

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
END SEMESTER EXAMINATION MAY 2019

Course: Econometrics
Programme: MBA (ET)
Time: 03 hrs.

CC:MBCE 702
Semester: II
Max. Marks:100

Instructions:

Section A carries 20 marks. **Section B** carries 50 marks. Attempt any five in Section B. **Section C** carries 30 marks.

Section A

1.	Autocorrelation	[5]	CO1
2.	Homoscedasticity	[5]	CO1
3.	Confidence Interval	[5]	CO2
4.	Type I Error	[5]	CO3

Section B (Attempt Any Five)

3.	Explain the significance of stochastic disturbance term	[10]	CO3
4.	Explain the assumptions Underlying Classical Linear Regression Model.	[10]	CO1,C O2
5.	Following is the data of number of copiers sold (Y) and the number of sales calls (X). The basic empirical theory tells us, that among many variables, the number of copiers sold is a function of the number of sales calls made. Let us assume a mathematical representation of the above relation to be:- $Y = \beta_1 + \beta_2 X$ Where number of sales calls(X) is an independent variable and copiers sold (Y) is a dependent variable.	[10]	CO1,C O2, CO3

		X	Y						
		10	4						
		20	6						
		30	8						
		40	10						
		50	13						
		60	14						
		<p>a. Calculate The Slope (β_2) and the Intercept (β_1) of the above equation and interpret the result.</p> <p>b. Draw out the differences between correlation and regression.</p>							
6.	Explain the characteristic of Normal Distribution. Discuss the similarities and differences from Standard Normal Distribution?	[10]	CO1,C O2,C0 3						
7.	What is Hypothesis testing? Explain the procedure for testing a Hypothesis.	[10]	CO1,C O2						
8.	How does an Econometrician proceed in their analysis of an economic problem? Explain the complete methodology?	[10]	CO1,C O2,CO 3						
Section C (Each sub part of question 1 carries 10 marks)									
9.	<p>The following data are the semester tuition fees (Rs000) for a sample of 3 Schools. At the .05 significance level, can we conclude there is a difference in the mean tuition rates for the three mentioned colleges?</p> <p style="text-align: center;">Critical F value for .05 significance level is 3.98.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">School of Business</th> <th style="text-align: center;">School of Law</th> <th style="text-align: center;">School of Engineering</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">10</td> <td style="text-align: center;">8</td> <td style="text-align: center;">7</td> </tr> </tbody> </table>	School of Business	School of Law	School of Engineering	10	8	7	[30]	CO1,C O2,C0 3
School of Business	School of Law	School of Engineering							
10	8	7							

11	9	8	
12	10	6	
10	8	7	
12		6	

- a) State the null and the alternative hypotheses.
- b) Develop an ANOVA table. What is the value of test statistic?
- c) What is your decision regarding the null hypotheses.

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Section A

1.	Standard Error	[5]	CO1
2.	Level of Significance	[5]	CO1
3.	Z test	[5]	CO2
4.	Interval Estimation	[5]	CO3

Section B (Attempt Any Five)

3.	Explain the characteristic of Normal Distribution.	[10]	CO3
4.	Explain the assumptions Underlying Classical Linear Regression Model.	[10]	CO1,C O2
5.	Following is the data of number of copiers sold (Y) and the number of sales calls (X). The basic empirical theory tells us, that among many variables, the number of copiers sold is a function of the number of sales calls made. Let us assume a mathematical representation of the above relation to be:- $Y = \beta_1 + \beta_2 X$ Where number of sales calls(X) is an independent variable and copiers sold (Y) is a dependent variable.	[10]	CO1,C O2, CO3

X	Y
10	2
20	4
30	6
40	8
50	10
60	12

- c. Calculate The Slope (β_2) and the Intercept (β_1) of the above equation and interpret the result.
- d. Draw out the differences between correlation and regression.

6.	Explain the significance of stochastic disturbance term.	[10]	CO1,C O2,C0 3
7.	What are Type I and Type II errors. Explain the procedure for testing a Hypothesis.	[10]	CO1,C O2
8.	How does an Econometrician proceed in their analysis of an economic problem? Explain the complete methodology?	[10]	CO1,C O2,CO 3

Section C (Each sub part of question 1 carries 10 marks)

9.	<p>The following data are the semester tuition fees (Rs000) for a sample of 3 Schools. At the .05 significance level, can we conclude there is a difference in the mean tuition rates for the three mentioned colleges?</p> <p>Critical F value for .05 significance level is 3.98.</p> <table border="1" data-bbox="251 1612 1307 1843"> <thead> <tr> <th>Blue High School</th> <th>Red High School</th> <th>Green High School</th> </tr> </thead> <tbody> <tr> <td>10</td> <td>8</td> <td>7</td> </tr> <tr> <td>11</td> <td>9</td> <td>8</td> </tr> </tbody> </table>	Blue High School	Red High School	Green High School	10	8	7	11	9	8	[30]	CO1,C O2,C0 3
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- d) State the null and the alternative hypotheses.
- e) Develop an ANOVA table. What is the value of test statistic?
- f) What is your decision regarding the null hypotheses.