

Date of Exam: 05.12.2020; Time: 2p.m.-3p.m.

C.U. Undergraduate Intermediate Examination, 2020
Introductory Econometrics
CC-X
Full Marks-50

[Theory Full Marks-32]

Answer all the questions

10X2

1. $Y = \alpha + \beta X + u$ is in the form of
 - (a) Deterministic
 - (b) Stochastic
 - (c) Non-linear
 - (d) Data mining
2. $E(\hat{\beta}) = \beta$ implies that the estimator $\hat{\beta}$ is
 - (a) Minimum variance
 - (b) Consistent
 - (c) Linear
 - (d) Unbiased
3. If $E(U_i^2) = \sigma^2$, it means
 - (a) Autocorrelation
 - (b) Homoscedasticity
 - (c) Multicollinearity
 - (d) Heteroscedasticity
4. If $E(U_i U_j) \neq 0$, when $i \neq j$ then there is
 - (a) Autocorrelation
 - (b) Multicollinearity
 - (c) Non-autocorrelation
 - (d) Heteroscedasticity
5. The value of R^2 lies between
 - (a) -1 and 0
 - (b) -1 and 1
 - (c) 0 and 1
 - (d) None of the above
6. If $\sum xy = 200$, $\sum x_i^2 = 100$ and $\sum y_i^2 = 600$, then $\hat{\beta}$ is
 - (a) $\frac{1}{2}$
 - (b) 2
 - (c) $\frac{1}{3}$
 - (d) 3
7. In an Econometric model if relevant variables are excluded and irrelevant variables are included then it is said to be
 - (a) Simultaneity bias
 - (b) Specification bias
 - (c) Specification unbiased
 - (d) None of the above
8. Testing the overall significance of a regression could be done by
 - (a) ANOVA
 - (b) Chow test
 - (c) 't' test
 - (d) None of the above
9. Student's t-test is applicable in case of
 - (a) Unequal number of samples
 - (b) Equal number of samples
 - (c) Small samples
 - (d) All the above
10. To estimate statistical significance of the difference between two variances, the following test is used
 - (a) χ^2 test
 - (b) Chow test
 - (c) 't' test
 - (d) 'F' test

Answer any two questions:

2X6

- The following table gives data on weekly family consumption expenditure(Y) and weekly family income(X) :
Y: 70 65 90 95 110 115 120 140 155 150
X: 80 100 120 140 160 180 200 220 240 260
Estimate the consumption function of the family $Y = \beta_0 + \beta_1 X + u$
- From a sample of 200 pairs of observations the following quantities were calculated:
 $\sum X = 11.34$ $\sum Y = 20.72$ $\sum X^2 = 12.16$
 $\sum Y^2 = 84.96$ $\sum XY = 22.13$
Estimate the two regression lines.
- Define autocorrelation. What are the sources of autocorrelation.

[Internal Assessment Full Marks-10]

Answer all the questions:

4X2

- The analysis of variance method was developed by
(a) Ragnar Frisch (b) R.A. Fisher
(c) Chow (d) Oscar Lange
- If $H_0: \mu = 5$ and $\sigma^2 = 3$, then the hypothesis is said to be
(a) Composite (b) Simple
(c) Null (d) None of the above
- One of the properties of the OLS estimators is
(a) Linearity (b) Unbiasedness
(c) Minimum variance (d) All of them
- R^2 can be
(a) Negative (b) In between 0 to 1
(c) Greater than one (d) None of them

Answer any one:

1X2

- State the statistical properties of the Least Squares Estimator.
- What is Heteroscedasticity?

[Tutorial Full Marks-08]

Write a term-paper on the following:

1X8

Durbin-Watson Test