# 2008

## ECONOMICS

[ Special Paper : *Econometrics*-I ]

PAPER—IX

*Full Marks* : 40

*Time* : 2 hours

*The figures in the right-hand margin indicate marks*

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

*Illustrate the answers wherever necessary*

GROUP—A

**1.** Answer any *five* questions : 2 x 5

(*a*) Define the likelihood function in connection with the estimation of the parameters in linear regression model.

(*b*) Define the concept of proportional marginal variance decomposition (PMVD) in linear multiple regression.

(*c*) What is the relevance of the zero mean assumption of the disturbance term ?

(*d*) What is interaction effect ?

(*e*) How can you use dummy variable in seasonal analysis ?

(*f*) How is dummy variable used in piecewise linear regression ?

(*g*) Mention the sources of autocorrelation.

(*h*) Define heteroskedasticity.

(*i*) Why is autocorrelation absent in cross-section data ?

(*j*) Can we use autocorrelation and autoregression interchangeably ?

## GROUP—B

Answer any *two* questions

**2.** Define the concept of Enhancement-Synergism. Show how the concept of partial correlation is defined in the presence of Enhancement -Synergism. 2 + 3

**3.** Explain the main effects of multi-collinearity in multiple linear regression model. 5

**4.** Explain the Chow test for structural stability. 5

**5.** Explain the linear probability model. 5

## GROUP—C

Answer any *two* questions

**6.** Explain how the regression coefficients of a multiple regression model can be interpreted in two different ways. What is the relevance of these two interpretations. 7 + 3

**7.** Explain in details the relevance of the assumption that the explanatory variables are non-stochastic in CLRM. 10

**8.** Explain the probit model. Is there any relationship between logit and probit estimates ? 10

9. (*a*) Examine whether the estimates of parameters will be 'BLUE' or not in the presence of heteroskedasticity.

(*b*) State the limitations of D-W test. 7 + 3

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