CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF COMMERCE

BCOM 436: FINANCIAL ECONOMETRICS

STREAMS: BCOM   **TIME: 2 HOURS**

DAY/DATE: MONDAY 29/03/2021   **11.30 A.M. – 1.30 P.M.**

INSTRUCTIONS:
 • **Answer QUESTION ONE and any other TWO.**

QUESTION ONE

(a)   Explain the importance of financial econometrics to a financial analyst.   (6 marks)

(b)   Discuss four characteristics of a good estimator.   (8 marks)

(c)   Below are given figures in (Ksh M) of performance of a firm listed in the NSE

Year	2014	2015	2016	2017	2018	2019	2020
Profit (Ksh 'M'	77	88	94	85	91	98	90

Required:

(i)   Fit a straight line trend by use of least square method and tabulate trend values.
                                                                                        (8 marks)
(ii)   Use your equation to predict the firm's performance in 2021.   (2 marks)

(d)   Discuss three types of variations in time series analysis and briefly explain how may
             affect performance of a given company.   (6
marks)

QUESTION TWO

(a)   Explain the advantages of using time series type of data in business forecasting.

(5 marks)

(b)   In an attempt to control the quality of output for a manufactured part, a sample of part is chosen randomly and examined in order to estimate the population proportions of parts that are defective. The manufacturing process operated continuously unless it must be stopped for inspection or adjustment. In the last sample of 90 parts, 15 defectives are found.

Required:

Determine the following estimates of II the population proportion defective on:

(i)   Point estimate   (2 marks)
(ii)   98% interval estimate   (3 marks)

(c)   Discuss assumptions of ordinary least squares.   (10 marks)

QUESTION THREE

(a)   Compare and contrast regression analysis and correlation analysis.   (8 marks)

(b)   Briefly explain the importance of correlation analysis in portfolio construction. (3 marks)

(c)   The following data relate to the performance of eight companies listed in NSE. It's assumed that their performance depends on Board's years of experience and number of years they have been listed.

Company	1	2	3	4	5	6	7	8
Board's experience	16	12	18	4	3	10	5	12
Years listed	87	88	89	68	78	80	75	83

(i)   Fit a linear regression equation using method of least square.   (8 marks)
(ii)   Explain its meaning.   (1 mark)

QUESTION FOUR

(a)   Explain the following terms as used in multivariate analysts
(i)   Autocorrelation   (2 marks)
(ii)   Heteroscedasticity   (2 marks)
(iii)   Specification error.   (2 marks)
(iv)   Multicollireality   (2 marks)

(b)   Briefly explain how each of the above can be statistically tested.   (4 marks)

(c)   " Time variation in volatility is a common feature in macroeconomic data." Discuss this statement and suggest solutions to challenges a financial analyst is likely to experience if assumptions of OLS are violated.   (8 marks)