## M.A. PREVIOUS DEGREE (IMPROVEMENT/SUPPLEMENTARY) EXAMINATION, APRIL/MAY 2021

### (SDE)

### M.A. Economics

### Paper III—QUANTITATIVE METHODS FOR ECONOMIC ANALYSIS

### (1997 Admission onwards)

Time : Three Hours　　　　　　　　　　　　　　　　　　Maximum : 175 Marks

*Statistical Tables are allowed for the Examination.*

### Part A

*Answer any **nine** questions.*
*Each question carries 5 marks.*

1. Find the values of $x, y, z$ if the matrix $A = \begin{bmatrix} 0 & 2y & z \\ x & y & -z \\ x & -y & z \end{bmatrix}$ satisfy the equation.

2. Distinguish between symmetric matrix and skew symmetric matrix with an example.

3. Verify whether AB = BA for the matrices :

$$A = \begin{bmatrix} 2 & 1 & 0 \\ 1 & -1 & 2 \\ 0 & 1 & 3 \end{bmatrix} \text{ and } B = \begin{bmatrix} 1 & 2 & -1 \\ -2 & 0 & 1 \\ 1 & 1 & 2 \end{bmatrix}.$$

4. An airline agrees to charter planes for a group. The group needs at least 160 executive class seats and at least 300 economy class seats. The airline must use at least two of its model 314 planes which have 20 executive class seats and 30 economy class seats. The airline will also use some of its 535 models which have 20 executive seats 60 economy class seats. Each flight of model 314 plane costs Rs. 1,00,000 and each flight of a model 535 plane costs Rs. 1,50,000. How many of each type of plane should be used to minimize the flight cost ? Formulate this as a LPP.

5. Explain the merits and demerits of Linear Programming.

**Turn over**

6.  Explain the properties of '$t$' distribution.

7.  The divisional manager of a chain store believes that the average number of customers entering each of the five stores in his division per week is same. In a given week the store managers reports the following number of customers in their stores :

    3000, 2960, 3100, 2780, 3160

    Test the divisional Manager's belief at the 10 percent level of significance.

8.  A speaks truth in 80% of the cases and B in 90% of the cases. In what percentage of cases are they likely to : (i) Contradict each other in stating the same fact ; and (ii) Agree in stating the same fact ?

9.  A bag contains 38 tickets from 1 to 38. A ticket is drawn and then another ticket is drawn without replacement. Find the probability that both the tickets will show even numbers.

10. Explain Bayes' theorem.

11. Distinguish between sample distribution and sampling distribution.

12. What are the properties of Regression co-efficients ?

(9 × 5 = 45 marks)

## Part B

*Answer any* **seven** *questions.*
*Each question carries* 10 *marks.*

13. Explain the procedure to convert a primal problem into a dual with an example.

14. Distinguish between one tailed and two tailed test.

15. Solve the following LPP graphically :

    Minimise $Z = 30x + 20y$
    subject to $x + \quad y \leq 8$
    $\qquad x + 4y \leq 12$
    $\qquad 5x + 8y = 20$
    $\qquad\qquad x, y \geq 0.$

16. In a normal distribution 31% of items are under 45 and 8% are over 64. Find the Mean and Standard Deviation of the distribution.

17. Briefly explain the various steps involved in hypothesis testing.

18. Find the most likely production corresponding to a rainfall of 50 inches from the data given below :

| | Rainfall | Production |
|---|---|---|
| Average (Mean) | 40 Inches | 60 Quintals |
| Standard Deviation | 10 Inches | 20 Quintals |
| Co-efficient of Correlation ($r$) | 0.8 | |

19. The mean life time of a sample of 200 tube lights produced by a Company is found to be 3160 hours with standard deviation of 180 hours. Test the hypothesis that the mean lifetime of the tubes produced by the Company is 3200 hours.

20. Given the following data :

| Performance Evaluation ($X_1$) | 33 | 38 | 26 | 45 | 43 | 51 |
|---|---|---|---|---|---|---|
| Aptitude Test Score ($X_2$) | 79 | 92 | 74 | 74 | 86 | 102 |
| Prior Experience ($X_3$) ... | 10 | 16 | 9 | 14 | 12 | 15 |

   (a) Develop the estimating equation best describing these data.

   (b) If an employee scored 88 on the aptitude test and had a prior experience of 7 years, what performance evaluation would be expected.

21. What are the conditions for the application of chi-square test ?

22. Distinguish between partial and multiple correlation.

(7 × 10 = 70 marks)

## Part C

*Answer any* **three** *questions.*
*Each question carries* 20 *marks.*

23. Solve the following linear equations by using Cramer's rule :

$$x + y - z + 2 = 0$$
$$x - 2y + z - 3 = 0$$
$$2x - y - 3z + 1 = 0.$$

**Turn over**

24. Find Pearsonian co-efficient of correlation from the data given below :

| Wages | 110 | 111 | 113 | 112 | 114 | 109 | 107 | 108 | 106 | 106 |
|---|---|---|---|---|---|---|---|---|---|---|
| Cost of Living ... | 108 | 109 | 109 | 107 | 105 | 12 | 105 | 104 | 100 | 101 |

25. From the following data obtain two regression equations : (Rupees in Lakhs)

| Sales | 81 | 87 | 98 | 111 | 57 | 114 | 41 | 63 | 91 | 47 |
|---|---|---|---|---|---|---|---|---|---|---|
| Purchase | 61 | 65 | 59 | 87 | 60 | 81 | 29 | 51 | 70 | 37 |

26. Define Binomial distribution. Bring out the characteristics and uses of Binomial distribution.

27. A College bought a total of 1000 colour Television sets. Three different brands were purchased, and their repair records were kept for each set's operation. The data is given below :

|  | Number of Repairs | | | |
|---|---|---|---|---|
|  | 0 | 1 | 2 or More | Total |
| Brand A | 286 | 140 | 74 | 500 |
| Brand B | 180 | 134 | 86 | 400 |
| Brand C | 34 | 26 | 40 | 100 |
| Total | 500 | 300 | 200 | 1000 |

Is there any relationship between brand and number of repairs ?

