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1ST SEM. 2016/17

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UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME	:	BACHELOR OF SCIENCE IN FOOD SCIENCE, NUTRITION AND TECHNOLOGY YEAR IV
COURSE CODE	:	FSNT 403
TITLE OF PAPER	:	FOOD INGREDIENT TECHNOLOGY IN PRODUCT DEVELOPMENT
TIME ALLOWED	:	TWO (2) HOURS
INSTRUCTIONS	:	ANSWER QUESTION ONE (1) AND ANY OTHER TWO (2) QUESTIONS

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QUESTION 1 (COMPULSORY)

- (a) Define the following terms:-
 i. Genotoxin (3 Marks)
 ii. Procarcinogen (3 Marks)
- (b) What are the **two (2)** consumer perceptions on food additives? (4 Marks)
- (c) Explain how the following values are obtained:-
 i. Lethal dosage (LD50) (3 Marks)
 ii. No observable effects level (NOEL) (6 Marks)
 iii. Acceptable daily intake (ADI) (6 Marks)
 iv. Maximum residue level (MRL) (4 Marks)
- (d) How is the mutagenicity and carcinogenicity of food compounds tested? (6 Marks)
- (e) In which foods stuffs is carry-over of a food additive from a raw material or ingredient unacceptable? (5 Marks)

[TOTAL MARKS = 40]

QUESTION 2

- (a) Explain how sugars and salts can act as food preservatives. (4 Marks)
- (b) Explain the mode of action and application of the following food preservatives?
 i. Pimaricin (4 Marks)
 ii. Potassium nitrite (4 Marks)
- (c) Explain the following food additives and give an example of a compound for each and its application :-
 i. Antioxidant (6 Marks)
 ii. Emulsifier (6 Marks)
- (d) Differentiate between fat mimetics and fat substitutes giving an example in each case. (6 Marks)

[TOTAL MARKS = 30]

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QUESTION 3

- (a) Discuss the properties of the following starch based thickeners/stabilizers and give an application example in each case:-
- i. Pregelatinized starch (5 Marks)
 - ii. Cross-linked starch (5 Marks)
 - iii. Waxy maize starch (5 Marks)
- (b) Explain the source and function of the following food additives:-
- i. Pectin (3 Marks)
 - ii. Polydextrose (3 Marks)
 - iii. Simplesse (3 Marks)
 - iv. Cochineal (3 Marks)
 - v. Steviol glycosides (3 Marks)

[TOTAL MARKS = 30]

QUESTION 4

- (a) Explain the properties of the different types of carrageenan and their gelling properties. (15 Marks)
- (b) Briefly discuss the following sweeteners :-
- i. Corn syrup (5 Marks)
 - ii. High fructose corn syrup (5 Marks)
 - iii. Sorbitol (5 Marks)

[TOTAL MARKS = 30]
