


Name:	 UPES UNIVERSITY OF TOMORROW
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: Food Preservation and Baking
Program: B.Sc. FND
Course Code: HSFT3001P

Semester: VI
Time : 03 hrs.
Max. Marks: 100

Instructions: All questions are compulsory.

Q.No	Section A	(20Q x1.5M= 30 Marks)	COs
Q	Short answer questions/ MCQ/Fill in the blanks	1.5	CO
1.	Name two indicator enzymes for the blanching of vegetables?	1.5	CO1
2.	What is the typical time and temperature combination for HTST treatment of milk?	1.5	CO1
3.	The characteristic golden-brown crust of baked products is due to and reactions.	1.5	CO1
4.	What do you understand by “use by” and “best before” for baked foods?	1.5	CO4
5.	Briefly explain the term “damaged starch” in wheat flour?	1.5	CO2
6.	Define all purpose flour, self-rising and cake flour?	1.5	CO2
7.	What is sourdough starter culture?	1.5	CO2
8.	Mention any three natural flavors permitted by FSSAI in baked goods?	1.5	CO4
9.	Name two types of packaging methods for biscuits?	1.5	CO4
10.	What is double acting baking powder?	1.5	CO3
11.	Which of the following is the process of making the dough? 1. Chorleywood process 2. Finkelstein process 3. Sandmeyer process 4. Hoffmann process	1.5	CO2
12.	Angel and sponge cakes are	1.5	CO3

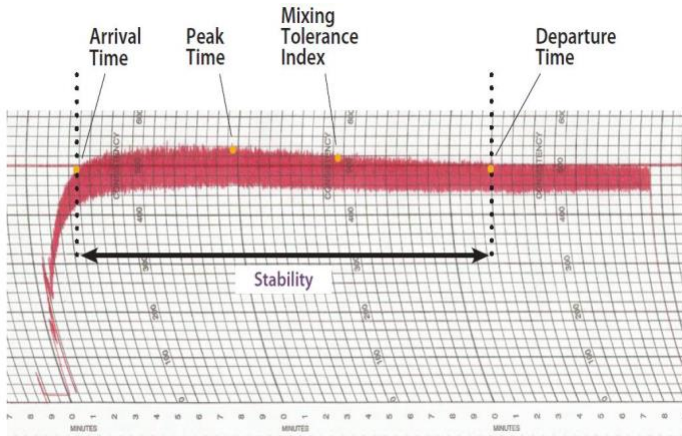
	<ol style="list-style-type: none"> 1. Yeast-raised products 2. Chemically leavened products 3. Air leavened products 4. Partially leavened products 		
13.	<p>In soda cracker manufacture, flours varying in protein content from about ----- are</p> <ol style="list-style-type: none"> 1. 6-7% 2. 7-8% 3. 9-10% 4. 11 - 12% 	1.5	CO3
14.	<p>Ropiness of bread is caused by</p> <ol style="list-style-type: none"> 1. <i>Saccharomyces cerevisiae</i> 2. <i>Rhizopus stolonifera</i> 3. <i>Bacillus subtilis</i> 4. <i>Endomycosis fibuligera</i> 	1.5	CO2
15.	<p>The effect of Glucose oxidase on the rheological properties of dough may be quantitatively explained by</p> <ol style="list-style-type: none"> 1. Decreasing gelatinization of starch granules during baking 2. Increasing the water absorption capacity of the flour 3. Breaking the disulphide cross link between protein molecules 4. All of the above 	1.5	CO2
16.	<p>Nucleating agents are used during extrusion cooking to</p> <ol style="list-style-type: none"> 1. Get expanded product 2. Provide finer texture 3. Increase shelf life of the product 4. Increase interaction between starch and protein 	1.5	CO3
17.	<p>Which of the following is true for HLB value of emulsifiers?</p> <ol style="list-style-type: none"> 1. HLB stands for hydrophilic/lipophilic balance. 2. An HLB scale goes from 0 to 20. 3. Dough strengtheners have an HLB value greater than 10. 4. All of the above 	1.5	CO2

