

**31-05-2017**

**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BANGALORE-27**

**B.A. ECONOMICS- VI SEMESTER**

**SPECIAL SUPPLEMENTARY EXAMINATION: MAY 2017**

**ECA 6316 - Basic Econometrics**

**Time: 3 Hours Maximum Marks-100**

ATTACH THE QUESTION PAPER WITH THE ANSWER SCRIPT

**This paper contains TWO printed pages and THREE parts**

**PART A**

1. **Answer any TEN of the following Marks:3x10=30**
2. Explain the difference between a statistical and a deterministic relationship.
3. Distinguish between cross sectional and time series data.
4. What is meant by a random variable?
5. State the Central Limit Theorem.
6. Explain the significance of error term in econometric analysis.
7. Distinguish between R square and adjusted R square.
8. Differentiate between t and F statistics.
9. A study was conducted on child mortality (CM) with respect to the variables Per capita GNP (PGNP) and female literacy rate (FLR). The regression result is given below. CM = 263.6416- 0.0056PGNP- 2.236FLR

Standard error (11.593) (0.002) (.2099)

Test the hypothesis that PGNP has no impact on CM (Let α=5%, tα/2 =2)

1. Write a brief note on regression through origin.
2. Distinguish between homoscedasticity and heteroscedasticity.
3. What is ‘imperfect multicollinearity’?
4. Mention any three causes of auto correlation.

**PART B**

1. **Answer any FIVE of the following Marks: 5x5=25**
2. What is the sample regression function? How does it differ from the population regression function?
3. State and explain Gauss Markov Theorem.
4. Explain the characteristics of a ‘good’ econometric model.
5. Explain the properties of Normal Distribution.
6. Write a note the importance of normality assumption.
7. A researcher is using data for a sample of 3240 female employees 25 years of age and above to investigate the relationship between employees’ hourly wage rates Yi (measured in dollars per hour) and their age Xi (measured in years). The population regression equation takes the form of equation Yi = β0+β1Xi+ui. Preliminary analysis of the sample data produces the following sample information:

N=3240 ∑xi2=25526.17 ∑yi2=78434.97 ∑xiyi=3666.426 ∑Xi=96143.00 ∑Yi=34379.16

(a)Use the above information to compute OLS estimates of the intercept coefficient βo and the slope coefficient β1 .

(b)Interpret the slope coefficient estimate you calculated in part (a).

19. Discuss the assumptions of Classical Linear Regression Model

**PART C**

1. **Answer any THREE of the following Marks:15x3=45**
2. Explain in detail the various steps involved in two variable regression model using an example of your choice.
3. Write an essay on hypothesis testing using an example of your choice.
4. What is autocorrelation? What is its consequences and remedial measures? What is multicollinearity? What are the causes and consequences of this problem? Mention the remedial measures.
5. Given model relates mean hourly wage (Y) and years of schooling (X), regression model is as follows :Yi = β0+β1Xi+ui

|  |  |
| --- | --- |
| Y | X |
| 4.4567 | 6 |
| 5.77 | 7 |
| 5.9787 | 8 |
| 7.3317 | 9 |
| 7.3182 | 10 |
| 6.5844 | 11 |
| 7.8182 | 12 |
| 7.8351 | 13 |
| 11.0223 | 14 |
| 10.6738 | 15 |
| 10.8361 | 16 |
| 13.615 | 17 |
| 13.531 | 18 |
| 112.7712 | 156 |

Using the above data calculate

1. The OLS estimators β0 and β1.
2. Find the variance and standard error of the estimators.
3. Estimate R square value for the given model.
4. Interpret the regression result.
5. Write a note on regressions using different functional forms.

ECA6316-A-17