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*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**2019/2020 ACADEMIC YEAR**

**SECOND YEAR 2ND SEMESTER**  
**MAIN EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL  
ECONOMICS & RESOURCE MANAGEMENT**

**COURSE CODE:** AEC 223  
**COURSE TITLE:** ECONOMETRICS

**DATE:** 08/02/2021. **TIME:** 8-10 AM.

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**INSTRUCTIONS TO CANDIDATES**

Answer all Questions in section A and any other two (2) Questions in section B.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over



KIBU observes ZERO tolerance to examination cheating

(30 MARKS)

**QUESTION ONE**

(a) Define the following terms. (10 Marks)

- (i) Simple regression analysis
- (ii) Linear regression analysis
- (iii) A scatter diagram
- (iv) Exogeneous variable
- (v) Econometrics

(b) Using suitable examples, discuss the methodology of econometric research. (10 Marks)

(c) State five assumptions of the classical regression model (OLS) and give an intuitive explanation of the meaning and need for each of them. (10 Marks)

(20 MARKS)

**QUESTION TWO**

The following table gives the quantities of commodity z brought from the year 2001 – 2010 and the corresponding prices.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Quantity	770	785	790	795	800	805	810	820	840	850
Price	18	16	15	15	12	10	10	7	9	6

Assuming all the assumptions of the Classical linear Regression model are fulfilled. Calculate

- a.  $b_1$  and  $b_2$  (6Marks)
- b. Standard errors of these estimator (5 Marks)
- c. Establish 95% confidence intervals for  $b_1$  and  $b_2$  (6Marks)
- d. On the basis of the confidence intervals above, can one accept the hypothesis that  $b_2 = 0$ ? why? (3 Marks)

(20 MARKS)

**QUESTION THREE**

The success of any econometric analysis ultimately depends on the availability of the appropriate data.

- (a) Describe the different types of economic data. (14 Marks)
- (b) State reasons why data is sometime inaccurate (6Marks)

(20 MARKS)

**QUESTION FOUR**

Distinguish between

- (a) The population and the sample regression function
- (b) stochastic error term and the residual  $\mu_i$
- (c) Biased and unbiased estimator
- (d) Regression and correlation
- (e) Linearity in the variable and in the Parameter

(20 MARKS)

**QUESTION FIVE**

(a) Write short notes on the following problems in regression analysis (15 Marks)

- i) Multicollinearity
- ii) Autocorrelation
- iii) Heteroscedasticity

(b) Briefly explain the purpose of including an error term in a regression equation? **(5 Marks)**