বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

B.Sc. Honours Examination 2021

(CBCS)

4th Semester

ECONOMICS

PAPER—C10T

INTRODUCTORY ECONOMETRICS

Full Marks : 60

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

THEORY : C10T

Answer any *four* questions. 4×15

1. Define econometrics. Write briefly about the evolution of econometrics as a branch of economics. How does an econometric model differ from a mathematical model? 4+5+6

2. What do you mean by the disturbance term in the regression model?

Explain why the disturbance term is included in an econometric relationship. State the properties of disturbance term. 3+6+6

3. Distinguish between Null hypothesis and Alternative hypothesis. Discuss under what conditions χ^2 and t statistics are applied.

For a group of 25 students the average IQ is 108. Test the hypothesis that the average IQ of students in population is 100, given that the population variance σ^2 is 289. Test it at 1% level of significance.

4+6+5

4. Distinguish between parameter and statistic. Define and compare Type I error and Type II error. Give definition of the power of a test.

4+8+3

5. What is regression? State the assumptions necessary for OLS estimation of the two-variable population regression model. Explain how you would measure goodness of fit of an estimated model? 4+6+5

6. Consider the multiple regression model : $y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + u$. Derive the OLS estimators of β_1 and β_2 for this model. 15

7. What is autocorrelation? Which assumption of CLRM is violated under autocorrelation and why? Write a short note on Durbin-Watson test.

4+5+6

8. Define multicollinearity. What are its causes? What are the main consequences of this problem? Suggest some suitable measures to correct the problem of multicollinearity. 2+3+5+5

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