18.	The permissible limit of benzoyl peroxide as flour treatment agent by FSSAI is 1. 100 ppm 2. 40 ppm 3. 500 ppm 4. 200 ppm	1.5	CO4
19.	Coarsely ground white endosperm chemically same to the wheat flour is known as 1. Semolina 2. Flour 3. Mill feed 4. Shorts	1.5	CO1
20.	Which of the following additives were banned by FSSAI in baked products? 1. Ammonium chloride 2. Potassium bromate 3. DATEM 4. Sodium metabisulfite	1.5	CO4
	Section B	(4Qx5M=20 Marks)	CO
Q	Short answer type questions		
1.	Explain the role of enzymes in bread baking? Or Explain the role of oxidizing agents in bread baking?	5	CO2
2.	Write short notes on any two preservation techniques: 1. Pasteurization 2. Baking 3. Aseptic Processing	2.5+2.5	CO1
3.	What is extrusion cooking? Explain the role of extrusion cooking in pasta and noodle manufacturing?	2+3	CO3
4.	Elaborate on modified atmosphere packaging and active packaging for bakery products? Or What are the common adulterants detected in baked goods?	2.5+2.5 5	CO4
	Section C	(2Qx15M=30 Marks)	
Q	Case studies		CO

1. The farinograph is obtained by the dough rheology testing lab. Answer the below questions based on the graph?

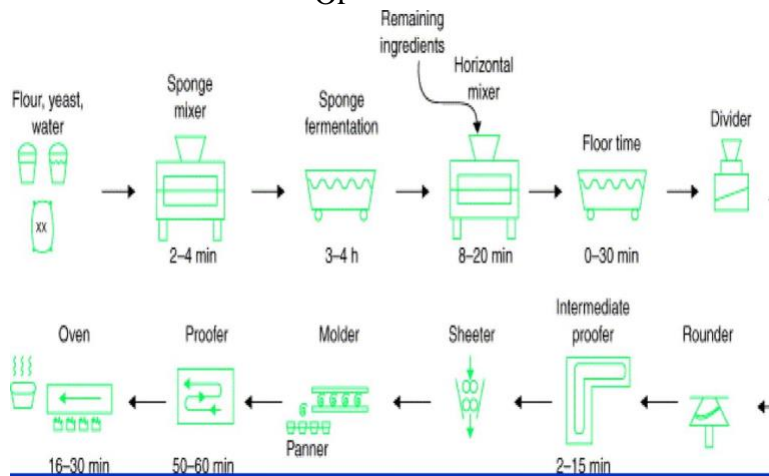
1+6+8

CO3



- Which gluten flour produces this kind of Farinograph? Weak or strong gluten flour?
- What is the principle and functions of Farinograph analysis?
- Explain the following Farinograph parameters?
 - Dough Development Time
 - Stability
 - Mixing Tolerance Index

Or



7+5+3

- Give the name of the breadmaking process depicted in the diagram and explain the detailed process?
- Compare the method with straight dough fermentation and no-time dough method for bread making?
- Mention the influence of the bread making process on the sensory properties such as crumb structure, texture, taste and aroma of white bread?

2. Read the following paragraph and answer the questions?

5+5+5

CO4

The production of traditional bakery products involves four steps of which ingredient mixing, dough kneading, fermentation and baking are involved. Gluten plays an important role in all of these procedures

	<p>(Ziobro <i>et al.</i>, 2016). However, for people born with certain health conditions, the gluten in wheat can cause problems (Armstrong <i>et al.</i>, 2012; Aronsson <i>et al.</i>, 2015; Furlán & Chen, 2017). An increasing demand of gluten-free (GF) products is caused by a growing number of diagnosed celiac diseases and a consumption trend to eliminate allergenic proteins from diet. GF bakery products are often less desirable in terms of their appearance, taste, aroma and texture. The simplest way to improve the structure of GF products is by adding other functional ingredients and additives (e.g. starches, protein, gum, hydrocolloids, emulsifiers, dietary fibre) to the wheat flour substitutes (e.g. rice, maize, sorghum, buckwheat, amaranth, quinoa, corn, chickpea) as reported by numerous authors (Arendt & Moore, 2006; Różyło <i>et al.</i>, 2015; Rocha <i>et al.</i>, 2015a; Akesowan, 2016).</p> <p>a) What is Gluten? What is the role of gluten in baked products? b) One of the major problems of gluten free products is weak structure and nutritional property. Which gluten free alternative flour can be used to replace the wheat flour? Explain about any two flours in resolving the above issues? c) Gums and hydrocolloids are among the most important ingredients in GF formulation used to improve texture and appearance of products. Elaborate the properties of hydrocolloids in improving texture? Name any two hydrocolloids used in GF formulations?</p>		
	Section D	(2Qx10M=20 Marks)	
Q	Long Answer Type questions		CO
1.	<p>a) What do mean by the shelf life of the food? b) Explain the various factors affecting the shelf life of baked products? c) How sensory science can be used to study the shelf life of foods?</p>	2+5+3	CO1
2.	<p>What is bread staling? Explain the reason for the staling process and its prevention to improve the shelf life of bread? Or What do you understand by flour extraction rates? Classify the flours based on extraction rates?</p>	3+7	CO2