Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI EXAMINATION – WINTER 2015

Subject Code:161402 **Date:17/12/ 2015**

Subject Name: Food Rheology and Sensory Evaluation

Time:2:30pm to 5:00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Describe with neat sketch i) Plasticity ii) Stiffness iii) Resilience iv) Bio yield point	**08**
	(b)	State the significance of the followings. i) Defining test objective in sensory study ii) Fat content in chocolate mass iii) Time of day during sensory study	**06**
Q.2	**(a)**	What are the different moduli in food material? Discuss with suitable examples their importance.	**07**
	(b)	Compare the mechanical and electrical models used in the food industry. Which is better? Justify your answer.	**07**
		OR	
	(b)	What are the different reactive surfaces used in e-nose and how they work?	**07**
Q.3	**(a)**	Explain the term "tristmulus" value of color with suitable example.	**07**
	(b)	Explain the calibration procedure of e-nose. How useful information can be derived from it?	**07**
		OR	
Q.3	**(a)**	What is significance of time of retardation? Develop a relationship to prove that at the time of retardation, strain in the biological material is only 63.2% of the total strain.	**07**
	(b)	Which are the instruments used in food industry to find the color of food? Describe one.	**07**
Q.4	**(a)**	Explain steps in conducting sensory evaluation of food product	**07**
	(b)	Differentiate between the followings. i) Triangle test and Duo trio test ii) Hedonic rating and Composite scoring test	**04**
	(c)	Highlight on texture profile analysis of food product?	**03**
		OR	
Q.4	**(a)**	XYZ confectionary manufacturing company developed low cost packaging material for their products. The company now wishes to confirm the effect of newly developed packaging material on sensory attributes of products during storage. Suggest the most suitable sensory evaluation method and design the sensory evaluation card.	**07**
	(b)	Discuss briefly selection of difference type of panel member.	**04**
	(c)	What are different types of scales employed in sensory evaluation?	**03**
Q.5	**(a)**	Discuss the effect of particle size distribution, temperature, tempering and conching on the rheology of chocolate mass.	**07**
	(b)	Compare merits and limitations of human olfactory system and e-nose.	**04**
	(c)	Show the stress-strain/ flow behavior of the food: i) Non Hookean (ii) Bingham (iii) non-Newtonian	**03**

OR

Q.5	**(a)**	What do you understand by Test control? State its role in controlling biases during sensory evaluation.	**07**
	(b)	Discuss Lambert's law and Beers' law of spectrophotometry.	**04**
	(c)	Explain in brief with respect to food: i) Fracture stress ii) True stress and iii) Isotropic stress	**03**

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