

**1<sup>ST</sup> SEM. 2009/2010**



**PAGE 1 OF 3**

**UNIVERSITY OF SWAZILAND**

**FINAL EXAMINATION PAPER**

**PROGRAMME : BACHELOR OF SCIENCE IN  
CONSUMER SCIENCES EDUCATION,  
CONSUMER SCIENCES 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**

PAGE 2 OF 3

**QUESTION 1 [COMPULSORY]**

- a) Draw the structure of the following monosaccharide sugars and explain their occurrence in food.

- i. Glucose
- ii. Galactose

[8 marks]

- b) Maltose and sucrose are disaccharides, draw their structure and state the bond for each. Also explain their occurrence in food.

[10marks]

- c) Discuss the composition of starch and state how the structure of starch is different from that of glycogen.

[10 marks]

- d) Explain **FOUR** applications of starch in the manufacture of food, give an example in each application.

[12 marks]

[Total = 40 marks]

**QUESTION 2**

- a) Explain the process of starch gelatinization.

[10 marks]

- b) Discuss **four** properties of fat and oils

[8 marks]

- c) Discuss the **three** stages of the general mechanism of oxidation reaction

[12 marks]

**PAGE 3 OF 3****QUESTION 3**

- a) Discuss **five** uses of enzymes in the food industry. [10 marks]
- b) Discuss **five** changes that take place in the ripening of fruits and vegetables. [10 marks]
- a) Explain the process of hydrolytic and oxidative rancidity in foods containing fats and also explain what preventative measures can be taken. [10 marks]

**[Total = 30 marks]****QUESTION 4**

- a) Discuss **five** food hygiene practices. [10 marks]
- b) Name **two** naturally occurring organic acids in foods and explain their role. [4 marks]
- c) Discuss the **five** major ingredients in bread-making and their function. [10 marks]
- d) Discuss the maillard browning reaction in food. [6 marks]

**[Total = 30 marks]**