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

Course: Introductory Econometrics **Semester : IV**
Program: BA (Hons.) Economics **Duration : 03 hrs.**
Course Code: ECON 2017 **Max. Marks: 100**

Instructions: Read the question paper carefully

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

<table>
<tr><td>Q3</td><td>Explain the four measurement scale of variables with examples.
Or
Demonstrate the advantages of regression analysis, and critically explain the limitation of the regression analysis</td><td></td><td>CO4</td></tr>
<tr><td></td><td>Section D</td><td>2Qx15M= 30 Marks</td><td></td></tr>
<tr><td>Q1</td><td>Explain the issue of Multicollinearity in the regression. How to detect the Multicollinearity and what are the remedial measures available to fix the problem.</td><td>15 Marks</td><td>CO4</td></tr>
<tr><td>Q2</td><td>Interpret the following regression results and show how you will report these results in the report.
<table>
<tr><th>Source</th><th>SS</th><th>df</th><th>MS</th><th></th><th></th></tr>
<tr><td>Model</td><td>5649.47979</td><td>3</td><td>1883.15993</td><td>Number of obs =</td><td>20</td></tr>
<tr><td>Residual</td><td>143.950985</td><td>16</td><td>8.99693654</td><td>F(3, 16) =</td><td>209.31</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Prob > F =</td><td>0.0000</td></tr>
<tr><td>Total</td><td>5793.43077</td><td>19</td><td>304.917409</td><td>R-squared =</td><td>0.9752</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Adj R-squared =</td><td>0.9705</td></tr>
<tr><td></td><td></td><td></td><td></td><td>Root MSE =</td><td>2.9995</td></tr>
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<table>
<tr><th>y</th><th>Coef.</th><th>Std. Err.</th><th>t</th><th>P>|t|</th><th>[95% Conf.</th><th>Interval]</th></tr>
<tr><td>x1</td><td>.9286648</td><td>.1175349</td><td>7.90</td><td>0.000</td><td>.6795019</td><td>1.177828</td></tr>
<tr><td>x2</td><td>-2.337473</td><td>.0941676</td><td>-24.82</td><td>0.000</td><td>-2.537099</td><td>-2.137846</td></tr>
<tr><td>x3</td><td>2.018029</td><td>1.416239</td><td>1.42</td><td>0.173</td><td>-.9842643</td><td>5.020323</td></tr>
<tr><td>_cons</td><td>25.7459</td><td>2.067968</td><td>12.45</td><td>0.000</td><td>21.362</td><td>30.12979</td></tr>
</table>
Or
Explain the auto correlation? How to detect this issue and explain the remedial measures.</td><td>15 Marks</td><td>CO4</td></tr>
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