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1ST SEM. 2009/2010

UNIVERSITY



OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME : BACHELOR OF SCIENCE IN FOOD
SCIENCE, NUTRITION & TECHNOLOGY
YEAR III**

COURSE CODE : FSNT 302

TITLE OF PAPER : FOOD MACHINERY AND PLANT DESIGN

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTIONS : ANSWER QUESTION ONE (1)
AND ANY OTHER THREE (3) QUESTIONS**

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GRANTED BY THE CHIEF INVIGILATOR**

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QUESTION ONE [COMPULSORY]

- a. Give the reasons why stainless steel is preferred as a construction material for most food processing equipment. (8 Marks)
- b. What precautions need to be taken to ensure that hot air for the drying of milk powder is not contaminated? (8 Marks)
- c. Give the basic rules to be followed in plant layout to ensure proper flow of work from raw material reception to dispatch of finished product (8 Marks)
- d. Describe the difference between a colloidal mill and a roller mill (8 Marks)
- e. Give two types of mixers found in the food industry and the type of foods that they are suited for. (8 Marks)

[TOTAL: 40 MARKS]

QUESTION TWO

You have been asked to lead a team of experts to conduct a feasibility study on the establishment of a cassava processing plant near Nhlengano and advise the government. Assemble the team of experts that you will need and indicate the contribution of each to the overall accomplishment of the task.

[TOTAL: 20 MARKS]

QUESTION THREE

- a. Discuss the factors you would take into account in constructing a building to house a poultry processing factory in order to minimise production cost and product contamination. (12 Marks)
- b. In which ways can the grounds around the factory and activities in adjacent plots affect your production operations? (8 Marks)

[TOTAL: 20 MARKS]

QUESTION FOUR

- a. Discuss the importance of a good plant layout in ensuring company profitability. (10 Marks)
- b. Give five (5) factors that should be considered in designing a food plant layout (10 Marks)

[TOTAL: 20 MARKS]

QUESTION FIVE

- a. Discuss the importance of the choice of construction materials for processing equipment in a fruit processing factory. (10 Marks)
- b. Why is it advisable to have the supplier of food processing machinery install and commission the equipment? (10 Marks)

[TOTAL: 20 MARKS]