

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF SCIENCE IN FOOD SCIENCE

FOST 221: PRINCIPLES OF HUMAN NUTRITION

STREAMS: BSC (FOST)

TIME: 2 HOURS

DAY/DATE: TUESDAY 05/12/2017

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

SECTION ONE: ANSWER ALL QUESTIONS

1. (a) (i) Joy a food science student at Chuka university was given an antibiotic prescription on visiting Chuka hospital. On taking the medication she started having bouts of diarrhea. Explain this condition and propose a remedial action. [5 marks]
- (ii) For a long period of time fruits and vegetables have been the food of choice in the detoxifying process. However carbohydrates have been shown to also take part in detoxifying processes. Discuss how carbohydrates achieve this function. [4 marks]
2. (a) Maggie has a BMI of 45 kg/m^2 given that she is 8.4 ft tall, calculate her weight, describe her nutritional status and advise her on her diet requirements.[5 marks]
- (b) After taking a meal, Nkatha and Mukami had different postprandialplasma glucose levels. Discuss the possible reasons for the disparity. [4 marks]
3. (a) In western countries, most U5s are either obese or overweight, describe the two terms and explain the reason and remedy for this observation. [4 marks]
- (b) Describe factors that determine the nutritional requirement of an individual. [4 marks]

SECTION TWO: ANSWER ANY TWO QUESTIONS

5. (a) Describe magnesium with emphasis on human requirement (amount), functions, sources, causes of pyridoxine and deficiency symptoms. [10marks]
- (b) Discuss pyridoxine with reference to its stability and functions. [5 marks]
- (c) Discuss the dangers and complications of PEM. [5 marks]
6. (a) Kirimi's daily diet contains substantial amount of n-6 and n-3 PUFA and Eicosanoids. Explain the possible physiological effect of such a diet.[10 marks]
- (b) Describe the digestion, absorption, and transportation of proteins. [10 marks]
7. (a) Describing their structural moieties discuss five complex lipids. [10 marks]
- (b) During supper Christine consumed 225 g of French fries and a 150 g of chicken. If the fat content of the food was 10 and 20 mg/g for the fried and the chicken respectively;
- (i) Calculate the amount of energy in kj the food delivers [5 marks]
- (ii) If the total saturated FA content of the food was 5 g advise Christine accordingly, in terms of lipid health. [5 marks]
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