



**Uva Wellassa University, Sri Lanka**  
**Faculty of Science and Technology**  
**Science and Technology Degree Program**  
**1<sup>st</sup> Semester Examination February/March 2012**  
**SCT 423-1 Sensory Evaluation of Food**

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**Instructions for Candidates**

Answer three (03) questions including question number one (01)

Total questions : 04

Time : One (01) hour

Total Marks allotted: 100

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1. A cake manufacturer found that sole competitor for his brand (A) is the brand B, which is manufactured by a reputed baker in Colombo. However, the cake manufacturer does not have an adequate knowledge to determine the shortcomings associated with his brand (A), as against the brand B; assume that he has sought your assistance to get this task accomplished.
  - i. Explain how you are going to conduct this sensory evaluation.
  - ii. What are the most important sensory stimuli that you would assume associated with cakes?
  - iii. Explain the importunacy of the binomial distribution in interpreting the outcome of this sensory evaluation. (40 marks)
  
2. Bread staling process cause huge losses in the bakery industry and researchers found that bread staling process is closely related to the elasticity of the bread crumb. The theory says, "Incorporation of more shortening can delays the staling process". Convinced by this theory, a Bakery Manager made loaf breads using 1%, 3% and 4% shortening and measured elasticity of the bread crumb after 36 hours from preparation. Results were compared with the same property of fresh bread.

Replicate	Elasticity of fresh bread crumb %	Elasticity of bread crumbs after 36 hours %		
		1% Shortening	3% shortening	4% shortening
1	11	2.5	5.0	8.0
2	12	3.5	5.0	10.0
3	10	3.0	5.0	9.0
Total	33	9.0	15.0	27.0
Mean	11	3.0	5.0	9.0

**Sum of square between treatments = 120**

- i. Draw an ANOVA table using above data.
  - ii. If table value  $F^3_8$ , 5% 4.07, is there a significant different between the treatments?
  - iii. Explain the difference between parametric ANOVA and non-parametric ANOVA in sensory evaluation.
  - iv. Explain how you are going to further analyze these results statistically in order to determine the best treatment. (30 marks)
3. A Marketing Manager of a reputed company wanted to determine customer satisfaction of his product (Brand X) as against the three popular brands (Brand A, B and C) available in the market. However, he does not have an idea how to conduct this study; consequently the task was entrusted on you.

- i. Briefly explain how you are going to perform this task.

Responses of 20 respondents for five sensory stimuli namely taste, smell, color, texture and overall acceptability on a 5 point hedonic scale are given below.

Reputed brand	Mean value of responses of 20 respondents				
	Taste	Smell	Color	Texture	Overall acceptability
A	4	5	4	2	4
B	5	4	3	3	3
C	2	3	2	2	3
Own brand (X)	4	5	2	4	5

- ii. Draw the sensory profiles for each brand
- iii. Which sensory stimulus of brand X is to be improved?
- iv. Explain how you are going to improve the defective sensory stimulus cited in the answer iii, using your own knowledge in Food Science and Technology.

(30 marks)

4. Write short notes for the followings

- i. Importance of sensory profiles in analyzing competitive food products.
- ii. Food has a diverse role rather than fulfillment of the nutritional requirements of humans.
- iii. Triangular test method is the most popular test method amongst different test methods in sensory evaluation.
- iv. Vocabulary training is very important in sensory evaluation. (30 marks)

