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1ST SEM. 2020/21

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UNIVERSITY OF ESWATINI
DEPARTMENT OF FOOD AND NUTRITION SCIENCES
SPECIAL ASSESSMENT PAPER

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

COURSE CODE : FNS205

TITLE OF PAPER : FOOD SCIENCE

TIME ALLOWED : TWO (2) HOURS

INSTRUCTIONS : ANSWER QUESTION 1 AND ANY OTHER 2

**DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED**

QUESTION 1 (Compulsory)

- a. Define the following:
 - i. Caramelization
 - ii. Millard browning
 - iii. Gelatinization
 - iv. Heteropolysaccharides
 - v. Retrogradation

5 x2= 10 marks

- b. Pectin is extracted from plants because of its commercial importance in the food processing industry as a gelling agent. Discuss the important factors to be considered for gel formation. **10marks**

- c. List five (5) properties of starch **5marks**

- d. Give a five uses of Xanthan gum in the food industry **5marks**

- e. Illustrate the following disaccharides units using the Haworth projections or cyclic structures.
 - i. Maltose
 - ii. Lactose

2x5marks

[TOTAL MARKS = 40]

SECTION B (CHOOSE ANY TWO)

QUESTION 2

- a. Explain the different methods for making pregelatinized starch. **10marks**
- b. Explain five uses of food gums in the food industry. **10marks**
- c. Illustrate amylopectin with an aid of a diagram. **10marks**

[TOTAL MARKS = 30]

QUESTION 3

- a. Discuss two (2) applications of Protein Functionality in Food **5 x2=10marks**
- b. Discuss five (5) uses of enzymes in the food industry **5 x3=15marks**
- c. List any five (5) functions that food scientists play in the food industry **5 x1=5marks**

[TOTAL MARKS = 30]

QUESTION 4

- | | |
|------------------------------------------------------------------|--------------|
| a. Discuss the two types of rancidity. | 5 x2=10marks |
| b. Explain the science used in cooking food using the microwave. | 10marks |
| c. Explain five uses of milk proteins in baking industry. | 10marks |

[TOTAL MARKS = 30]