



2ND SEM. 2010

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**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER**

**PROGRAMMEE : BACHELOR OF SCIENCE IN FOOD
SCIENCE, NUTRITION AND
TECHNOLOGY YEAR III**

COURSE CODE : FSNT 305

**TITLE OF PAPER : FUNCTIONAL FOOD AND DIET
SUPPLEMENT**

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTIONS : ANSWER QUESTION ONE (1)
AND ANY OTHER TWO (2) QUESTIONS**

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BY THE CHIEF INVIGILATOR**

QUESTION 1

- a. Discuss **three** physiological effects of oat foods β -glucan in human.
[12 marks]
- b. Discuss how the following functional foods prevents diseases:-
i. Milk with added vitamin D
ii. Orange juice fortified with calcium
iii. Omega-3 fatty acid enriched milk
iv. All bran cereals
[20 marks]
- c. Discuss **four** proposed mechanisms for serum cholesterol reduction.
[8 marks]
- [Total = 40 marks]

QUESTION 2

- a. Explain the health benefits of the following products or active components:-
i. Flaxseeds oil
ii. Lignans
iii. Proteins
iv. Phytochemicals (phytic acid and phenolic acid)
v. Gums-soluble polysccharides
[10 marks]
- b. Discuss **three** modes of action of oats β -glucan.
[12 marks]
- c. Explain the effect of the following components of citrus fruit on health:-
i. Flavonoids
ii. Limonoids
iii. Pectin and dietary fiber
iv. Carotenoids and vitamin A
[8 marks]
- [Total = 30 marks]

QUESTION 3

- a. Discuss **four** health benefits of wheat, bran fiber in terms of promotion of regularity.

[8 marks]

- b. Discuss **five** physiological effects (health benefits) of grapes and grape food products.

[10 marks]

- c. Discuss the health benefits of alliums (eg. Onion) in terms of preventing the following diseases:-

vi. Cancer (anticarcinogenic effect) [4 marks]

vii. Cardiovascular disease [8 marks]

[12 marks]

[Total = 30 marks]

QUESTION 4

- a. Discuss **three** most important common gastrointestinal disorders that can be managed by wheat bran fiber functional foods.

[12 marks]

- b. Discuss the importance of mineral supplements during the following conditions:-

i. Pregnancy and lactation [4 marks]

ii. Adolescence [4 marks]

[8 marks]

- c. Explain **three** health claims that are related to components of foods or foods themselves:-

i. Generic health claim [3 marks]

ii. Commodity/ingredient health claims [3 marks]

iii. Product specific claims [4 marks]

[10 marks]

[Total = 30 marks]