STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI – 86
(For Candidates admitted during the academic year 2015 – 2016 and thereafter)

SUBJECT CODE: 15EC/PE/EC14

M.A. DEGREE EXAMINATION NOVEMBER 2018
BRANCH III – ECONOMICS

COURSE : ELECTIVE
PAPER : ECONOMETRIC METHODS
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ANY FIVE QUESTIONS IN 300 WORDS EACH: (5x8=40)

1. Elucidate the methodology of Econometrics.
2. What is the use of coefficient of determination?
   Show that $R^2 = \beta_2 \sum x_i^2 / \sum y_i^2$
3. Discuss the functional forms of Regression models explaining howthe parameters are estimated and interpreted.
4. Interpret the following regression results obtained from a sample of size 30. Test if the parameters are significant:
   $W_i = 224.8438 + 5.0766\ IQ_i + 498.05D$
   (SE) (66.6424) (0.6624) (20.0768)
   Where W_i =hourly wages of individual, IQ_i= Intelligence quotient of individual and D = 1 if individual is post graduate, D = 0 if individual is under graduate.
5. Data on 89 firms give the following sum of squares and the cross products in the deviation form:

	y	x_1	x_2
y	114	37	100
x_1		50	-66
x_2			967

   $\overline{Y} = 5.8$, $\overline{X_1} = 2.9$, $\overline{X_2} = 3.5$
   Fit the regression equation of Y on X_1 and X_2 and determine R^2
6. How does the Durbin Watson test help to detect autocorrelation? Explain with the following data.
   e_t : -2 1.5 2.5 -3 0 3 0.5 -3.5 2 3 -4
7. Illustrate the causes of heteroscedasticity.

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SECTION – B

ANSWER ANY THREE QUESTIONS IN 1200 WORDS EACH: (3x20=60)

8. Elucidate the causes, consequences and remedy of multicollinearity.
9. State and prove Gauss Markov theorem.
10. Discuss the nature and consequences of autocorrelation. How is this problem remedied?
11. Illustrate the uses of Dummy variables in regression models.
12. Examine the overall significance of the following model with the given data: $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + u_i$

X_1	2	1	5	8	7	2	3	3
X_2	6	5	5	7	3	1	8	2
Y	13	9	15	16	21	9	15	10

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