UNIRAZAK
UNIVERSITI TUN ABDUL RAZAK

FINAL EXAMINATION
MARCH 2024

COURSE TITLE   INTRODUCTION TO ECONOMETRICS

COURSE CODE   TECO3233

DATE/DAY   19 JUNE 2024 / WEDNESDAY

TIME/DURATION   02:00 PM - 04:00 PM / 02 Hour(s) 00 Minute(s)

INSTRUCTIONS TO CANDIDATES :

1. Please read the instruction under each section carefully.
2. Candidates are reminded not to bring into examination hall/room any form of written materials or electronic gadget except for stationery that is permitted by the Invigilator.
3. Students who are caught breaching the Examination Rules and Regulation will be charged with an academic dishonesty and if found guilty of the offence, the maximum penalty is expulsion from the University.

(This Question Paper consists of 3 Printed Pages including front page)

DO NOT OPEN THE QUESTION PAPER UNTIL YOU ARE TOLD TO DO SO

This question paper consists of TWO (2) questions. Answer ALL questions in the answer booklet provided. **[100 MARKS]**

QUESTION 1 (60 Marks)

Arif, an economist is interested to examine the relationship between GDP growth and inward foreign direct (FDI) investment. For this purpose, he collected the following data across four countries:

Table 1

| Country	GDP Growth (as percentage)	Inward FDI (as percentage of GDP)
Country 1	1.5	2.3
Country 2	2.3	2.5
Country 3	2.5	3.0
Country 4	1.8	2.2

a) Based on data presented in Table 1, construct a table on your answer booklet and use the Ordinary Least Square (OLS) method to compute the estimated intercept and slope coefficient.
(16 marks)

b) Based on the estimated values of the intercept and slope coefficient, interpret these parameters accordingly. (8 marks)

c) Upon constructing the estimated intercept and slope coefficient in part (a), compute the residuals for each observation. (8 marks)

d) The expected value of the regression residuals is necessary zero. Explain why. (8 marks)

e) OLS is deemed as "BLUE" to estimate the Keynesian consumption function. Explain what "BLUE" means. (10 marks)

f) Assuming that the residuals of the estimated regression do not follow a normal distribution, explain what is / are the consequent impact(s) and what Arif can do to alleviate the impact(s).
(10 marks)

QUESTION 2 (40 marks)

a) David is interested to make use of an econometric model to forecast future inflation rate. Hence, he uses time series data for his model, which is estimated using Ordinary Least Square (OLS).

   i. Explain which of the Gauss-Markov assumptions he has most likely violated. (6 marks)

   ii. Explain what are the consequences following violation of the assumption identified in part (i) above. (6 marks)

   iii. Explain how his forecast for the future inflation rate will be affected following the violation of the assumption identified in part (i). (6 marks)

b) Kiki collected a sample of 1000 households to determine how travelling expenditure is affected by monthly income. Upon estimating the relevant regression, he plots the residuals of the regression against the fitted values and observes the following pattern:

Fitted Values vs. Residuals
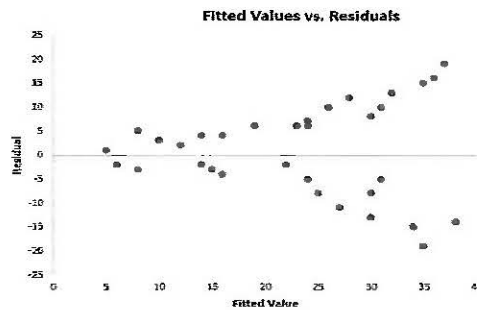
i. Explain which of the Gauss-Markov assumptions that Arif has most likely violated. (7 marks)

ii. Explain THREE (3) causes that can lead to the violation of the assumption as suggested by the answer to question 2(b)(i) above. (15 marks)

*** **END OF QUESTION PAPER** ***