SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.
M.A. Economics - END SEMESTER EXAMINATIONS APRIL - 2024
SEMESTER - II
22PECCT2006 - Mathematical Methods for Economics

Total Duration : 2 Hrs. 30 Mins. Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks)

1. Solve the following pairs of simultaneous equation.
   3x+2y=13
   2x-3y=12
2. What are the various rules of differentiation?
3. Find the third Derivative of Y = $5x^4 + 2x^3$.
4. Find the Elasticity of Demand, if the demand function Q = 200 - 4P.
5. Write a brief application of Partial Derivatives in Economics.
6. Find the Total derivative of V=$3x^2 + xy - 2y^3$.
7. Find the inverse of A=$\begin{bmatrix} 1 & 4 & 3 \\ 4 & 2 & 1 \\ 3 & 2 & 2 \end{bmatrix}$.
8. Write a brief application of Matrix Algebra.

Section C

I - Answer any **TWO** questions $(2 \times 10 = 20$ Marks)

9. In an economy of two industries A and B, the data in millions of rupees is given below:

		Buying sector		Final Demand	Total Output
		A	B		
Selling sector	A	12	6	6	24
	B	6	3	9	18

   Determine the total output, if the final demand changes to 18 for A and 36 for B.
10. Investigate the maximum or minimum value of the following function.
    Z = $3x^4$ - $10x^3$ + $6x^2$ + 5.

Contd...

11. Find the first and second order partial derivatives of the following function. U=$x^2y^2+x^5+y^6$.
12. Find the production function U=$3x^2$+9x+8, Calculate the marginal production function.

II - Compulsory question $(1 \times 10 = 10$ Marks)

13. Solve the equation by using Cramer's Rule

    2x-3y+4z=5

    x+2y-3z=8

    x-y-z=1

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