-based enzyme in fruits after heat treatment is an indication that several pathogens have been destroyed. a) True, False b) True, True c) False, False d) False, True	1.5	CO6
Q20	Which of the following falls in the low acidic group? a) Plant and animal tissues b) Manufactured items c) Fruits d) Jams and jellies	1.5	CO5
	Section B **(4Qx5M=20 Marks)**		
Q 1	What is the importance of food irradiation? Describe the different setups used for food irradiation. **(2.5 + 2.5 marks)**	5	CO5

Q 2	Define refrigeration. Explain the working of the refrigeration system with components. **(2.5 + 2.5 marks)**	5	CO4
Q 3	Describe enzymatic browning and also explain various applications of blanching. List down reasons for food spoilage. **(2.5 + 2.5 marks)**	5	CO3
Q 4	What do you understand by crystallization? Differentiate between slow and quick freezing. **(2.5 + 2.5 marks)**	5	CO4
	Section C **(2Qx15M=30 Marks)**		
Q 1	Nancy works at a cheese processing unit. They subject the cheese to oxidation. Which of the following comments pertaining to the above scenario are correct? **(2 marks)** a) Oxidation is necessary for products like cheese b) Lipid Oxidation is otherwise a major concern for the food industry c) Deterioration of fats and oils is called rancidity d) All of the mentioned. What are the various factors responsible for rancidity? **(3 marks)** What is frying and its principle? **(5 marks)** Describe different food frying methods. **(5 marks)**	15	CO3
Q 2	Sunil owns a fruit and vegetable processing unit, and it produces canned fruit slices as its final product. Answer the following questions: i. Describe the principle and working of the canning process with the steps of the canning process. **(10 marks)** ii. Suggest and describe the canning process for two food commodities. **(5 marks)**	15	CO5
	Section D **(2Qx10M=20 Marks)**		
Q 1	Explain the following processes **(2 marks each)**: a) Chilling injury b) Roasting c) Concentration d) Canning e) Evaporation	10	CO5
Q 2	What is the moisture content and also mention its importance for food processing? Describe different types of food spoilage in detail. **(5+5 marks)**	10	CO1