



**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, May 2022**

**Course: Introductory Econometrics**  
**Program: BA (Hons.) Economics**  
**Course Code: ECON 2017**

**Semester IV**  
**Duration : 03 hrs.**  
**Max. Marks: 100**

**Instructions:** Read the question paper carefully

<b>Q. No</b>	<b>Section A</b>	<b>10Qx2M=20Marks</b>	<b>COs</b>
Q1	Fill in the blanks <b>A:</b> Econometrics is the combination of ..... <b>B:</b> Gender is.....variable. <b>C:</b> When the independent variables are correlated, it's called..... <b>D:</b> To compare the two regression model, we use..... <b>E:</b> Formula of VIF is .....	2 Marks each 2*5= 10 Marks	CO1
Q2	True or False <b>A:</b> Heteroskedasticity refers to situations where the variance of the residuals is unequal over a range of measured values (TRUE/FALSE)  <b>B:</b> In case of Perfect Multicollinearity, the STATA software will give the results (TRUE/FALSE)  <b>C:</b> In Case of Dummy Variable, 1 represents the presence of a qualitative attribute, and 0 represents the absence. (TRUE/FALSE)  <b>D:</b> In the regression, t values = Beta coefficient/P values (TRUE/FALSE) <b>E:</b> Time series data is the data that is collected at different points in time (TRUE/FALSE)	2 Marks each 2*5 = 10 marks	CO2
	<b>Section B</b>	<b>4Qx5M= 20 Marks</b>	
Q1	Explain the concept of Dummy Variable.	5 Marks	CO2
Q2	What are lagged variables?	5 Marks	CO3
Q3	Give reasons for the inclusion of the 'disturbance term'/ 'Error Term' in an econometric model.	5 Marks	CO2
Q4	Critically evaluate the R square and adjusted R square in the regression model.	5 Marks	CO2
	<b>Section C</b>	<b>3Qx10M=30 Marks</b>	
Q1	Demonstrate the assumption of Classical Linear Regression Model (CLRM).	10 Marks	CO4
Q2	<b>A:</b> What is Dummy Variable Trap explain (5 marks) <b>B:</b> A short note on CMIE database (5 marks)	10 Marks	CO4

Q3	<p>Explain the four measurement scale of variables with examples.</p> <p style="text-align: center;"><b>Or</b></p> <p>Demonstrate the advantages of regression analysis, and critically explain the limitation of the regression analysis</p>		CO4																																																																																				
<b>Section D</b>		<b>2Qx15M= 30 Marks</b>																																																																																					
Q1	<p>Explain the issue of Multicollinearity in the regression. How to detect the Multicollinearity and what are the remedial measures available to fix the problem.</p>	15 Marks	CO4																																																																																				
Q2	<p>Interpret the following regression results and show how you will report these results in the report.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="border: none;">Source</td> <td style="border: none;">SS</td> <td style="border: none;">df</td> <td style="border: none;">MS</td> <td colspan="3" style="border: none;">Number of obs = 20</td> </tr> <tr> <td style="border: none;">Model</td> <td style="border: none;">5649.47979</td> <td style="border: none;">3</td> <td style="border: none;">1883.15993</td> <td colspan="3" style="border: none;">F( 3, 16) = 209.31</td> </tr> <tr> <td style="border: none;">Residual</td> <td style="border: none;">143.950985</td> <td style="border: none;">16</td> <td style="border: none;">8.99693654</td> <td colspan="3" style="border: none;">Prob &gt; F = 0.0000</td> </tr> <tr> <td colspan="4" style="border: none;"></td> <td colspan="3" style="border: none;">R-squared = 0.9752</td> </tr> <tr> <td colspan="4" style="border: none;"></td> <td colspan="3" style="border: none;">Adj R-squared = 0.9705</td> </tr> <tr> <td colspan="4" style="border: none;"></td> <td colspan="3" style="border: none;">Root MSE = 2.9995</td> </tr> <tr> <td colspan="7" style="border: none;"> </td> </tr> <tr> <td style="border: none;">y</td> <td style="border: none;">Coef.</td> <td style="border: none;">Std. Err.</td> <td style="border: none;">t</td> <td style="border: none;">P&gt; t </td> <td colspan="2" style="border: none;">[95% Conf. Interval]</td> </tr> <tr> <td style="border: none;">x1</td> <td style="border: none;">.9286648</td> <td style="border: none;">.1175349</td> <td style="border: none;">7.90</td> <td style="border: none;">0.000</td> <td style="border: none;">.6795019</td> <td style="border: none;">1.177828</td> </tr> <tr> <td style="border: none;">x2</td> <td style="border: none;">-2.337473</td> <td style="border: none;">.0941676</td> <td style="border: none;">-24.82</td> <td style="border: none;">0.000</td> <td style="border: none;">-2.537099</td> <td style="border: none;">-2.137846</td> </tr> <tr> <td style="border: none;">x3</td> <td style="border: none;">2.018029</td> <td style="border: none;">1.416239</td> <td style="border: none;">1.42</td> <td style="border: none;">0.173</td> <td style="border: none;">-.9842643</td> <td style="border: none;">5.020323</td> </tr> <tr> <td style="border: none;">_cons</td> <td style="border: none;">25.7459</td> <td style="border: none;">2.067968</td> <td style="border: none;">12.45</td> <td style="border: none;">0.000</td> <td style="border: none;">21.362</td> <td style="border: none;">30.12979</td> </tr> </table> <p style="text-align: center;"><b>Or</b></p> <p>Explain the auto correlation? How to detect this issue and explain the remedial measures.</p>	Source	SS	df	MS	Number of obs = 20			Model	5649.47979	3	1883.15993	F( 3, 16) = 209.31			Residual	143.950985	16	8.99693654	Prob > F = 0.0000							R-squared = 0.9752							Adj R-squared = 0.9705							Root MSE = 2.9995										y	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]		x1	.9286648	.1175349	7.90	0.000	.6795019	1.177828	x2	-2.337473	.0941676	-24.82	0.000	-2.537099	-2.137846	x3	2.018029	1.416239	1.42	0.173	-.9842643	5.020323	_cons	25.7459	2.067968	12.45	0.000	21.362	30.12979	15 Marks	CO4
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