Total No. of Questions : 05]

SEAT No. :

P2532

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[5004] - 4006
M.A. (Part - II) (Semester - IV)
ECONOMICS
EC - 4006 : Econometrics
(2013 Pattern) (Credit System)

Time : 3 Hours] ***[Max. Marks : 50***

Instructions to the candidates:

1) *Attempt all questions*
2) *All questions carry equal marks.*
3) *Use of non-programmable calculator is allowed.*
4) *Symbols have their usual meaning.*

Q1) Explain ordinary least squares method(OLS) for fitting the line of regression of Y on X stating its assumptions clearly. **[10]**

OR

Discuss OLS estimation in presence of autocorrelation. **[10]**

Q2) Following data was collected from five different plants in a certain industry. **[10]**

Production (X)	:	12	4	6	11	8
Total Cost (Y)	:	80	44	51	70	61

Estimate the linear cost function $Y = \alpha+\beta X$ for the industry. What is the economic significance of the estimates of α and β.

OR

Explain the methods of detection of multicollinearity and its remedial measures. **[10]**

Q3) Explain how dummy variable is used to examine the structural stability of a regression model with an illustration. **[10]**

OR

Obtain the reduced form of the following National Income Model : **[10]**

$C_t = \alpha_0 + \alpha_1 (Y_t - T_t)$ .... $0 < \alpha_1 < 1.$

$I_t = \beta_1 \; Y_{t-1} + \beta_2 R_t$ .... $\beta_1 > 0, \beta_2 < 0$

$Y_t = C_t + I_t + G_t$

Where C_t, I_t and T_t represent consumption, investment, national income respectively and are current endogenous variables. T_t, R_t and G_t represent taxes on income, government regulator and government expenditure respectively as current exogenous variables and Y_{t-1} is a lagged endogenous variable.

Q4) State and explain properties of the ordinary least squares(OLS) estimators under normality assumptions. **[10]**

OR

Explain the nature of heteroscedasticity and consequences of using OLS in presence of heteroscedasticity. **[10]**

Q5) a) Discuss coefficient of determination as a measure of goodness of fit. **[5+5]**

b) Explain the concept of stationary and non-stationary stochastic processes.

OR

c) Discuss the methods of estimation of various time series models. **[10]**