



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2011/2012

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (FOODS, NUTRITION AND DIETETICS)

HFN 212: NUTRITION BIOCHEMISTRY

DATE: Monday, 2nd April, 2012

TIME: 8.00 a.m. 10.00 a.m.

INSTRUCTIONS:

Answer **ALL** questions.

1. a) Explain the 2 phases of glycolysis. (4 marks)
 b) Write an equation summarizing glycolysis and gluconeogenesis pathways. (8 marks)
2. a) Discuss **two** factors that determine the protein quality of a food. (6 marks)
 b) Define and list the essential amino acids. Which amino acids are regarded as semi-indispensable? Explain. (8 marks)
3. a) Explain the Glucose tolerance test and Glycemic index of a food. (4 marks)
 b) Explain the relationship between urea excretion and high protein intake (4 marks)
4. a) Define *trans* fatty acids and explain why they are not desirable in foods. (4 marks)
 b) Describe the primary and tertiary structure of proteins (8 marks)
5. a) List **four** functions of lipids in the body. (4 marks)
 b) Describe five (4) classes of enzymes and give an example of each. (8 marks)
6. a) Explain the significance of Glucose Alanine Cycle (6 marks)
 b) Explain *oxidative stress* and the role of tocopherols (vitamin E) in defenses against it. (6 marks)