

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
School of Health Sciences

End Semester Examination, December 2021

Programme Name: B.Tech Food Technology
Course Name : Food Preservation Technology

Semester : 3rd
Duration : 03 hrs

Course Code : HSFT_2005

Max. Marks : 100

Instructions : All the questions are compulsory

SECTION A

		Marks	
Q 1	Oxidation of food resulting in rancidity is a type of .....spoilage.	1.5	CO2
Q2	The time and temperature combination for HTST is	1.5	CO3
Q3	.....is used as the source of irradiation for commercial application.	1.5	CO3
Q4	Case hardening of food is caused during .....of food.	1.5	CO5
Q5	Processing and packaging of food under sterile condition is called as.....	1.5	CO3
Q6	Equipment used for measuring water activity is called as.....	1.5	CO6
Q7	Steam economy is more in.....feeding of evaporator.	1.5	CO5
Q8	..... reaction is responsible for brown colour of fried and baked foods.	1.5	CO3
Q9	.....is a heat resistant enzyme in food.	1.5	CO2
Q10	PAHs in smoking of food stands for.....	1.5	CO6
Q11	.....is the key food regulatory agency in India.	1.5	CO1
Q12	Bacterial cells shows maximum resistance against the heat during a. Logarithmic phase b. Lag phase c. Late lag phase d. Decline phase	1.5	CO2
Q13	The degree in Fahrenheit required to reduce the thermal death time tenfold is a. D value b. F value c. Z value d. Lethal rate	1.5	CO3

Q14	Which of the following statement is / are correct? a. Benzoates are effective against microorganism in undissociated form b. Sorbates are effective against bacteria c. Acetates are effective against mold d. All of the above	1.5	CO6
Q15	Blast freezing is preferred to slow freezing because a. Large ice crystals are formed in food b. Very small crystals are formed c. Food freezes gradually in a blast of cold air d. Food can be stored indefinitely in the refrigerator	1.5	CO4
Q16	Generally , for the destruction of <i>Clostridium botulinum</i> , _____ process is done a. 2 D b. 6 D c. 8D d. 12D	1.5	CO3
Q17	Function of a throttling device in a vapour compression system is a. To release the vapour when its pressure increases the safety limit b. To reduce the pressure of refrigerant vapour and direct it to compressor c. To reduce the pressure of liquid refrigerant d. To evaporate the liquid refrigerant	1.5	CO4
Q18	Which of the following fermentation methods are used in food preservation a. Lactic acid fermentation b. Acetic acid fermentation c. Alcoholic fermentation d. all of the above	1.5	CO6
Q19	Food processing institutes of national importance “NIFTEM” are opened by a. FSSAI b. MOFPI c. MHRD d. None of the above	1.5	CO1
Q20	Freezer burn is common in problem during freezing of a. Meat b. Cereals c. Fruits d. Dairy products	1.5	CO4

SECTION B


Short answer type questions

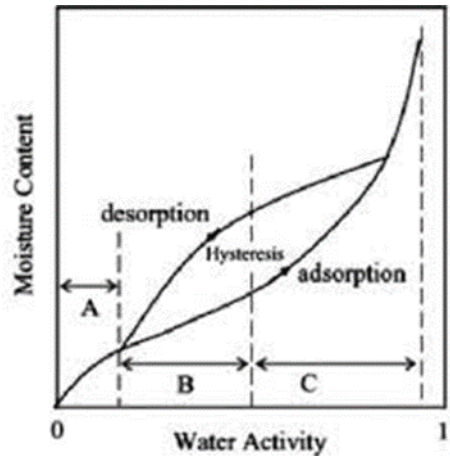
Q1	What are the basic principles of food preservation and discuss the different types of food spoilage?	05	CO2
Q2	A fruit processing industry has decided to launch canned pineapples. The company need to follow the 12D concept for the canning of the product. a. Outline using the flow chart the various steps involved in the canning of the pineapple?	05 (3+2)	CO3

	b. In a canning industry, it is found that initial microbial load of pineapple is 10^2 and it is to be decreased to 10^{-6} . If the decimal reduction time of microorganism at 121.1 °C is 0.5 min. What should be the F value?		
Q3	Discuss any three dryers used for drying of liquid foods?	05	CO5
Q4	Elaborate the status of food processing industries in India?	05	CO1

SECTION C

Case studies questions

Q1	<p>A consumer bought some strawberries from the supermarket and found the following logo on the product.</p>  <p>a. What is the name of the logo and what does it mean? b. Explain the advantages and limitations of the preservation technique used for the strawberries? c. Describe the equipment used for the preservation technique. d. List the various application of the preservation technique in food industry.</p>	15 (2+5+4+4)	CO3
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Q2	 <p>a. What does this curve represents? Explain the relationship between moisture content and water activity using this curve? b. Describe the BET and GAB model of water activity and moisture content relationship? c. What is the water activity range and moisture content of IMF foods? Are IMF prone to chemical and enzymatic spoilage?</p>	15 (7+4+2+2)	CO6
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	d. A dry soup manufacturer processed soup mix to 3% moisture content (water activity=0.28). They received a new pepper to add mix, which was also 3% moisture content (water activity=0.69). What problem will arise if pepper mix is added to the dry soup mixture?		
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SECTION D

Long answer type questions

Q1	Write a note on theory of Freezing? Differentiate between air blast, fluidized bed, immersion and cryogenic freezing? What do you mean by refrigeration load and refrigeration capacity?	10 (4+4+2)	CO4
Q2	Elaborate the theory of membrane concentration method for food processing? What are the different types of membrane modules used for membrane concentration? Compare the membrane concentration with other concentration methods?	10 (3+4+3)	CO5