



M 24921

Reg. No.:

Name:

IV Semester M.A./M.Sc./M.Com. Degree (Reg./Supple./Improv.)
Examination, March 2014
Statistics

Paper – 4.2 : Elective – II : ECONOMETRICS

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer **any five** questions choosing either **A** or **B** from **each** Unit.
2) **All** questions carry **equal** marks.

UNIT – 1

- I. A) a) Describe producers equilibrium.
b) What you mean by production function ? Examine whether the following production function is linear homogeneous ; $x = k a^\alpha (1 - a)^{1-\alpha}$, $0 < \alpha < 1$.
c) State and prove Euler's theorem. (4+5+5)

OR

- B) a) Describe CES production function. What are its properties ?
b) Write short note on "elasticity of substitution".
c) Discuss conditions for equilibrium of a market. (5+4+5)

UNIT – 2

- II. A) a) Describe the need and role of econometric models.
b) For the simple linear regression model derive the OLS estimators of the parameters.
c) What is R^2 and adjusted R^2 ? Describe their role in model fitting. (4+6+4)

OR

P.T.O.



B) a) Stating the basic assumptions describe multiple linear regression model. Discuss the maximum likelihood estimators of its parameters. What are the properties of these estimators ?

1/2+3/2+3

b) Develop a test procedure for testing the null hypothesis $H_0 = \beta_1 = \beta_2$ of the model $Y_t = \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + U_t$. (8+6)

6

UNIT - 3

III. A) a) Explain adaptive expectation models. Describe a method of estimation of parameters of such models.

3+5

b) Describe forecasting power of an econometric model. (8+6)

6

OR

B) a) What are polynomial lag models ? Explain how do you estimate the parameters of such models.

3+5

b) Write note on non-linear regression model. (8+6)

6

UNIT - 4

IV. A) a) Describe consequences of violation of the assumption of homoscedasticity in regression models. How does one estimate the parameters in such cases ? Explain.

3+4

b) Define instrumental variable estimator. Under conditions, to be stated, prove that such estimators are consistent. (7+7)

2/2+4/2

OR

B) a) What is auto correlation ? Describe Cochran-Orcutt method for estimating the parameters when auto correlation is present.

2+5

b) Describe the Durbin-Watson test for testing presence of auto correlation.

4+3

7

(7+7)



UNIT - 5

V. A) a) Distinguish between exact and over identification of an econometric model.

4
b) Show that recursive model is always identifiable.

5
c) Prove that OLS estimators of recursive model parameters are consistent.

(4+5+5)

OR

B) a) Describe 2SLS method of estimation. What are the properties of such estimators ?

4+3

b) Explain the instrumental variable technique of estimation. Illustrate it through a suitable model.

(7+7)

4+3
