NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

FACULTY OF MANAGEMENT SCIENCES

DEPARTMENT OF ACCOUNTING, ECONOMICS AND FINANCE

QUALIFICATION: BACHELOR OF ECONOMICS	
QUALIFICATION CODE: 12BECO	**LEVEL:** 7
COURSE CODE: ECM712S	**COURSE NAME:** ECONOMETRICS
SESSION: JAN 2020	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

SUPPLEMENTARY/ SECOND OPPORTUNITY EXAMINATION	
EXAMINER(S)	**MR EDEN TATE SHIPANGA** **MR PINEHAS NANGULA**
MODERATOR:	**DR R. KAMATI**

INSTRUCTIONS
1. Answer ALL the questions. 2. Write clearly and neatly. 3. Number the answers clearly.

PERMISSIBLE MATERIALS

1. PEN,
2. PENCIL
3. CALCULATOR

THIS QUESTION PAPER CONSISTS OF 2 PAGES (Including this front page)

QUESTION 1 [25 marks]

1. Why do we study econometrics as a separate discipline? (9)
2. Explain eight steps on how econometricians proceed in their analysis of an economic problem? (10)
3. Mention three ambiguities that must be address when constructing an econometrics model (6)

Question 2 [25 marks]

1. Describe the various components of the function $Y_i = E(Y \mid X_i) + \mu_i$. (2)
2. Discuss the two types of error that arise in hypothetical conclusions (6)
3. State the two distinct features of the interceptless model. (4)
4. One of the "consequences of error of measurement in the regressand is increased variance of the estimators". Formulate a scenario and provide proof of this statement. (4)
5. Consider a two-variable model where consumption as a regressand and income as a regressor.
   (a) Name the parameter that is used to measure the spread of the values from their expected values? (2)
   (b) Suppose, a researcher is interested in measuring the strength of the relationship between consumption and income, name the parameter one can use to quantify this relationship? (2)
6. Assuming a three-variable model $Y_t = \alpha_1 + \alpha_2 X_2 + \alpha_3 X_3$, where α_2 *and* α_3 are partial regression coefficients. You have been asked in a job interview to briefly describe the meaning of the two parameters in this context. (5)

QUESTION 3 [25 marks]

Given the regression output below answer the questions that follow. Where NFA net foreign asset

Dependent Variable: LNM2 is money supply, both in natural log.

Method: Least Squares

Sample(adjusted): 2006:02 2016:12

Included observations: 155 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.009936	0.003298	3.012688	0.0030
LNNFA	0.211279	0.023192	9.110164	0.0000
R-squared	0.351681	Mean dependent var		0.012806
Adjusted R-squared	0.347444	S.D. dependent var		0.050598
S.E. of regression	0.040874	Akaike info criterion		3.543841
Sum squared resid	0.255611	Schwarz criterion		-.504571
Log likelihood	276.6477	F-statistic		82.99509
Durbin-Watson stat	2.353923	Prob(F-statistic)		0.000000

(a) Write out the regression equation estimated in this study. (4)
(b) Interpret the estimated function in (a). (6)
(c) Identify the regressors and regressand. (4)
(d) What is the value of the coefficient of determination? (3)
(e) How many parameters are in this model? (2)
(f) What type of regression model is this? (3)
(g) What does the abbreviation OLS stand for? (3)

QUESTION 4 [25 marks]

1. Interpret the intercept and slope coefficients of the following regression. $\hat{Y}_i$ = 56.1 -1.7 X_i where Y=% of vote received by the incumbent president and X= unemployment rate (in percentage points) (5)
2. Interpret the intercept and slope coefficients of the following regression. ln $\hat{Y}_i$ = 3.5 + 1.35 ln X_i where Y= GNP (in millions of $) X= Government spending (in mills. of dollars) (5)
3. Interpret the intercept and slope coefficients of the following regression. $\hat{Y}_i$ = -1.8 + 45.8 ln X_i where Y=inflation rate (%) and X= wage rate (in N$) (5)
4. Interpret the intercept and slope coefficients of the following regression. ln $\hat{Y}_i$ = 4.1 + 0.05 T where Y=GDP (in mill. of dollars) and T=time trend (T=1,2,3,... representing years) (5)
5. Interpret the intercept and slope coefficients of the following compound growth rate of ln $\hat{Y}_i$ = 4.1 + 0.05 T where Y=GDP (in mill. of dollars) and T=time trend (T=1,2,3,... representing years) (5)

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