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School of Liberal Education

Master of Arts in Economics
Semester End Examination - Nov 2023

Duration : 180 Minutes
Max Marks : 100

Sem III - ECO6020 - Time Series Econometrics

General Instructions

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) How is the least squares method used to find the best-fitting line in a simple linear regression model? K1 (2)
- 2) How is the coefficient of determination (R-squared) interpreted? K2 (4)
- 3) How do you interpret the p-value associated with a coefficient in a regression model? K2 (6)
- 4) How can you detect multicollinearity using variance inflation factors (VIFs)? K3 (9)
- 5) Describe the concept of multicollinearity and its effects on regression results. K3 (9)
- 6) How does panel data analysis combine cross-sectional and time series data? K5 (10)
- 7) What is the Akaike Information Criterion (AIC)? How is it used in model comparison? K4 (12)
- 8) Explain the assumptions underlying the classical linear regression model. K5 (15)
- 9) Walk through the derivation of the variance of the OLS estimator for the slope coefficient in a simple linear regression model. Start from the assumptions and definitions of the OLS estimator, outline the steps to compute the variance formula, and explain the significance of the variance estimate in terms of the precision and reliability of the coefficient estimate. K5 (15)
- 10) OLS estimators provide estimates for the coefficients of a linear regression model. How can you quantitatively assess the goodness of fit of the model using OLS estimators? What role does the residual sum of squares (RSS) play in evaluating model fit? K6 (18)