

Question Bank of Ice cream and Frozen Desserts

- Short question:

1. Definition of Ice-Cream.
2. Chemical composition of ice cream.
3. Classification of stabilizer with example.
4. Definition and type of emulsifier.
5. Selection criteria for choosing an emulsifier for ice cream.
6. Selection criteria for choosing a stabilizer for ice cream.
7. What is Mellorine type products? Give example.
8. Define Diabetic ice cream?
9. What is the percent milk fat in Sherbets?
10. What is the difference between sucrose and aspartame?
11. Write the reason for sandiness in ice cream.

- Long question:

2. Define stabilizer. Give example. Classify different stabilizer. Describe the mechanism of action of stabilizer in ice cream preparation with suitable picture.
3. What is packaging? What are the factors that need to be considered in selection of ice cream container? Give some example of ice cream packaging.
4. What are the dairy ingredients used in ice cream preparation? Explain about different source of milk fat and milk SNF in ice cream.
5. Define Emulsifier. What is the different category of emulsifier? What is the role of emulsifier in ice cream preparation? Explain the mechanism of action of emulsifier with suitable picture.
6. What is ice cream hardening? Explain about hardening time and hardening process
7. Explain about the body and texture defect of ice cream.
8. Explain about the Pasteurization, Cooling, Ageing and Flavour addition during preparation of ice cream.
9. Explain about the working of batch freezer and continuous freezer.

10. What is overrun of ice cream? How to calculate the overrun? What are the factors that depress and enhance the overrun?

MCQ

S. NO	MCQ	Instructions (Choose the correct answer)		
1.		Minimum total solid content in normal ice cream is		
	a)	36 %	YES	
	b)	26%		
	c)	20%		
	d)	15%		
2.		Overrun of super- premium ice cream is		
	a)	0 – 20%	YES	
	b)	10 – 20%		
	c)	30 – 40%		
	d)	10 – 15%		
3.		Strength of acid solution for cleaning of freezer is		
	a)	0.15 - 0.6 %	YES	
	b)	1 – 1.5 %		
	c)	1.5 – 2.0%		
	d)	3 – 4 %		
4.		Ice cream bars may be wrapped with wrapper made of		
	a)	BOPP laminates	YES	
	b)	PP laminates		
	c)	HDPE		
	d)	LDPE		
5.		In hardening process, the aim is to reduce the temperature of the product to at least		
	a)	0°F	YES	

	b)	0°C		
	c)	5°C		
	d)	4°C		
6.		The time necessary for the temperature at the centre of the package to drop to -18°C		
	a)	Freezing time		
	b)	Cooling time		
	c)	Both a and b		
	d)	Hardening time	YES	
7.		For convection hardening the air temperature should be		
	a)	-34.4°C	YES	
	b)	-18°C		
	c)	-20°C		
	d)	-30 °C		
8.		For fast hardening, in hardening tunnels, produce an air blast at		
	a)	-34.4 to – 45.5°C	YES	
	b)	-34.4 to – 45.5°F		
	c)	-34.4 to – 45.5°K		
	d)	-30.4 to – 40.5°C		
9.		Maximum time required for effective freezing of 500 ml ice cream without affecting body and texture in cryogenic hardened is		
	a)	1 minute	YES	
	b)	2 minute		
	c)	3 minute		
	d)	4 minute		
10.		Liquid nitrogen requirement for hardening of 1 k ice cream is		
	a)	0.56 kg	YES	
	b)	1 kg		
	c)	0.25 kg		

	d)	0.9 kg		
11.		Ice cream manufacturers generally plan _____ days between freezing and marketing		
	a)	5 days	YES	
	b)	7 days		
	c)	3 days		
	d)	2 days		
12.		Freezing point of dry ice is		
	a)	-78.3°C	YES	
	b)	-78.3°F		
	c)	-78.3K		
	d)	-70.3°C		
13.		insulated trucks the outside material is which metal which reflects lights and shines		
	a)	Aluminum metal	YES	
	b)	Copper metal		
	c)	Iron metal		
	d)	Steel		
14.		Maximum size of fat globules in a ice cream mix after homogenization is		
	a)	2 μ		
	b)	6 μ		
	c)	4 μ		
	d)	10 μ		
15.		Sandiness defect in ice cream is due to		
	a)	Lactose crystal	YES	
	b)	Ice crystal		
	c)	Fat crystal		
	d)	Stabilizer		

Fill in the blanks

	TXT	Instructions (Fill in the Blanks)	Answer
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S. No.			
1		During discharge of the last portion of the ice cream batch _____ in the overrun was observed in batch freezer	decrease
2		For batch method, ice cream pasteurization temperature is_____.	68.5°C/ 30 min
3		Aging of ice cream mix causes hydration of milk protein and crystallization of_____.	fat
4		In direct expansion type batch freezer, generally ammonia or _____is used as refrigerant	Freon
5		For 100 % overrun, the size of the batch freezer varies between 18—20 litres and _____litres	36-40
6		Aging of ice cream mix causes _____of milk protein.	hydration
7		The cleaning solution containing sufficient acid are phosphoric acid and _____acid	hydroxy-acetic
8		A hardening time of for _____hours for19 litres package is considered as excellent operation when performed in hardening rooms	6-8
9		Slow hardening favors formation of _____ice crystals and a corresponding coarseness of texture	large
10		In contact plate hardeners, heat transfer is effective if all the containers should be in same size and _____.	Geometry

S.No.	MATCH	Left side	Right side (Answers)	
1	1	Hardening temperature – 15°C	80% water frozen	
	2	Hardening temperature – 14°C	78.5 % water frozen	
	3	Freezing point of ice cream	Vapor pressure osmometer	
	4	Viscosity of ice cream	Falling Ball Viscometer	
	5	Slow freezing	Coarse texture	
	6	Soggy defect	High sugar content	
	7	Coarse texture	Low solid content	
	8	Shrinkage defect	Temperature fluctuation	
	9	Sandy texture	High lactose content	
	10	Buttery texture	Inadequate homogenization	