



UNIVERSITY OF PETROLEUM & ENERGY STUDIES

UPES, DEHRADUN

End Semester Examination –May, 2017

Name of the Program: MBA (ET)

Semester –II

Subject Name : Econometrics

Max. Marks : 100

Subject Code : MBCE 702

Duration : 3 Hrs

This question paper has 3 page(s).

Section – A (4*5 =20 Marks)

Attempt All Questions

1. Briefly Explain the following terms
 - a) Stochastic Error
 - b) Conditional Expected Value
 - c) Level of Significance
 - d) Autocorrelation
 - e) Standard Error

Section - B (5*10=50 Marks)

Attempt All Questions

2. Explain with the help of a graph the relationship of Total Sum of Squares, Explained, Sum of Squares and Residual Sum of Squares.
3. Explain the assumptions Underlying Classical Linear Regression Model.
4. Explain the characteristic of Normal Distribution. Discuss the similarities and differences from Standard Normal Distribution?
5. What is Hypothesis testing? Explain the procedure for testing a Hypothesis. Explain types of errors with help of examples.

Section - C (2 *15=30 marks)

Attempt All Questions

6. 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.

OBSERVATION	Y	X
1	30	20
2	60	40
3	40	20
4	60	30
5	30	10
6	40	10
7	40	20
8	50	20
9	30	20
10	70	10

- a. Calculate The Slope (**β_2**) and the Intercept (**β_1**) of the above equation and interpret the result.
 - b. Calculate the regression coefficient. Draw out the differences between correlation and regression.
7. 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 – 5.14.

Oxford	Cambridge	Boston
11	8	8
12	9	9
13	10	7

- 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.