
CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

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

BCOM 436: FINANCIAL ECONOMETRICS

STREAMS: BCOM

TIME: 2 HOURS

DAY/DATE: FRIDAY 07/12/2018

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS:

- **Answer question ONE and any other TWO**
- **Do not write anything on the question paper**

QUESTION ONE

(a) Explain the importance of financial econometrics to a financial analysts

[8 marks]

- (b) Discuss four characteristics of a good estimator [8 marks]
- (c) Compare and contrast regression analysis and correlation analysis [6 marks]
- (d) The following data relate to the performance of eight companies listed in the NSE. It is assumed that performance of these companies depends on board of management's experience and rating of their bonds

| Company | A | B | C | D | E | F | G | H |
|---------------------|--------|--------|--------|--------|--------|--------|--------|----|
| Board experience | 1 6 | 1 2 | 1 8 | 4 | 3 | 1 0 | 5 | 12 |
| Board rating | 8 7 | 8 8 | 8 9 | 6 8 | 7 8 | 8 0 | 7 5 | 83 |

Required:

Fit a linear regression equation using the method of least square. Explain its meaning [8 marks]

QUESTION TWO

- (a) Discuss 8 assumptions of Ordinary Least Square (OLS) [10 marks]
- (b) Explain the following terms as used in multivariate analysis
- (i) Autocorrelation [2 marks]
 - (ii) Heteroscedasticity [2 marks]
 - (iii) Specification error [2 marks]
 - (iv) Multicollinearity [3 marks]
 - (v) Specification error [3 marks]

QUESTION THREE

- (a) “Time variation in volatility is a common feature of macroeconomic data”. Discuss this statement and suggest solutions to challenges a financial analyst is likely to experience if assumptions of OLS are violated [10 marks]

(b) Below are given figures (in ‘M’ kshs) of performance of certain manufacturing firms listed in NSE.

| Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|-------------|------|------|------|------|------|------|------|
| Profit | 77 | 88 | 94 | 85 | 91 | 98 | 90 |
| (ksh 'M' | | | | | | | |

Required:

Fit a straight line trend by use of least square method and tabulate the trend values [10 marks]

QUESTION FOUR

(a) Discuss three types of variations in time series analysis and explain how they may affect performance of a given company [6 marks]

- (b) Explain advantages of business forecasting using time series data [5 marks]
- (c) Discuss the various methods of parameter estimation [4 marks]
- (d) In an attempt to control the quality of output for a manufactured part, a sample of parts is chosen randomly and examined in order to estimate the population proportion 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. Determine the following estimates of π the population proportion defective on a

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