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.
B.A. Economics - END SEMESTER EXAMINATIONS - NOV'2024
SEMESTER - V
20UECET5ME1 - Mathematics for Economists

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

Section B

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

1. State the properties of a determinant.
2. What is Input-Output Analysis? Explain its types.
3. Find out the derivatives of higher order, if $y = 4x^5 + 3x + 5$.
4. Find the maxima and minima of the following function $y = x^3 - 3x^2 + 7$.
5. Given the Total cost function, $C = 50 - 2q + 7q^2 + q^3$, Find the Marginal cost when Q=5.
6. If $A = \begin{bmatrix} 1 & 2 & -3 \\ 4 & -5 & 6 \\ 7 & 8 & -9 \end{bmatrix}$, and $B = \begin{bmatrix} 4 & -3 & 2 \\ 1 & 6 & -4 \\ -7 & 1 & 3 \end{bmatrix}$. Show that $A + B = B + A$.
7. What is Homogeneous function? State its properties.
8. Find out the Marginal Revenue for the Demand function $P = 30 - 2x^2$.

Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks)

9. Solve the Equations by Cramer's Rule

   $2x - 3y + 4z = 5$
   $x + 2y - 3z = 8$
   $x - y - z = 1$

10. In a economy of two industries A and B , the data is given below in million of rupees.

		Purchase by		Final Demand	Total Output
		A	B		
Sales by	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.

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11. Define is Differentiation and explain the various rules of Differentiation.
12. Define Maxima and Minima. Explain the conditions for two independent variables.
13. Given the following Revenue (R) and cost (C) functions for a firm $R= R = 20q - q^2$ and $C = q^2 + 8q + 2$, find the equilibrium level of output, price, total revenue, total cost and profit.

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