Name: **Enrolment No:**	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, Dec 2019

Course: Econometrics **Semester: III**
Program: MBA IB/PSM **Time: 3 Hours**
Course code: MBCE 702 **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.	Interval Estimators	**[5]**	**CO1**
2.	Total Sum of Squares	**[5]**	**CO1**
3.	Confidence Interval	**[5]**	**CO2**
4.	Type I Error	**[5]**	**CO3**

Section B (Attempt Any Five)

1.	Explain the significance of stochastic disturbance term	**[10]**	**CO3**
2.	Explain the assumptions Underlying Classical Linear Regression Model.	**[10]**	**CO1,CO2**
3.	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:- **$Y = \beta 1 + \beta 2X$** Where number of sales calls**(X)** is an independent variable and copiers sold **(Y)** is a dependent variable.	**[10]**	**CO1,CO2, CO3**

X	**Y**

		10 | 4 20 | 6 30 | 8 40 | 10 50 | 13 60 | 14 a. Calculate The Slope **(β2)** and the Intercept **(β1)** of the above equation and interpret the result. b. Draw out the differences between correlation and regression.		
4.	Explain the characteristic of Normal Distribution. Discuss the similarities and differences from Standard Normal Distribution?		**[10]**	**CO1,CO2,CO3**
5.	What is Hypothesis testing? Explain the procedure for testing a Hypothesis.		**[10]**	**CO1,CO2**
6.	How does an Econometrician proceed in their analysis of an economic problem? Explain the complete methodology?		**[10]**	**CO1,CO2,CO3**
Section C (Each sub part of question 1 carries 10 marks)				
1.	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? Critical **F** value for **.05** significance level is **3.98.** **School of Business** | **School of Law** | **School of Engineeri** 10 | 8 | 7 11 | 9 | 8		**[30]**	**CO1,CO2,CO3**

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.