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Reg. No. : .....

Name : .....

First Semester M.A. Degree Examination, February 2019

Branch : ECONOMICS

EC 214 – Quantitative Methods

(2013-2017 Admissions)

Time : 3 Hours Max. Marks : 75

PART – A

Answer **all** questions from this Part. **Each** question carries **one** mark.

1. What is a diagonal matrix ?
2. Identify the logarithmic linear function.
3. What is saddle point ?
4. Define the consumer's surplus.
5. Differentiate e^{4x}.
6. What is definite integral ?
7. Write a note on inflexion point.
8. What is Shadow price ?
9. Define the optimal solution.
10. What is dominant strategy ? **(10×1=10 Marks)**

PART – B

Answer **any seven** questions. **Each** carries **5** marks.

11. Write a note on the simplex method in linear programming problem.
12. Find the total revenue and demand function if $MR = 4x - 3x^2$.
13. What is integration and discuss the methods of integration ?
14. Explain the duality and dual theorems.
15. The Total Revenue is $R = 35 - x^2$, find the output (x) when total revenue is maximum.

P.T.O.

16. Discuss the Static and Dynamic model of Leontief.
17. Discuss the uses of matrices.
18. Find the rank of $\begin{bmatrix} 5 & 2 & 1 \\ 0 & 1 & 3 \\ 2 & 1 & 0 \end{bmatrix}$
19. Optimize $y = 8x^2 + 100x - 10y$.
20. Explain the cobweb model.

(7×5=35 Marks)

PART – C

Answer **any three** questions. **Each** carries **10** marks.

21. a) What is linear programming and mention its advantages ?

    b) Solve using graphical method of LPP.

    Maximise $Z = 2X_1 + 5X_2$

    Subject to constraints

    $X_1 + 4X_2 \leq 24$

    $X_1 + X_2 \leq 9$

    and $X_1, X_2 \geq 0$.

22. Explain the following with example :

    a) Differential equations

    b) Difference equations

    c) Dynamic stability

    d) Lagged income ditermination model.

23. Solve the following equation with Cramer's rule

    $3X + 2Y + Z = 6, \quad 2x - 3Y + 3Z = 2, X + Y + Z = 3.$

24. Briefly explain the game theory.
25. How does the of Lagrange's multiplier method apply in economics ?

(3×10=30 Marks)

3x + 2y + z = 6