



UNIVERSITY OF ESWATINI  
Faculty of Health Sciences  
Department of Environmental Health Science

BSc IN ENVIRONMENTAL HEALTH SCIENCE  
RE-SIT EXAMINATION PAPER 2021  
**EXAM PAPER**

TITLE OF PAPER:           **SENSORY EVALUATION**

COURSE CODE:            EHS425

DURATION:                2 HOURS

MARKS:                    100

INSTRUCTIONS:         READ THE QUESTIONS AND INSTRUCTIONS CAREFULLY

**ANSWER ANY FOUR QUESTIONS**

                                  EACH QUESTION **CARRIES 25 MARKS**

                                  BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER

                                  WRITE NEATLY AND CLEARLY

**DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED  
BY THE INVIGILATOR**

### QUESTION ONE

1. Describe the difference between the Quantitative Descriptive Analysis (QDA) and the Spectrum™ Descriptive Method for descriptive analysis. [10 Marks]
    - 1.1 QDA
    - 1.2 Spectrum
  2. Define the term “sensory threshold” and discuss the three types of sensory thresholds (Recognition, absolute and difference threshold). [10 Marks]
  3. There are four basic tastes (Sweet; Salt; Sour; and Bitter). However, in 1908 Dr. Kikunae Ikeda, from Tokyo Imperial University, Japan, discovered what other Sensory Scientists call the fifth sense. Name and discuss this “fifth sense”. [5 Marks]
- [25 Total Marks]**

### QUESTION TWO

2. Discuss the advantages and disadvantages of the following: [25 Marks]
    - 2.1 Laboratory testing:
    - 2.2 Central Location Tests
    - 2.3 Home Use Tests
- [25 Total Marks]**

### QUESTION THREE

1. State whether the following is true/false regarding the sensory tests by circling the correct answer: [5 Marks]
    - i. In a Triangle Test the judge chooses the sample that is most different – True/False:
    - ii. In a Duo-trio Test the judge chooses the sample that matches the reference – True/False:
    - iii. In a Paired Comparison Test the judge determines the odd sample? – True/False:
    - iv. The probability of guessing a correct answer in a Two-out-of-Five Test is 2 in 5 – True/False:
    - v. In a Same/Different or Simple Difference Test evaluators are asked to identify whether they think the two samples presented are the same or different - True/False:
  2. A cheese processing factory has decided to change some ingredient in the processing of powdered cheese in order to reduce production costs. As a Sensory Analyst employed by the cheese processing factory you are required to conduct a sensory study to determine if the new powdered cheese is different from the existing product currently being produced by the cheese factory. Discuss the plan you would undertake to conduct the study? [20 Marks]
- [25 Total Marks]**

### QUESTION FOUR

1. List the five main sensory perceptions and provide at least one example for each. [5 Marks]
  2. Besides the five sensory perceptions, describe five other factors that influence food choices? [5 Marks]
  3. In a Duo-trio test when do you reject the assumption of “no difference”? [3 Marks]
  4. What is the chance of guessing a correct result in a Duo-trio test? [2 Marks]
  5. Define the term “sensory threshold” and discuss the three types of sensory threshold (Recognition, absolute and difference threshold). [8 Marks]
  6. In a Two-out-of-Five Test, what is the probability of guessing a correct answer? [2 Marks]
- [25 Total Marks]**

**QUESTION FIVE**

1. You are a sensory analyst at the Eswatini Beverages. The Factory Manager is brewing a test beer "B" using a new lot of malt and you are required to determine if it can be distinguished from control beer "A" taken from current production. You decide to accept a 5% risk of error. 12 trained assessors are available for the test. You prepare 18 glasses of "A" and 18 glasses of "B" to make 12 sets that are distributed at random among the panellists, using two each of the combinations ABB, BAA, AAB, BBA, ABA, and BAB. 8 subjects correctly identify the odd sample. From the Critical Number of Correct Responses table the tabled value is 8 (equal to the number of correct responses).
  - 1.1 What is the name of this test? [2 Marks]
  - 1.2 What is your interpretation of the results? [3 Marks]
  - 1.3 What would you advise the Factory Manager to do following your conclusion of the results? [5 Marks]
2. One good sample presented in a group of poor samples during a sensory test will tend to be rated lower than if presented on its own. This is an example of the contrast effect in the order of presentation of samples during a sensory test? **True/False?** [2 Marks]
3. Define the following terms: [4 Marks]
  - 1.1  $\beta$ -risk
  - 1.2  $\alpha$ -risk
4. Physiological factors can influence a judge's response when evaluating food products. Explain the concept of enhancement/facilitation to stimuli presented simultaneously as a mixture by enhancement, synergy or suppression. [9 Marks]

**[25 Total Marks]**