CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE AWARD OF
DEGREE OF BACHELOR OF COMMERCE**

BCOM 436: FINANCIAL ECONOMETRICS

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY   6 /07/ 2021   **11.30 AM – 1.30 PM**

INSTRUCTIONS:
- Answer Question ONE and any other TWO Questions.
- Do not write on the question paper

QUESTION ONE

(a)   Discuss FOUR characteristics of a good estimator.   [8 Marks]

(b)   Explain five advantages of using time series data in business forecasting to a financial
        analyst.   [5 Marks]

(c)   Below are given figures in (ksh million) of a certain from listed in the Nairobi Stock
        Exchange

Year	2015	2016	2017	2018	2019	2020	2021
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 your trend values.
                                                                            [8
Marks]

(ii)   Use your equation to predict the firms performance in 2022.   [3 Marks]

(d)   Explain importance of financial econometrics to a financial analyst.   [6 Marks]

QUESTION TWO

(a)   Explain the following terms as used in multiple linear Regression Analysis:

(i)   Homoscedasticity   [2 Marks]

(ii)   Multicollinearity   [2 Marks]

(iii)   Serial correlation   [2 Marks]

(iv)   Specification error   [2 Marks]

(b)   Briefly explain how each of the above can be treated incase it is found during data analysis.   [4 Marks]

(c)   During data analysis, a researcher may encounter challenges as a result of violation of assumptions of ordinary least squares. Suggest possible solutions in such a situation.

[8 Marks]

QUESTION THREE

(a)   The following data relate to the performance of eight companies listed in NSE. Its assumed that their performance depends on board's years of experience.

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

Required:

(i)   Fit a linear regression equation using method of least squares.   [8 Marks]

(ii)   Interpret your results.   [2 Marks]

(b)   Explain relevance of correlation analysis in efficient portfolio construction.[3 Marks]

(c)   Discuss assumptions of ordinary least squares (OLs)   [7 Marks]

QUESTION FOUR

(a)   Compare and contrast regression analysis to regression analysis.   [8 Marks]

(b)   Discuss types of data variation that may affect reliability of time series data.[8 Marks]

(c)   In an attempt to control of bread, a sample is chosen randomly in order to estimate the population proportion of loaves that are defective. The bakery operated continuously unless it most be stopped for inspection or adjustment. In the last sample of 90 loaves, 15 loaves were found to be defective.

Required:

(a)   Determine the following estimates of π the population proportion defective on:

(i)   Point estimate   [2 Marks]

(ii)   98% internal estimate   [2 Marks]

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