CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE AND TECHNOLOGY

FOST 324: FOOD ANALYSIS

STREAMS: BSC (FOST) **TIME: 2 HOURS**

DAY/DATE: MONDAY 06/04/2020 **11.30 A.M. – 1.30 P.M.**

INSTRUCTIONS: Answer ALL questions in section A and any TWO in section B

SECTION A

1. Describe 3 common sources of error in any analytical technique [6 marks]
2. (a) Explain the term sampling plan [3 marks]
   (b) List factors which influence choice of a particular sampling plan. [2 marks]
3. (a) Given the following gravimetric results: weight of dried pan = 1.0376g, weight of pan and solid sample = 4.627g and weight of the pan and dried sample = 1.7321g. Determine the moisture content and the percent solids. [5 marks]
   (b) Enumerate four advantages and four disadvantages of Kjeidahl method of protein determination
4. To determine the fat content of soy beans by the soxhlet method, the soy beans were first oven dried. The moisture content of the beans was 18%. The fat in the dried soy beans was determined to be 13.5%; calculate the fat content of the original soy beans before drying. [4 marks]
5. State and explain the importance of each step in sample preparation for determination of total lipid concentration of freshly harvested butternut using soxhlet method. [6 marks]

6. (a) Discuss three sampling methods used in picking samples for analysis of food preparation. [9 marks]

(b) A legume was found to contain 13% moisture. A 5.2146 g sample was placed into a crucible 28.5053 g base.

HCL used for sample no. 1 = 22.0 ml

HCL used for sample no. 2 = 22.5 ml

HCL used for reagent blank = 0.4 ml

Calculate the % crude protein of the macadamia nut given the N conversion factor of 6.25 [6 marks]

(c) By use of examples differentiate between voluntary and mandatory standards concerning food products. [4 marks]

8. (a) State the advantages and disadvantages of Biuret method in determination of food proteins. [8 marks]

(b) By use of examples describe the protein of food of analyzed interest to a food analyst. [2 marks]
