LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **STATISTICS**

FIFTH SEMESTER – NOVEMBER 2016

ST 5405 - ECONOMETRIC METHODS

Date: 11-11-2016   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

Section –A

Answer all the questions   **(10 x 2 = 20)**

1. Define Multiple Regression Model.
2. What is independent and dependent variable.
3. Define intercept and slope.
4. Distinguish between R^2 and adjusted R^2
5. What do you understand by Auto correlation?
6. Define Multicollinearity.
7. What is dummy variable?
8. What is reference category?
9. Define Lag variable.
10. Define Mean Absolute Percentage Error.

Section –B

Answer any five questions   **(5 x 8 = 40)**

11. Write short notes on limitation and scope of Econometrics.
12. Define Multicollinearity and provide any one method to detect Multicollinearity.
13. What are sources of problem of Heteroscedasticity?
14. From the following data estimate d statistic and test for correlation
    e_t : 0.9, 2.1, -2.3, -2.9, 1.4, 3.2, 0.5, 0.8, 2.6, -2.5, -1.9
    (given d_L = 1.45 and d_U =1.65)
15. Find the value of R^2 for following data

Y	9	6	7	5	4
X_1	4	2	3	3	1
X_2	1	5	2	4	6

16. Explain any two use of Residual analysis.
17. Define Outlier and Explain any two methods to detect outliers
18. Explain Auto correlation function plot and Partial auto correlation function plot.

Section – C

Answer any two questions   **(2 x 20= 40)**

19. Obtain best linear unbiased estimator for Regression coefficient in multiple regression model.
20. Consider the following data

y	10	15	13	10	11	14	15	12	16	19	11	10	13
x	11	12	17	8	12	11	13	21	23	20	10	10	21

    i.   Estimate the function **y** on **x**
    ii.   Test the significance of the parameters at 5 % level of significance.
    iii.   Find the value of **y** if **x** is

21. Explain the procedure for testing the significance of the regression coefficient and testing the hypothesis for over all fitness of the model using ANOVA.
22. Explain the various problem involving constructing multiple regression models.

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