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PG/IIIS/ECO/301(A&B)/22

M.A./M.Sc. 3rd Semester Examination, 2022

ECONOMICS

(Econometrics-I(Spl. Paper)/Agricultural Economics-I)

PAPER — ECO-301 (A & B)

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

PAPER — ECO-301(A)

(Econometrics-I (Special Paper))

GROUP—A

Answer any two questions : 2×2

- 1. With an illustration distinguish between partial and ortho-partial correlations.**

(Turn Over)

2. What is perfect multicollinearity ?
3. What do you mean by non-stochastic regressors ?
What is the main advantage of the assumption of non-stochastic regressors ?
4. State the main consequences of the violation of the zero-mean assumption of the disturbance term.

Answer any two questions :

4 × 2

5. What do you mean by Enhancement-Synergism (ES)? Why does it occur? Give a suitable illustration.
6. In a linear multiple regression model with two explanatory variables, explain the consequences of dropping one variable which is actually (a) relevant and (b) irrelevant. 2 + 2
7. Examine the view that in a linear multiple regression model with two explanatory variables,

changes in the sign of the estimated coefficient of an explanatory variable implies a dual role of the variable. Illustrate your answer.

8. Interpret the following multiple regression results based on 16 observations :

	Coefficients	Standard Error	t-Stat	P-value
Intercept	56945.04	7449.45	7.64	3.6666E-06
X1	-8.51	12.37	-0.69	0.5037
X2	0.04	0.01	3.27	0.0061

R Square	Adj.R Square	Standard Error	F-Stat	P-value
0.9685	0.9637	669.34	199.98	1.7270E-10

Answer any one question :

8 × 1

9. Explain with a suitable illustration the method of evaluating the relative importance of the explanatory variables in a linear regression model with two explanatory variables.
10. Interpret the following multiple regression results

(on two explanatory variables) in light of the two simple regression results.

	Coefficients	Standard Error	t-Stat	P-value
Intercept	26851.35	8883.53	3.02	9.80E-03
X1	24.08	10.43	2.31	3.80E-02
X5	0.12	0.16	0.74	4.75E-01

R Square	Adj. R Square	Standard Error	F	Significance-F
0.9449	0.9365	885.23	111.54	6.54E-09

	Coefficients	Standard Error	t-Stat	P-value
Intercept	33189.17	2129.19	15.59	3.06E-10
X1	31.60	2.08	15.17	4.39E-10

R Square	Adj. R Square	Standard Error	F-Stat	Significance-F
0.9426	0.9385	870.61	230.09	4.39E-10

	Coefficients	Standard Error	t-Stat	P-value
Intercept	8380.67	4422.43	1.90	7.89E-02
X5	0.48	0.04	12.90	3.69E-09

R Square	Adj. R Square	Standard Error	F-Stat	Significance-F
0.9224	0.9168	1012.98	166.30	3.69E-09

(5)

GROUP--B

Answer any two of the following questions : 2×2

11. Define likelihood function.
12. What do you mean by structural break ?
13. Write Perron's model of exogenous structural break.
14. Is the maximum likelihood estimator for σ^2 unbiased ?

Answer any two questions : 4×2

15. Point out the assumptions used in carrying out the Chow test.
16. Explain dummy variable trap.
17. Write a four variable regression model involving two dummy variables and their interaction terms. Interpret the coefficients of the dummy variables with the help of an example. 1 + 3

18. Show that the OLS estimators in a 2 variable CLRM are BLUE by pointing out the assumptions.

Answer any one question : 8×1

19. Derive the restricted maximum likelihood estimator of the slope parameter. Check whether it is an unbiased estimator or not ? $5 + 3$
20. Discuss the dummy variable approach in detecting structural instability of the regression model. Why it is advantageous over the Chow test ? $6 + 2$

PAPER – ECO-301(B)

(Agricultural Economics-I)

GROUP – A

Answer any two questions : 2×2

1. What is the possible effect of population growth on the process of commercialisation of agriculture ?

2. What is meant by temporal inaccessibility to the market ?
3. How is the farm household different from the farm enterprise ?
4. Define own rate of interest in the context of backward agriculture.

Answer any two questions :

4 × 2

5. How was the integrated farming system different from the commercialised system of agriculture ?
6. Explain the different kinds of risks that farmers usually face.
7. Are traditional practices of farming always practised to avoid risk at the cost of profitability ? Explain.
8. Explain the cash and kind account balance of a hypothetical peasant under pre-capitalist agrarian structure.

Answer any **one** of the following question : 8×1

9. Explain the features of a backward agriculture. In this context explain the concept of 'V' curve (derivation is not required). $4 + 4$
10. In analysing a peasant economy, explain the fallacy of neo-classical profit maximising exercise.

GROUP-B

Answer any **two** questions : 2×2

11. What do you mean by reservation utility ?
12. Explain the concept of potential risk ?
13. How is cost per worker defined in an interlinked rural market ?
14. What is meant by trigger and exit levels in weather based agricultural insurance ?

Answer any two questions :

4 × 2

15. Explain the yield based insurance system in agriculture.
16. Do you think weather based insurance scheme is better than other option in the countries like India ?
17. What is meant by isolated market in backward agriculture ?
18. Can situations like zero-interest rate, disguised unemployment be explained through market interlinkage ?

Answer any one question :

8 × 1

19. Show the importance of reservation utility in deciding the optimal contract of wage and interest rate in an interlinked transaction (assuming an interlinkage between labour and credit market).
 20. Critically discuss the issue of allowing FDI in retail agri-business from a developing country's perspective.
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