Name: Enrolment No:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM & ENERGY STUDIES

Final End Semester Examination (Online) December, 2021

Program: MBA International Business **Semester: III**
Subject/Course: Econometrics **Max. Marks: 100**
Course Code: ECON8001 **Duration: 3 Hours**

IMPORTANT INSTRUCTIONS

1. *The student must write his/her name and enrolment no. in the space designated above.*
2. *The questions have to be answered in this MS Word document.*

Q.no	Section A (MCQs. 2 marks each)	Marks	COs
1.	A Type I error is a) failing to reject the null when it is false b) rejecting the null when it is true c) both of the above d) none of the above	**2**	**CO1**
2.	Hypothesis testing is based on a) minimizing the type I error b) minimizing the type II error c) minimizing the sum of type I and type II errors d) none of these	**2**	**CO1**
3.	Other things equal, when the sample size increases the power curve a) flattens out b) becomes steeper c) is unaffected	**2**	**CO1**
4.	The p value is a) the power b) one minus the power c) the type II error d) none of the above	**2**	**CO1**
5.	The terminology ceteris paribus means a) all else equal b) changing everything else by the amount by which they usually change c) changing everything else by equal amounts d) none of the above	**2**	**CO1**
6.	Maximizing R-square creates a) a better fit than minimizing the sum of squared errors b) an equivalent fit to minimizing the sum of squared errors c) a worse fit than minimizing the sum of squared errors	**2**	**CO1**
7.	The popularity of OLS is due to the fact that it a) minimizes the sum of squared errors b) maximizes R – Square c) creates the best fit to the data	**2**	**CO1**

<table>
<tr><td></td><td>d) none of these</td><td></td><td></td></tr>
<tr><td>8.</td><td>The variance of the error term in a regression is
a) the average of the squared residuals
b) the expected value of the squared error term
c) SSE divided by the sample size
d) None of these</td><td>2</td><td>CO1</td></tr>
<tr><td>9.</td><td>Asymptotic refers to what happens when
a) The sample size becomes very large
b) The sample size becomes very small
c) The number of explanatory variables becomes very large
d) The number of explanatory variables becomes very small</td><td>2</td><td>CO1</td></tr>
<tr><td>10.</td><td>The acronym CLR stands for
a) Constant linear regression
b) Classical linear relationship
c) Classical linear regression
d) None of these</td><td>2</td><td>CO1</td></tr>
<tr><td></td><td>Section B</td><td></td><td></td></tr>
<tr><td>Q.11</td><td>What are different type of research. Provide suitable examples?</td><td>5</td><td>CO2</td></tr>
<tr><td>Q.12</td><td>Differentiate between multivariate and bivariate techniques of data analysis ?</td><td>5</td><td>CO2</td></tr>
<tr><td>Q.13</td><td>Explain degree of freedom with a help of an example?</td><td>5</td><td>CO2</td></tr>
<tr><td>Q.14</td><td>What do you understand by Kurtosis. And how it effects data?</td><td>5</td><td>CO2</td></tr>
<tr><td></td><td>Section C (Attempt any 3)</td><td></td><td></td></tr>
<tr><td>Q.15</td><td>Explain different levels of measurement?</td><td>10</td><td>CO3</td></tr>
<tr><td>Q.16</td><td>What are standard errors. How to minimize standard errors?</td><td>10</td><td>CO3</td></tr>
<tr><td>Q.17</td><td>What is the full form of SPSS. Explain the process of creating and editing data file in SPSS?</td><td>10</td><td>CO3</td></tr>
<tr><td>Q.18</td><td>Case: 20 people went for a flu shot to a public hospital. After a month, an independent researcher checked how many of them got flu. 7 of them got flu and others didn’t .
a) Define the type of data used for the study
b) Differentiate between observational data and experimental data</td><td>10</td><td>CO3</td></tr>
<tr><td></td><td>Section D</td><td></td><td></td></tr>
<tr><td>Q.19</td><td>The data table below tabulates a pizza parlor's advertising expenditures and sales for 8 consecutive quarters. The marketing manager wants to know how much of an impact current advertising will have on sales two quarters from now. When running a regression with the dependent variable "sales" and the independent variable "advertising lagged by two quarters," how many data points can she use, given the available data?
<table>
<tr><td>Day</td><td>Sales (in Rs)</td><td>Advertising (in Rs)</td></tr>
<tr><td>Qtr 1, 2001</td><td>5,23000</td><td>88,000</td></tr>
<tr><td>Qtr 2, 2001</td><td>5,12000</td><td>84,000</td></tr>
<tr><td>Qtr 3, 2001</td><td>5,28000</td><td>92,000</td></tr>
<tr><td>Qtr 4, 2001</td><td>5,33000</td><td>92,000</td></tr>
<tr><td>Qtr 1, 2002</td><td>5,40000</td><td>96,000</td></tr>
<tr><td>Qtr 2, 2002</td><td>5,40000</td><td>95,000</td></tr>
</table></td><td>30</td><td>CO4</td></tr>
</table>

		Qtr 3, 2002	5,38000	93,000		
		Qtr 4, 2002	5,41000	98,000		

a) Analyze the cause and effect relationship between the two variables using suitable method.
b) Find the number of data points that can be used for a study that involves predicting the impact of advertising on sales.