BUGHOLAR

OLABISI ONABANJO UNIVERSITY, AGO-IWOYE
CENTRE FOR SANDWICH PROGRAMMES
FACULTY OF SOCIAL AND MANAGEMENT SCIENCES
RAIN SEMESTER EXAMINATION 2010/2011 SESSION
COURSE CODE/TITLE: ECO 317/INTRODUCTION TO ECONOMETRICS

TIME: 100 MINUTES

INTRODUCTION: ANSWER ALL QUESTIONS

1. The data in the table below is selected from The Planning and Research Unit of a Company trying to relate sales to the amount spent on advertisement

Advertisement Cost (N'000)	Sales (N'm)
92	7
90	6
93	5
85	4
70	3
105	8
80	2
87	4
100	9
85	6

a.(i) Express the sales as a function of advertisement cost

(ii) Deduce values for the parameters of the function through OLS

b. Compute

(i) Standard error and t values for estimated parameters

(ii) The coefficient of determination

c.(i) Interpret your result in (aii)

(ii) Evaluate the reliability of your results in (bi) by using the quantities calculated in (bi)

Hint: Critical Value of t at 5% = 2.01

(40 marks)

2(a) Explain your understanding of the term 'econometrics and state its goals

(b) Given an econometric model of a two-variable as

$Y_i = a + b X_i + e_i$ and its

$$Var\ (\hat{a}) = S^2_{y*} \left(\frac{\sum X^2}{n\sum x^2} \right)$$

Prove that the variance of $\hat{a}$ may also be computed by the expression

$$Var\ (\hat{d}) = S^2_{y*} \left(\frac{1}{n} + \frac{\overline{X}^2}{\sum x^2} \right)$$

(18 marks)

3. Write short notes on any three of the following

(a) Model specification

(b) Unbiased estimator

(c) Unexplained variation

(d) First order test

(e) Sufficient estimator

(12 marks)

07081514

4. Given the data.

C	70	65	90	95	110	115	120	140	155	150
Y_d	80	100	120	140	160	180	200	220	240	260

(i) Fit the regression equation

$C = a + bY_d$ and use your knowledge of economic theory to interpret the signs and magnitude of the parameter estimates.

(ii) Determine the coefficient of determination R^2 and interpret your result.

(iii) Calculate the standard error of a and b.

(iv) Use the regression equation in (i) to find Y when C = 130.

(v) Are the results [illegible]