



1ST SEM. 2007/2008

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

**PROGRAMME : BACHELOR OF SCIENCE IN
HOME ECONOMICS EDUCATION,
HOME ECONOMICS AND
FOOD SCIENCE, NUTRITION AND
TECHNOLOGY YEAR II**

COURSE CODE : FSNT 201

TITLE OF PAPER : FOOD SCIENCE

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) Draw the structure of the following monosaccharide and disaccharide sugars and explain their occurrence in food.
- i. Glucose
 - ii. Galactose
 - iii. Maltose
 - iv. Lactose
 - v. Cellobiose

[15 marks]

- b) Discuss the composition of starch, list **five** properties of starch and **three** applications of starch in the manufacture of food by giving an example in each application.

[15 marks]

- c) Explain the process of starch gelatinization and retrogradation.

[10 marks]

[Total = 40 marks]

QUESTION 2

- a) Discuss **four** applications of protein functionality in food by giving an example in each case.

[8 marks]

- b) Discuss **five** properties of pectin.

[10 marks]

- c) Explain the process of hydrolytic and oxidative rancidity in foods containing fats and also explain what preventative measures can be taken.

[8 marks]

- d) Name **two** naturally occurring organic acids in foods and explain their role.

[4 marks]

[Total = 30 marks]

QUESTION 3

- a) Discuss **six** uses of enzymes in the food industry.
[12 marks]
- b) Discuss **five** changes that take place in the ripening of fruits and vegetables.
[10 marks]
- c) Discuss **four** changes that take place during meat cooking.
[4 marks]
- d) Discuss non enzymatic browning reaction in food.
[4 marks]

[Total = 30 marks]

QUESTION 4

- a) Discuss **three** quality factors of food that can be evaluated by sensory evaluation methods.
[6 marks]
- b) Discuss **five** food hygiene practices.
[10 marks]
- c) Discuss the **five** major ingredients in bread making and their function.
[10 marks]
- d) Discuss the maillard browning reaction in food.
[4 marks]

[Total = 30 marks]