PG/IIIS/ECO/303(A&B)/24

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

ECONOMICS

PAPER – ECO-303 (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-303(A)

(*Econometrics*-III)

GROUP—A

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

1. Distinguish between CLRM and GLRM.

2. How does GLRM useful for prediction of future observations ?

3. Distinguish between CTHA and CCTA models.

4. Highlight a practical example where the Seemingly Unrelated Regression (SUR) model would be appropriate and explain why.

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

5. For heteroscedastic disturbance term prove that $P\Omega P' = 1$.

6. Derive the basic structure of the Error Components Model and explain its components. $2 + 2$

7. Write a short note on Generalized Method of Moments (GMM).

8. Define Seemingly Unrelated Regression (SUR) and explain its application in econometrics. Derive the structure of the SUR model and explain how it differs from OLS.

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

9. Explain the estimation process of parameters of CTHA model by GLS method.

10. State and define the summary statistics of multinomial logit model. Estimate and interpret the values of LR Chi-Square and McFadden's pseudo R-square when log likelihood of the null model is-2880 and log likelihood of fitted model is-2688. Interpret the coefficient of a dummy independent variable in a hypothetical multinomial logit model. $5 + 3 + 2$

GROUP–B

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

11. What is recursive form of simultaneous equation system ?

12. Write the order and rank conditions of identification in simultaneous equation system.

13. What is scree plot ?

14. What are the problems of PCA ?

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

15. Specify the logit model. State the procedure to estimate such model. How the marginal effects are computed in such model. $1 + 2 + 1$

16. Compare logit and probit models.

17. Suggest any two measures for examining 'goodness of fit' of binary choice models. $2 + 2$

18. Explain the method of Principal Component Analysis.

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

19. Explain the method of ILS using matrix notation. Show with a suitable example that ILS and 2SLS estimates are same for exactly identified equation. $4 + 4$

20. Discuss the method of 2SLS using a suitable example. Write the properties of 2SLS estimators. $6 + 2$

[Internal Assessment — 10 Marks]

PAPER — ECO-303(B)

(*Agricultural Economics-III*)

GROUP—A

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

1. Distinguish between factor-factor and product-product relationships.

2. How can you differentiate between speculation and hedging in agricultural products ?

3. Distinguish between relatively elastic and relatively inelastic demand curves. Which one does generally apply to agricultural goods ?
1 + 1

4. What is meant by the marketing efficiency of agricultural products ?

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

5. Write the forms of quadratic, CES, Spillman and transcendental production functions and derive the marginal productivities of inputs for these production functions.

6. What is price spread ? What are the different components of price spread ?

7. Write the different components of agricultural marketing infrastructure.

8. Explain any four measures for assessing the price volatility of agricultural products.

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

9. Elaborate Nerlove's agricultural supply response model.

10. Describe the models of Raj Krishna and T.N. Krishnan concerning the connection between price and the marketable surplus of agricultural products. $4 + 4$

GROUP–B

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

11. Why is farm management important ?

12. What are the major problems of farm management ?

13. Mention any two uses of operation research in agriculture ?

14. Define profit frontier ?

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

15. Discuss in brief the methodology of operation research.

16. Discuss the limitations of the operation research method in farm management.

17. What are the major consequences of presence of inefficiency in the production process ?

18. What is efficient unit isoquant ? Prove that "Economic Efficiency" is the product of "Technical Efficiency and Allocative Efficiency".

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

19. What are the major economic principles that are applied to farm management ? Discuss in brief any one economic principle that is applied to farm management. $2 + 6$

20. An agricultural farm has 430 units of land, 460 hours of labour and 420 units of capital available for cultivation. The farm wants to plant three crops : rice, wheat and potato. The profit per unit of rice is Rs. 3, for wheat, it is Rs. 2 and for potato, it is Rs. 5. However, there are certain constraints :

- 1 acre of rice requires 1 unit of land, 3 units of labour and 1 unit of capital.
- 1 acre of wheat requires 2 units of land and 2 units of labour.
- 1 acer of potato requires 1 unit of land and 4 units of capital.

Write down the problem in LPP format and solve it by using simplex method. 2 + 6

[Internal Assessment — 10 Marks]
