

CHUKA



UNIVERSITY

RESIT/SPECIAL EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
FOST 242: NUTRACEUTICALS AND FUNCTIONAL FOODS**

STREAMS

TIME: 2 HOURS

DAY/DATE: MONDAY 03/05/2021

8.30 A.M – 10.30 A.M

INSTRUCTIONS:

Answer all questions in section A and any two questions in section B

All calculations must be shown on the booklet.

Section A: Answer all questions (30 Marks)

1. Explain the meaning of functional foods and nutraceuticals giving examples (4 Marks)
2. Discuss the mechanisms of action of polyphenolic compounds as potential nutraceuticals
(6 Marks)
3. State the conditions that any substance must fulfil for it to be branded as either a
nutraceutical or a functional food (6 Marks)
4. Discuss symbiotics and their role in the manufacture of functional foods in the food
industry (6 Marks)
5. Discuss nutrigenomics in relation to bioactive substances in food and the development or
control of non-transmissible chronic diseases (8 Marks)

Section B: Answer any TWO questions (40 Marks)

6. (a) As the head of the product development team in your company, discuss the process of making a functional food with at least two bioactive substances, clearly showing their role in your new product (10 Marks)
- (b) Discuss the methods of encapsulating functional ingredients in the manufacture of functional foods (10 Marks)
7. (a) You are working in a cheese processing plant and are required to develop a new functional product. Discuss the substances you would suggest for inclusion into the product outlining their composition as well as their functional role in the new product (12 Marks)
- (b) Discuss the effect of some specific processing techniques on bioactive compounds and their functional properties (10 Marks)
8. (a) Discuss the importance of Polyunsaturated Fatty Acids (PUFAs) as potential substances in the formulation of functional foods and their disadvantages in such formulations (8 Marks)
- (b) Discuss bioavailability, bio accessibility, and bioactivity of food components with reference to specific bioactive substances, highlighting the factors affecting them in the context of the human body (6 Marks)
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