WEST BENGAL STATE UNIVERSITY

B.Sc. Honours 5th Semester Examination, 2021-22

STSADSE03T-STATISTICS (DSE1/2)

ECONOMETRICS

Time Allotted: 2 Hours | Full Marks: 40

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.
All symbols are of usual significance.

GROUP-A

Answer any *four* questions from the following $5\times4 = 20$

1. Discuss about the ML method on simple linear regression model. 5

2. Find the Cramer-Rao lower bound for the parameters of multiple regression model. 5

3. Make a short note on estimation of parameters in presence of heteroskedasticity. 5

4. What are the consequences of autocorrelation? 5

5. Discuss on the diagnostics of multicollinearity. 5

6. Make a note on variance inflation factors. 5

GROUP-B

Answer any *two* questions from the following $10\times2 = 20$

7. (a) Develop the ANOVA for a simple linear regression model. 6
   (b) What is hat matrix? Prove that it is symmetric and idempotent. 4

8. (a) Discuss Breusch Pagan test on heteroskedasticity assuming the hypothesis. 6
   (b) Discuss on the consequences of heteroskedasticity. 4

9. (a) Estimation procedures with autocorrelated errors when autocorrelation coefficient is known. 6

(b) What are the limitations of the Durbin Watson test? 4

10.(a) Make a discussion on the sources of multicollinearity. 6

(b) Discuss the role of principal component in multicollinearity. 4

N.B. : *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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