PG (CBCS) EVEN SEMESTER EXAMINATION, 2023

ECONOMICS

4th Semester

Course No. : ECOCC - 404

(Advanced Econometrics)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

(Answer any five, selecting one from each unit)

UNIT - I

1. (a) Elaborate the concept of simultaneous equation bias on the basis of any standard linear macroeconomic model.

    (b) Distinguish between structural and reduced form equations with economic examples.

    (c) Point out the rank and order conditions for identification of the following demand-supply model:
    $$q^D = \beta_0 + \beta_1 p + u_1$$
    $$q^S = \alpha_0 + \alpha_1 p + \alpha_2 w + u_2$$
    and $q^D = q^S$
    (symbols have usual meanings)   5+4+5=14

    (Turn Over)

---

8. Write short notes on any two :   7x2=14

    (a) Adaptive expectations

    (b) Partial stock adjustment

    (c) Estimation of a dynamic distributed lag model.

UNIT - V

9. (a) Distinguish between cross sectional and longitudinal panel and between balanced and unbalanced panel.

    (b) Elaborate the LSDV model for balanced panel and show how you can test for the absence of cross-sectional effects. Can you test for the superiority of LSDV over the pooled estimater? Explain briefly.

    (c) Explain what you mean by random individual effects in a linear panel data model. How is it different from fixed effects? Outline the estimation procedue in the presence of random effects.   3+4+7=14

10. Write short notes on any two :   7x2=14

    (a) Hausman Test for correlated random effects.

    (b) Semingly Unrelated Regression Equations

    (c) Random Effects and GLS.

★★★

2. (a) How would you apply 2SLS method to estimate parameters of a simple Keynesin model? Can you find consistant estimates of MPC? Explain.

(b) Write brief analytical notes on any one :

(i) Instrumental variable approach to 2SLS.

(ii) Instrumental variable approach to endogeneity testing. $(4+3)+7=14$

UNIT - II

3. (a) Define a stationary stochastic process and verify if the process $y_t = \rho y_{t-1} + \in t\ (|\rho|<1)$ has a stationary y_t where $\in_t$ is a white random noise.

(b) Distinguish between trend stationary and difference stationary stochastic processes with an example.

(c) Show that a Random walk is necessarily a non-stationary process. $8+3+3=14$

4. (a) Point out the important features of integrated time series.

(b) Elaborate the Augmented Dickey-Fuller test for stationary of a univariate time series.

(c) Outline the Engle-Granger two step method of testing for co-integration. $4+5+5=14$

UNIT - III

5. (a) Elaborate the use of independent dummy variables in testing for the difference in marginal propensity to consume across war time and peace time consumption functions.

(b) How would you use dummy variables in seasonal sales performance analysis of four T-shirt makers across four seasons. Explain with special reference to the data stacking procedure. $6+8=14$

6. Write short notes on any two : $7x2=14$

(a) The Logit model

(b) Dummy variables and collinearity

(c) Goodness of fit in qualitative dependent variable models.

UNIT - IV

7. (a) Why are lagged regression models needed in economic research?

(b) Elaborate the Koyck model of autoregresive distributed lag and explain why application of OLS would lead to biased and inconsistent estimates of parameters.

(c) Present a Jorgenson's rational lag and point out how it is more generalised compared to the Koyck model. $2+8+4=14$