B.A. DEGREE EXAMINATION,ODD SEMESTER 2020
III Year V Semester
Mathematics for Economists

Max.marks :25

Answer any **FIVE** questions $(5 \times 5 = 25)$ Marks

1. Prove that $\begin{vmatrix} a+b+2c & a & b \\ c & b+c+2a & b \\ c & a & c+a+2b \end{vmatrix} = 2(a+b+c)^3$
2. Given A $= \begin{bmatrix} 0.4 & 0.1 \\ 0.7 & 0.6 \end{bmatrix}$ and the final demand is 50 and 100, Find the gross output.
3. If xy=a+bx then show that $x\frac{d^2y}{dx^2} + 2\frac{dy}{dx} = 0$
4. Discuss about Total, Average and Marginal cost curves and Revenue curves.
5. Discuss the application of partial derivative in Economics.
6. Let A $= \begin{bmatrix} 2 & 4 \\ 3 & 2 \end{bmatrix}$ and B $= \begin{bmatrix} 1 & 0 \\ 3 & 2 \end{bmatrix}$ verify $(A+B)^T = A^T + B^T$ where A^T is transpose of A, B^T is the transpose of B.
7. Find the maximum and minimum value of the function $y = x^3 - 3x + 1$.