



24027782

QP CODE: 24027782

Reg No :

Name :

**B.A DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE
EXAMINATIONS, OCTOBER 2024**

Third Semester

B.A Economics Model I

**COMPLEMENTARY COURSE - EC3CMT03 - MATHEMATICS FOR ECONOMIC
ANALYSIS-I**

2017 Admission Onwards

9DBAE420

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. Define matrix along with an example.

2. What is logarithmic function?

3. Define Co-factor of an element.

4. Find rank of a matrix

$$\begin{bmatrix} 1 & -12 & 3 \\ 2 & 2 & 2 \\ 1 & 3 & 3 \end{bmatrix}$$

5. Define Constants.

6. Give any 2 examples for quadratic equations.

7. If $y=e^{3x}$ find y_2 .

8. Integrate $1/\sqrt{x}$.

9. Define final demand.

10. Write the specimen of input-output table.

11. What are the limitations of graphic method of solving LPP?

12. Duality.





(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Explain the rows and columns in a matrix with example.
14. What is a function?
15. Solve the following equations using matrices
 $2x-3y=6$
 $3x-6y=9$
16. Find derivatives of the following function. $z=2y+8$, $y=4x^2$
17. Find marginal cost of the total cost function. $C=2x^3-10x^2+8x+500$, when $x=30$ find the value of x .
18. Explain static and dynamic model.
19. Compare closed and open model in input -output analysis
20. Explain the various steps in formulating a mathematical model to LPP.
21. Solve the problem graphically $\text{Max } Z=22x_1+18x_2$
S.t $3x_1+2x_2 \leq 48$
 $x_1+x_2 \leq 20$
 $x_1 \geq 0$, $x_2 \geq 0$

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Using Cramer's Rule. $x+y+z=7$, $x+2y+3z=16$ and $x+3y+4z=22$.
23. Demand function of two competitive commodities are given by $x=11-2p_1-2p_2$ and $y=16-2p_1-3p_2$ suppose the average cost of production of the two products are Rs.3 and Rs.1 respectively. Determine the quantities that maximise the profit of the monopolist and also find the maximum profit.
24. Explain the use of Hawkin Simon condition for proving economic viability.
25. Explain the uses of linear programming and also bring out its limitations.

(2×15=30)

