

## Model Question Paper -I

<b>Name:</b>  <b>Enrolment No:</b>	
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**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2018**

**Course: Econometrics**

**Programme: MBA (IB/PSM)**

**Time: 03 hrs.**

**Instructions:**

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

**Semester: III**

**Max. Marks:100**

**Course Code: MBCE 702**

**Section A**

1.	Stochastic Disturbance	[5]	CO1
2.	Conditional Expected Value	[5]	CO1
3.	Standard Error of an Estimate	[5]	CO2
4.	Degree of freedom.	[5]	CO3

**Section B ( Attempt Any Five )**

1.	How does an Econometrician proceed in their analysis of an economic problem? Explain the complete methodology?	[10]	CO3
2.	Explain Population Regressions Function (PRF) and Sample Regression Function (SRF) with the help of a graph.	[10]	CO1,C O2,CO 3
3.	Explain the assumptions Underlying Classical Linear Regression Model.	[10]	CO1,C O2
4.	Explain the characteristic of Normal Distribution. Discuss the similarities and differences from Standard Normal Distribution?	[10]	CO1,C O2,C0 3
5.	What is Hypothesis testing? Explain the procedure for testing a Hypothesis.	[10]	CO1,C O2
6.	Indian Management Association wishes to have information on the mean income of middle managers in the retail industry. A random sample of 256 managers reveals a	[10]	CO1,C O2,CO 3

sample mean of \$45,420. The standard deviation of this population is \$2,050. The Association would like to have answers to the following question:

What is the reasonable range of values or interval for the population mean given the Z stastic to be 1.96?

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

1. 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.

[30] CO1,C02,C03

X	Y
20	40
40	60
40	80
50	100
60	130
60	140
70	140
30	150
70	170
65	170

	<p>a) Calculate The Slope (<math>\beta_2</math>) and the Intercept (<math>\beta_1</math>) of the above equation and interpret the result.</p> <p>b) Calculate Standard Errors (SE) of Estimates (<math>\beta_2</math> and <math>\beta_1</math>)</p> <p>c) Draw out the differences between correlation and regression.</p>		
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## Model Question Paper -II

<b>Name:</b>  <b>Enrolment No:</b>	
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**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2018**

**Course: Econometrics**  
**Programme: MBA (IB/PSM)**  
**Time: 03 hrs.**

**Semester: III**  
**Max. Marks:100**

**Instructions:**

**Course Code: MBCE 702**

**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.	Heteroscedasticity	[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,C O2
3.	<p>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.</p> <p>Let us assume a mathematical representation of the above relation to be:-</p> <p><b><math>Y = \beta_1 + \beta_2 X</math></b></p> <p>Where number of sales calls(X) is an independent variable and copiers sold (Y) is a dependent variable.</p>	[10]	CO1,C O2, CO3

X	Y
10	4
20	6
30	8
40	10
50	13
60	14

- a. Calculate The Slope ( $\beta_2$ ) and the Intercept ( $\beta_1$ ) 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,C O2,C0 3
5.	What is Hypothesis testing? Explain the procedure for testing a Hypothesis.	[10]	CO1,C O2
6.	How does an Econometrician proceed in their analysis of an economic problem? Explain the complete methodology?	[10]	CO1,C O2,C0 3

**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 <b>3.98</b> .	[30]	CO1,C O2,C0 3						
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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.