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2ND SEM. 2016/17

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**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

**PROGRAMMES : BACHELOR OF SCIENCE IN FOOD SCIENCE,
NUTRITION AND TECHNOLOGY, YEAR III & II.**

**COURSE CODE : FSNT 306
FNS 208**

TITLE OF PAPER : FOOD PROCESSING I

TIME ALLOWED : TWO (2) HOURS

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

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

QUESTION 1 (COMPULSORY)

- (a) Discuss the aims and goals of the Food Industry. (8 Marks)
- (b) Discuss **four (4)** of the challenges that prevent small scale commercial processors in Swaziland from participating and being fully integrated into global food trade. (16 Marks)
- (c) Foods, processed and unprocessed will undergo 1. physical, 2. biochemical, 3. physiological or 4. microbiological changes that will result in the lowering of quality or in the loss or compromising of safety. Identify and describe **two (2)** types of changes that commonly occur per category. Explain the types of changes that occur and the responsible agents and/or processes. Give appropriate examples. (16 Marks)

[TOTAL MARKS = 40]

QUESTION 2

- (a) In the preparation of raw food materials for processing by Heat transfer (Heating or Freezing), conditioning, pre-heating and/or cooling are essential steps in the production of safe and high quality food products. Explain the reasons behind these practices. (10 Marks)
- (b) Moisture removal and Water Activity (A_w) in foods is achieved by using different techniques. Identify and describe **four (4)** of these techniques and explain how each is done to achieve the desired state in the food. (20 Marks)

[TOTAL MARKS = 30]

QUESTION 3

- (a) Food Processing is an ancient skill and practice. However, since it was organized into a formal industry, it has continued to grow, develop and expand in sophistication, diversity of processors, range of products, supply chains and marketing outlets. Discuss only **four (4)** factors that have contributed to the growth and development and, that have led to practices in the modern-day food processing/manufacturing industry. **(16 Marks)**
- (b) Explain the 'Hurdle concept', its value or importance in modern day food processing. What brought it about? Give an example(s) of a food product or a group of food products that are prepared in this way. **(14 Marks)**

[TOTAL MARKS = 30]

QUESTION 4

Explain the key steps and the main points to consider in ensuring high quality and safe processing of the following foods. Give **two (2)** examples of processed products for each.

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|------|----------------------------|------------------|
| i) | Pork (Fresh and Processed) | (6 Marks) |
| ii) | Fish or any sea food | (6 Marks) |
| iii) | Chicken or poultry | (6 marks) |
| iv) | Vegetables | (6 Marks) |
| v) | Eggs | (6 Marks) |

[TOTAL MARKS = 30]