

University of Mumbai

Examination Summer 2022

Program: **Chemical Engineering**

Curriculum Scheme: Rev2019

Examination: TE Semester: V

Course Code: CHDO5011

Time: 2hour 30 minutes

Course Name: Food Engineering

Max. Marks: 80

Q1.	Choose the correct option for following questions. All the Questions are compulsory and carry equal marks
1.	Time in minutes required to reduce the number of survivors to one tenth of the original at a specified temperature is called as...
Option A:	D value
Option B:	T value
Option C:	A value
Option D:	B value
2.	Which of the following is true about fruits and vegetable processing?
Option A:	They can be stored at high temperature
Option B:	They have low moisture content
Option C:	They are tender and hence not gets spoiled easily
Option D:	They get spoiled very fast hence need to be consumed soon
3.	The fermentation process occurring in the absence or near-absence of free water is called as
Option A:	Liquid state fermentation
Option B:	Gas state fermentation
Option C:	Solid state fermentation
Option D:	Gas-liquid state fermentation
4.	Scientific and systematic way of defining, evaluating and controlling hazards to ensure the safety of food?
Option A:	Hazard analysis and critical control point (HACCP)
Option B:	Food safety objectives (FSO)
Option C:	Good hygiene practices (GHP)
Option D:	Good manufacturing practices (GMP)
5.	In beer manufacturing,----is done to initiate hydrolysis & solubilize the Polysaccharides
Option A:	malting
Option B:	brewing
Option C:	mashing
Option D:	Maturing
6.	Milk and fruit juices are de-aerated before they are allowed to flow through

	pasteurizer. This is done in order to
Option A:	Reduce fouling of pasteurizer
Option B:	Reduce oxidation deterioration
Option C:	Increase the rate of heat transfer
Option D:	Reduce the rate of heat transfer
7.	Which of the following is true about packaging food prior to freezing?
Option A:	Insulates the food
Option B:	Controls dehydration
Option C:	Avoid the microbial deterioration
Option D:	Insulates the food & Controls dehydration
8.	Difference of Green tea from Black tea is that _____
Option A:	The oxidation process is omitted
Option B:	The tea leaves are steamed in a pan before being rolled so that the enzymes don't interact with air and oxidize
Option C:	The oxidation process is omitted & the tea leaves are steamed in a pan before being rolled so that the enzymes don't interact with air and oxidize
Option D:	None of the mentioned
9.	Which of the following microorganism is eliminated in canned foods?
Option A:	Mycobacterium tuberculosis
Option B:	Coxiella burnetii
Option C:	Clostridium botulinum
Option D:	Lactobacillus
10.	Which of these is prerequisite programme for food industry?
Option A:	Validation
Option B:	GMP & GHP
Option C:	Codex
Option D:	FSSAI

Q2. (20 Marks)	Solve any Two Questions out of Three (10 marks each)
A	Explain in detail Hurdle Technology along with its Example.
B	Write in detail manufacturing of Tea Powder with different grades of Tea.
C	Explain in detail sigma blade mixer for high viscosity liquids and paste.

Q3. (20 Marks)	Solve any Two Questions out of Three (10 marks each)
A	What are the different steps involved in upstream processing of foods. Write short notes on Sorting and Grading.
B	Write short notes on following i) D value ii) Z value iii) F value
C	Explain in detail about Modified Atmosphere Storage (MAS) and Modified Atmosphere Packaging (MAP).

Q4. (20 Marks)	Solve any Two Questions out of Three (10 marks each)
A	Explain in detail how carbohydrates and proteins are important?
B	Write short notes on following i) Emulsification ii) Homogenization.
C	What are the different steps in freeze Concentration? Write them in detail.