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PG/IIIS/ECO/301(A&B)/24

M.A./M. Sc. 3rd Semester Examination, 2024

ECONOMICS

PAPER – ECO-301 (A & B)

Full Marks : 50

Time : 2 hours

Answer all questions

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 of the following questions :

1. With an illustration define ortho-partial correlation. 2×2

(Turn Over)

2. State the main consequences of the violation of the zero-mean assumption of the disturbance term.
3. What is perfect multicollinearity ? Show that the dummy variable trap is a case of perfect multicollinearity.
4. What is the relation between t-statistic and R-square in a regression model ?

Answer any **two** of the following questions :

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

	Coefficients	Stand Err	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	Stand Err	F Stat	P-value
0.9685	0.9637	669.34	199.98	1.7270E-10

6. Show that the disturbance term in the simple linear regression of $e_{Y.2}$ on $e_{1.2}$ is same as that in the linear multiple regression of Y on X_1 and X_2 .
7. Compare and contrast adjusted R-square (Theil) and F-statistic as measures of goodness of fit in linear multiple regression model.
8. The values of R-square in the regression of Y on X_1 , Y on X_2 and Y on X_1 and X_2 are 0.50, 0.70 and 0.90 respectively. Evaluate the values of squared partial and ortho-partial correlations of these two explanatory variables.

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

9. Define adjusted R-square (Theil). What adjustment of R-square is actually done in adjusted R-square (Theil) ?

10. 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.

GROUP – B

Answer any **two** of the following questions :

2 × 2

11. Define likelihood function.
12. Write the assumptions required for estimating parameters in a two variable CLRM using maximum likelihood estimation method.
13. How do you test linear restriction in a K variable model ?
14. What is dummy variable trap ?

Answer any **two** of the following questions :

4 × 2

15. Derive the maximum likelihood estimator for error variance, σ^2 in case of a two variable CLRM.

16. Discuss the likelihood ratio test.
17. Show that the OLS estimator of the slope parameter for a two variable CLRM is BLUE.
18. Distinguish between R^2 and Adjusted R^2 .

Answer any **one** of the following question :

8 × 1

19. How do you use Chow test to detect structural instability in the regression model ? In this context, discuss the advantages of dummy variable approach over the Chow test. 6 + 2
20. Frame a multivariate regression model using dummy variables for a monthly and quarterly data set to capture the effect of seasonality. Interpret the result of both the dummy variable regression models with the help of suitable examples. 1 + 1 + 6

[Internal Assessment — 10 Marks]

PAPER – ECO-301(B)

(Agricultural Economics-I)

GROUP – A

Answer any **two** of the following questions :
 2×2

1. Write one supply-side and one demand-side factors which are responsible for the decline of the integrated farming system.
2. What are the three pillars of A-o-A ?
3. Write and explain the cash and the kind accounts of a farmer who is engaged in forced commerce.
4. What do you mean by temporal inaccessibility to the agricultural market ?

Answer any **two** of the following questions :
 4×2

5. What are the basic features of a pre-capitalist agrarian system ?

6. What are the policies that government should take to promote the commercialized agricultural system ?
7. What are the prime determining factors of the 'own rate of interest' ? Explain.
8. What are the arrangements that WTO has made regarding farm subsidies ?

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

9. Distinguish between integrated farming system and the commercialized farming system. How is population growth of a country related with the transition of that country from the integrated farming system to the commercialized farming system ? $6 + 2$
10. In the pre-capitalist framework, derive the expression of β (j) from the cash and the kind accounts of a farmer. Comment on its slope with respect to the class-size.

GROUP – B

Answer any **two** of the following questions :

11. Distinguish between the peasant farm management and the capitalist farm enterprise. 2×2
12. What are the reasons behind the emergence of the interlinked agricultural market ?
13. What is meant by allocative efficiency ?
14. Other than weather, which kinds of risk do the farmers usually face ?

Answer any **two** of the following questions :

15. Show how risk-averseness affects the efficiency of the peasants. 4×2
16. What is meant by trigger level and exit level in the agricultural insurance schemes ?
17. Determine subjective wage rate in a two dimensional income-leisure plane.

18. Briefly explain the two kinds of agricultural insurance schemes available in India.

Answer any **one** of the following question :

8 × 1

19. Show how a lender cum landlord reaches his equilibrium under interlinkage agreements.

20. Critically discuss how efficiency of farms is measured in neo-classical economics.

[Internal Assessment — 10 Marks]

