

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- VIth SEMESTER-EXAMINATION – MAY- 2012

Subject code: 161402

Date: 11/05/2012

Subject Name: Food Rheology and Sensory Evaluation

Time: 10:30 am – 01:00 pm

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)** Differentiate the following and show with figure
- | | | |
|------|---|-----------|
| I. | Resilience and Mechanical hysteresis | 02 |
| II. | Bingham and Non-Bingham flow | 02 |
| III. | Elasticity and plasticity of bio material | 02 |
- (b)** Answer the following questions in short. **08**
- 1) Enlist areas of sensory evaluation laboratory?
 - 2) What are four basic tastes as human perceives?
 - 3) Time of the day while sensory evaluation affects on the result.
Why?
 - 4) “Lack of motivation to sensory panel member distracts
performance of panel member in long run”. Justify the statement.
- Q.2**
- (a)** Describe the importance of the following for the development of food product
- | | | |
|------|-------------------------|-----------|
| I. | Initial tangent modulus | 02 |
| II. | Secant modulus, | 02 |
| III. | Chord Modulus | 03 |
- (b)** Discuss different application areas of sensory evaluation in food industry. **07**
- OR**
- (b)** Explain basic stages for conducting sensory evaluation study of food product. **07**
- Q.3**
- (a)** What is human olfactory system? Describe different types of Reactive surfaces? **07**
- (b)** Explain Paired comparison test with its application in food industries. **07**
- OR**
- Q.3**
- (a)** How color is quantified? Describe CIE system of color measurement? **07**
- (b)** Explain panel selection and training in difference type of test. **07**
- Q.4**
- (a)** Describe basic rheological models, their equivalent mechanical and electrical models. Why electrical models are preferred over mechanical models? **07**
- (b)** Explain the importance of critical dimension? In a resonance technique **07**

a potato sample of 60 mm long and 20 mm in diameter was tested under compression. The recorded resonant frequency obtained was 30 hertz. If the mass density of the potato is 1.128g/cc, find the modulus of elasticity of the potato sample.

OR

- Q.4** (a) What is the significance of time of relaxation of food product? Develop its generalized equation and its relationship with the original stress. **07**
(b) How the study of Rheology helps in designing the food? **07**

- Q.5** (a) What is casson body? Explain the significance of particle size and moisture content in chocolate rheology. **07**
(b) What do you understand by Texture? Explain basic parts of texture measuring instrument. **07**

OR

- Q.5** (a) Explain Triangle Test method with its application. **07**
(b) XYZ company has developed fruit drink. Already in the market same category product is doing well in the market. Before placing the product in the market, The company wish to know strength and weakness of their and competitor product. Suggest the suitable test method and design scorecard. **07**
