1ST SEM. 2017/2018

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME	:	**BACHELOR OF SCIENCE IN CONSUMER SCIENCE EDUCATION, CONSUMER SCIENCE AND FOOD SCIENCE, NUTRITION AND TECHNOLOGY YEAR II**
COURSE CODE	:	**FNS205**
TITLE OF PAPER	:	**FOOD SCIENCE**
TIME ALLOWED	:	**TWO (2) HOURS**
INSTRUCTIONS	:	**ANSWER QUESTION ONE (1) AND ANY OTHER (2) QUESTIONS**

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QUESTION 1 [COMPULSORY]

a) Discuss the composition of starch, list **five (5)** properties of starch and **three (3)** applications of starch in the manufacture of food by giving an example in each application.

(15 Marks)

b) Explain the process of starch gelatinization and retrogradation.

(10 Marks)

c) Draw the structure of cellulose.

(10 Marks)

d) Differentiate between homopolysaccharide and heteropolysaccharide.

(5 Marks)

[TOTAL MARKS = 40]

QUESTION 2

a) Discuss the function of proteins in the following applications and give an example of a food product in each application.

i. Emulsification
ii. Forming
iii. Increasing viscosity

(18 Marks)

b) A group of women in a community project made apricot jam, only to find that their product was runny. Explain what could have gone wrong with the following ingredients:

i. Sugar
ii. Pectin
iii. Citric acid

(12 Marks)

[TOTAL MARKS = 30]

QUESTION 3

a) Discuss **six (6)** uses of enzymes in the food industry.

(12 Marks)

b) Discuss **five (5)** changes that take place in the ripening of fruits and vegetables.

(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)

[TOTAL MARKS = 30]

QUESTION 4

a) Discus **five (5)** food hygiene practices. **(10 Marks)**

d) Name **two (2)** naturally occurring organic acids in foods and explain their role.

(5 Marks)

b) Discuss the **five (5)** major ingredients in bread making and their function.

(10 Marks)

c) Discuss the maillard browning reaction in food.

(5 Marks)

[TOTAL MARKS = 30]