



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – STATISTICS

FIFTH SEMESTER – APRIL 2018

ST 5405- ECONOMETRIC METHODS

Date: 08-05-2018
Time: 09:00-12:00

Dept. No.

Max. : 100 Marks

Section –A

Answer all the questions

(10 x 2 = 20)

1. Define econometrics.
2. What is an explanatory variable?
3. Define intercept and slope.
4. Define coefficient of determination.
5. Write the formula for Durbin Watson d statistic.
6. Define Multicollinearity.
7. What is a dummy variable?
8. What is a bench mark category?
9. Define Lag variable.
10. State any two assumptions of errors in regression mode.

Section –B

Answer any five questions

(5 x 8 = 40)

11. Explain any four Econometrics models.
12. Mention the various assumptions of OLS.
13. Elucidate sources of problem of Heteroscedasticity?
14. From the following data estimate d statistic and test for correlation
 $e_t : 0.7, 1.9, -1.3, -2.0, 2.7, 1, 0.3, 0.9, 2.4, -2.1, -1.2$
(given $d_L = 1.45$ and $d_U = 1.65$)

15. Find the value

Y	8	5	6	4	3
X ₁	3	1	2	3	4
X ₂	2	4	3	4	5

of R^2 for following data

16. What is meant by dummy variable trap? Explain the methods to overcome it.
17. Explain the need for introducing error term in a linear model.
18. Define Outlier and explain any two methods to detect outliers.

Section – C

Answer any two questions

(2 x 20= 40)

19. Consider the following data

Sales (y)	12	14	9	8	10	9	13	11	15	10	12	11	14
Adv. Exp (x)	10	13	16	7	11	12	14	19	20	21	11	9	20

- 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 25

20. Explain any ten real life applications of econometric models.

21. Discuss the causes and consequences of Multicollinearity.

22. Derive β_0 and β_1 in simple regression model.

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