PG/II/ECO/**XVII/07**

2007

ECONOMICS

PAPER-XVII

Full Marks : 100

Time : 4 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*** *whenever necessary*

(Econometrics-Ill)

[Marks : SO]

Answer **Q. No. 5** and any **two questions** from the rest

1. Consider **a regression equation** to be estimated from observations on N households for two consecutive periods of time. Assume that the regression disturbances are cross-sectionally uncorrelated but timewise autoregressive with $P;= Pj$ for all i, j.

(a) Determine the elements of 52 **(the variance-covariance matrix of the disturbance term)**

(b) Devise an estimation procedure that would lead to a consistent estimator of 0. **8+7**

2. (a) Suppose you have a large number of cross-section and time series data and the regression disturbance is composed of the three independent components- one is associated with time, one is associated with cross-section unit and the third varying both dimentions. What type of solution would you suggest to get consistent estmates of the coefficients of the model?

(b) A regression model to be estimated from pooled data is given by

$$Yr = Q X, + Eir$$
$$(1=1,2;\ t=1, 2,...,21)$$

The sample data are given as follows:

X;X=10	X,Y,=10		
X'XZ= 8	X1Y=	8	Y,Y=13.90
XZXZ=10	XZY =	8	Y,Y=11.92
	XZY=	8	Y_2^1 12=12.30

Obtain an asymptotically efficient estimate of 0 and its estimated standard error. **8+7**

3. **Suppose the,disturbanceterm in a multiple regression** framework **is correlated** with **the disturbance term in other regression equations**. What type **of estimation techniques would you suggest** to get consistent **estimates of the regression** coefficients when-

   (a) Variance-covariance matrix of the disturbance term is known,

   (b) Variance-covariance matrix is unknown. **10+5**

4. **Define Principal Components of a set of variables. How are they calculated ? What are the main uses of Principal Components ?** **5+5+5**

S. **Answer any *two* questions:** **10x2**

   (a) Explain the model for which **the generalised least squares estimation method is appropriate**. Derive **the generalised least squares estimator.**

   (b) How do you **use Principal Components for tackling the multicollinearity problem in the multivariate** econometrics model.

   (c) Write a short **note on Seemingly** Unrelated **Regressors.**

   (d) Distinguish between Pooled **data and Panel data.**

(Agricultural Economics-Hi)

[Marks : 50]

Answer Q. No. 1 and any **two questions** from the rest

1. Attempt any *six* questions from the following: 6x3

(1) Give one example each of disembodied and embodied technical changes in agricultural production.

(u') What is carry-over effect in agricultural production system ? Explain.

(iir) What is meant by the term `Storage returns'? **Illustrate.**

(iv) Define horizontal integration. Give an example.

(v) Calculate marketing efficiency of a farm whose value added output and input costs are its. 1200 and its. 300 respectively.

(vi) What is the main source of agricultural pollution? Suggest one policy to curb.

(vii) How does warehousing act as a price stabilizer in agricultural commodity market? Discuss.

(viii) Explain why risk and uncertainty are different concepts. Give illustration.

(ix) Mention one merit and one demerit of using Cobb-Douglas production function to measure production efficiency.

(x) What is marketing margin? Discuss its importance?

(xi) Clarify the concept of conglomeration.

(xii) Briefly discuss the risk attached to storage of agricultural communities.

2. (a) Define `mean preserving spread in price'. Explain its implication.

(b) Show that if a farmer's expected utility function is **concave in** price, increased uncertainty in teens of **mean preserving spread in** price will definitely make **the farmer** worse off.

(c) Consider the following equation of **mean preserving spread in** price $P\,r.\,[P,,\,-P] + P.$ Where the symbols carry **their usual meanings**. Show that **non-increasing absolute** risk aversion **will lead to a fall in farmer**'s output. 3+4+9

3. **(a) Discuss the advantages** of profit **function** approach over production function approach.

(b) Derive and **illustrate** the equation of a normalised profit function from a production function. 4+12

4. **(a) How is farm efficiency measured?**

(b) What are the difficulties in measuring farm efficiency? **6+10**

S. **(a) Examine the major concepts of farm income . Discuss the different factors affecting farm income.**

(b) Discuss the benefits of diversification of farming operation. **10+6**