



2ND SEM. 2007/2008

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME : BACHELOR OF SCIENCE IN
FOOD SCIENCE, NUTRITION AND
TECHNOLOGY YEAR IV**

COURSE CODE : FSNT 408

**TITLE OF PAPER : FOOD PACKAGING &
TRANSPORTATION**

TIME ALLOWED : TWO (2) HOURS

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

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED BY THE CHIEF INVIGILATOR**

Question 1

- a) Write notes on the following product characteristics on logistics costs:
- i. Volume-to-weight ratio [5 marks]
 - ii. Value-to-weight ratio [5 marks]
- b) Explain temperature regulation within the cargo. [10 marks]
- c) Write notes on the following elements of container ships:
- i. Terminals and equipment [5 marks]
 - ii. Refrigeration equipment and ducted systems [5 marks]
 - iii. Controlled-atmosphere containers [5 marks]
 - iv. Humidity control [5 marks]
- [Total Marks = 40]**

Question 2

- a) Food Labelling Regulations specify the information that must be carried on packaging. List five elements of the regulations. [5 marks]
- b) Describe the positive and negative attributes of using glass in food packaging. [10 marks]
- c) Write notes on the following types of metallic food cans, citing typical examples of foods associated with the respective packages:
- i. Two-piece can [5 marks]
 - ii. Three-piece can [5 marks]
- d) Describe the advantages and disadvantages of using cork as bottle stoppers. [5 marks]
- [Total Marks = 30]**

Question 3**Table1. Nominal Quantity and Total Negative Errors (TNE)**

Tolerable negative errors: Nominal Quantity (Qn) g or ml	TNE as % of Qn	g or ml
5-50	9	
50-100	-	4.5
100-200	4.5	-
200-300	-	9
300-500	3	-
500-1000	-	15
1000-10000	1.5	0
10000-15000	-	150
above 15000	1	-

a) A can/package of product is labelled with a quantity declaration of 89 g (this is its nominal quantity Qn). Using the data in Table 1, calculate the weight of:

i. Non-standard packages (cans). [5 marks]

ii. Inadequate packages (cans). [5 marks]

b) Write notes on the 'Three Rules for Packers'. [10 marks]

c) Explain the significance of the 'e-mark' that may be printed on some found packages. [5 marks]

d) Define the following terms

i. Primary package [1 mark]

ii. Secondary package [2 marks]

iii. Transit package [2 marks]

[Total Marks = 30]

Question 4

a) Describe the type of packages that may be used for the following products:

i. Breakfast cereals. [5 marks]

iii. Microwave-repeatable ready meals [5 marks]

b) Describe the characteristics of the following plastics:

i. Polyethylene (PE) [5 marks]

ii. High-density polyethylene (HDPE) [5 marks]

iii. Polyethylene terephthalate (PET) [10 marks]

[Total Marks = 30]

END OF QUESTION PAPER