28. Solve for $x, y$ and $z$ using matrix inversion method.

$$2x + 4y - z = 15$$
$$x - 3y + 2z = -5$$
$$6x + 5y + z = 28.$$

(3 × 20 = 60 marks)

## M.A. PREVIOUS DEGREE (IMPROVEMENT/SUPPLEMENTARY) EXAMINATION, APRIL/MAY 2021

### (SDE)

### M.A. Economics

### Paper II—DEVELOPMENT ISSUES OF INDIAN ECONOMY

#### (1997 Admission onwards)

Time : Three Hours                  Maximum : 175 Marks

### Part A

*Answer any* **nine** *questions not exceeding one page.*
*Each question carries 5 marks.*

1. Explain the meaning of unemployment and its different types.

2. What are the basic features of Indian Planning ?

3. Examine the pattern of external migration from India.

4. Explain A.K.Sen's approach to poverty.

5. Examine agricultural performance in India since independence.

6. Bring out the ambiguities in the estimation of poverty in India.

7. Critically examine the irrigation status in India.

8. Describe the Industrial policy of 1991.

9. Examine the occupational structure of Kerala since the formation.

10. 'Population growth as a retarding factor to economic development'-Discuss.

11. Describe the lessons from the green revolution in India.

12. Explain the concept of deficit financing and its importance.

(9 × 5 = 45 marks)

### Part B

*Answer any* **seven** *the questions not exceeding two pages.*
*Each question carries 10 marks.*

13. Explain the impact of foreign aid on India's economic development.

14. Discuss the public distribution system and its impact on poverty.

**Turn over**

15. Discuss the Kerala Model of Development.

16. Examine the co-operative farming in India.

17. Explain the progress of human development in India.

18. Evaluate the performance of the public sector enterprises in India.

19. Discuss the current status of India's Balance of Payment.

20. Discuss the agricultural productivity in India.

21. Examine the trend of expenditure of the central government.

22. What are the major requisites of sustainable development ?

(7 × 10 = 70 marks )

## Part C

*Answer any* **three** *questions.*
*Each question carries 20 marks.*

23. Critically evaluate the Economic Reforms in India.

24. Discuss the problems of capital account deficits in India.

25. Explain the role of WTO on Indian economy.

26. Discuss the co-operative movement in India.

27. Explain the International Capital Movements. What are the factors influencing it ?

(3 × 20 = 60 marks )

# M.A. (PREVIOUS) [IMPROVEMENT/SUPPLEMENTARY] DEGREE EXAMINATION, APRIL/MAY 2021

(SDE)

M.A. Economics

Paper I—MICROECONOMIC THEORY

(1997 Admission onwards)

Time : Three Hours                            Maximum : 175 Marks

## Part A

*Answer any* **nine** *questions.*
*Each question carries 5 marks.*
*Each answer should not exceed* **one** *page.*

1. Give brief account on Friedman-Savage hypothesis of consumer behavior.

2. What is meant by fixed co-efficient production function ?

3. What is an economic model ? What are its uses ?

4. Explain kinked demand model of oligopoly market.

5. Briefly describe the full-cost pricing principle.

6. Differentiate the embodied and disembodied technical change.

7. Give an account of tatonnment process.

8. Write a note on the value judgement in welfare economics.

9. Explain the compensation principle of welfare economics.

10. What are the conditions of pareto optimality ?

11. Explain Bernoulli Hypothesis.

12. Explain Bertrand model of duopoly.

(9 × 5 = 45 marks)

**Turn over**

## Part B

*Answer any* **seven** *questions.*
*Each question carries* 10 *marks.*
*Each answer should not exceed* **two pages.**

13. Discuss the Linear Expenditure System (LES).

14. Explain the Input-Output analysis.

15. Describe the oligopoly model with non-price competition.

16. Examine the Bain's Limit Pricing Model with suitable diagram.

17. Distinguish between the general equilibrium and partial equilibrium with diagram.

18. Write a note on Sraffa's critique of Neo-classical Theory of capital.

19. Explain social welfare function.

20. What are the goals of the firm in the Behavioral Theory.

21. Describe the critique of the general equilibrium theory.

22. Illustrate the behavioral model of Cyert and March.

(7 × 10 = 70 marks)

## Part C

*Answer any* **three** *questions.*
*Each question carries* 20 *marks.*

23. Critically examine the linear programming model of production.

24. Explain Williamson's Managerial Discretion Model.

25. Explain the Revealed Preference Theory of consumer behavior.

26. Describe the meaning of equilibrium and different approach of the general equilibrium with suitable diagram.

27. Explain the critique of the neo-classical theory under theory of pricing.

(3 × 20 = 60 marks)