



**1<sup>ST</sup> SEM. 2010/2011**

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**UNIVERSITY OF SWAZILAND**

**SUPPLEMENTARY EXAMINATION PAPER**

**PROGRAMME : FOOD SCIENCE, NUTRITION AND TECHNOLOGY YEAR II**

**COURSE CODE : FSNT 202**

**TITLE OF PAPER : SENSORY EVALUATION**

**TIME ALLOWED : TWO (2) HOURS**

**INSTRUCTIONS : ANSWER QUESTION ONE (1)  
AND ANY OTHER (2) QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

**QUESTION 1 [COMPULSORY]**

- a) The senses of sight, smell and taste play a very important role in sensory analysis. Discuss the defects of the above mentioned senses that could affect sensory evaluation.

**[12 Marks]**

- b) Discuss the five variables that could affect sensory assessment of texture.

**[10 marks]**

- c) Discuss why random allocation of treatments is important.

**[5 marks]**

- d) Explain how a sensory evaluation questionnaire should be designed, giving an example using a difference paired comparison test

**[8 marks]**

- e) Explain how you would balance a presentation of 2 samples to 28 panelists, giving examples where appropriate.

**[5 marks]**

**[Total = 40 marks]**

**QUESTION 2**

- a) Discuss the balanced duo-trio test and the possible serving orders in this type of test.

**[5 marks]**

- b) Discuss the requirements of sensory evaluation area.

**[10 marks]**

- c) Discuss the sensory test protocol considerations under the following headings

- i. Swallowing and expectoration
- ii. Sample size
- iii. Carriers

**[15 marks]**

**[Total = 30 marks]**

**QUESTION 3**

- a) A panel of 50 assessors is offered two yogurt samples: A (765) and B (643) in a Triangle test (discrimination test). 27 Panelists were able to pick the odd sample and 23 Panelists were not able to pick the correct odd sample. What can be concluded in this sensory test? Use statistical table,  $\alpha = 0.05$

**[3 Marks]**

- b) Explain the following sensory evaluation methods giving an example in each:
- i. Descriptive method
  - ii. Affective method
  - iii. Discrimination method

**[9 Marks]**

- c) Discuss why statistical analysis is important in sensory evaluation.

**[5 Marks]**

- d) Discuss **four** errors that may occur during sensory evaluation of food samples.

**[10 marks]**

- e) Define sensory evaluation.

**[3 Marks]**

**[Total = 30 marks]**

**QUESTION 4**

- a) Describe how a free choice profiling in descriptive analysis is performed.

**[10 marks]**

- b) Discuss the following factors to consider when conducting consumer tests:

- i. Test design
- ii. Test subjects

**[14 Marks]**

- c) Explain how sensory evaluation is applied in product optimization.

**[6 marks]**

**[Total = 30 marks]**

## Statistical Tables for Sensory Tests

**Table A**

### Critical Values for difference tests

n \ $\alpha$	Directional difference or Duo-trio				Triangle test	
	One-sided		Two-sided			
	0.05	0.01	0.05	0.01	0.05	0.01
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	5	-	-	-	4	-
6	6	-	6	-	5	-
7	7	7	7	-	5	6
8	7	8	8	8	6	7
9	8	9	8	9	6	7
10	9	10	9	10	7	8
11	9	10	10	11	7	8
12	10	11	10	11	8	9
13	10	12	11	12	8	9
14	11	12	12	13	9	10
15	12	13	12	13	9	10
16	12	14	13	14	9	11
17	13	14	13	15	10	11
18	13	15	14	15	10	12
19	14	15	15	16	11	12
20	15	16	15	17	11	13
25	18	19	18	20	13	15
30	20	22	21	23	15	17
35	23	25	24	26	17	19
40	26	28	27	29	19	21
45	29	31	30	32	21	23
50	32	34	33	35	23	25
60	37	40	39	41	27	29
70	43	46	44	47	31	33
80	48	51	50	52	34	37
90	54	57	55	58	38	41
100	59	63	61	64	42	45