CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF COMMERCE

BCOM 436: FINANCIAL ECONOMETRICS

STREAMS:

TIME: 2 HOURS

DAY/DATE : TUESDAY 28 /09/ 2021 **11.30 AM – 1.30 PM**

INSTRUCTIONS TO CANDIDATES:

- Answer Question One and any other Two Questions.
- DO NOT WRITE ANYTHING on the question paper

QUESTION ONE

(a) Explain five areas in which financial econometrics can be applied by a financial manager in a firm. [5 Marks]

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

(c) Assume that you are given the following information about X and Y assets

State of Economy	Prob	Returns	
		X	Y
A	0.1	-8	14
B	0.2	10	-4
C	0.4	8	6
D	0.2	5	15
E	0.1	-4	20

Required:

(i) Compute Covariance XY accordingly [5 Marks]

(ii) Correlation XY [5 Marks]

(iii) Advise an investor who would want to invest in a portfolio context X,Y [3 Marks]

(d) The information about the expected return and standard deviation help investors to make decisions about investment. Discuss briefly categories of risk preference. [6 Marks]

QUESTION TWO

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

(b) Below are given figures in ksh m of sales for firms in dairy industry.

Year	2015	2016	2017	2018	2019	2020	2021
Profit	77	88	94	85	91	98	90

Required:

i) Fit a straight line trend by the method of least square and tabulate your trend values. [8 Marks]

ii) Using your equation in (i) above to predict the firm's performance in 2022.[2 Marks]

QUESTION THREE

(a) Compare and contrast regression analysis to correlation analysis. [4 Marks]

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

(c) Explain relevance of correlation analysis in an efficient portfolio construction. [2 Marks]

(d) A company gives a job training of its sales men and women which is followed by a test. It is considering whether it should terminate the services of any sale person who does not do well in the test. The following data gives the test scores by nine officers during the last one year.

Test scores	14	19	24	21	26	22	15	20	19
Sales (ksh'000'	31	36	48	37	50	45	33	41	39

Required:

Compute the coefficient of correlation between test scores and sales made by the sales officers.

[6 Marks]

QUESTION FOUR

(a) After investigate it has been found that the demand for automobiles in a city depends mainly if not entirely upon the number of families residing in that city. Below are given figures for the sales of automobiles in five aties for the year 2020.

CITY	NO OF FAMILIES	SALES OF AUTOMOBILES IN '000'
A	70	25.2
B	75	28.6
C	80	30.2
D	60	22.3
E	90	35.4

Required:

i) Fit a linear regression equation by the method of least square. [6 Marks]

ii) Estimate the sales for the year 2021 for city A which is estimated to have 100 families assuming the same relationship holds five. [3 Marks]

(b) Ordinary least squares (OLS) as is commonly known is based on contain assumptions

Required:

(i) Discuss five assumptions of OLs [5 Marks]

(ii) Discuss 3 possible outcomes in the event the above assumptions in (i) above are violated. [3 Marks]

(iii) Suggest possible solutions to (ii) above. [3 Marks]

……..