



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2009/2010

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF MASTER OF SCIENCE (FOODS, NUTRITION AND DIETETICS)

HFN 500: HUMAN NUTRITION

DATE: MONDAY 23RD NOVEMBER 2009 TIME: 9.00 A.M. – 12.00 NOON

INSTRUCTIONS: Answer 4 questions (15 points each)

- 1.a) i) Briefly explain the structural differences of the essential fatty acids. [3marks]
- ii) What are their role in the body that makes them essential? [4 marks]
- iii) State the main food sources of these nutrients. [3 marks]
- b) Which is most common type of phospholipids? State main functions of this lipid. [5 marks]
- 2.a) i) Glycogen and starch are classified as available carbohydrates. Explain based on their **structures** why they are **available**. [3 marks]
- ii) How do they differ from cellulose? [2 marks]
- b) Briefly explain how the glycemic effect of foods can be used in planning a diet for a diabetic patient. [10 marks]
- 3.a) i) Define negative and positive nitrogen balance giving examples [5 marks]
- ii) Use the above conditions to explain the state of protein – energy malnutrition (PEM) in children. [5 marks]
- b) Briefly describe how you would assess the nutritional status pf a group of school-children in a given community. [5 marks]

- 4.a) i) State the nutrients involved in synthesis and information of healthy red blood cells. [5 marks]
- ii) Explain the three types of nutritional anaemia caused by a primary or secondary.
- b) i) What is an antioxidant? State the nutrients that play a role as antioxidants in the body. (5 marks)
- ii) Briefly describe the role of one of the nutrients that play a role as an antioxidant. [5 marks]
5. i) State the main functions of calcium in the body. [5 marks]
- ii) Which are the hormones involved in calcium balance. [5 marks]
- iii) Name significant food sources of calcium. What are consequences of inadequate intake? (5 marks)
6. Zinc has been identified as one of the micronutrients of public health concern in Kenya.
- i) State the major roles of zinc in the body. [10 marks]
- ii) Which Zinc-binding protein is essential for regulation of zinc absorption and which one is responsible for zinc transport? [5 marks]