S.NO. 472 BATCH: 87 – 2016 Reg. No.

END OF SEMESTER EXAMINATIONS, APR/MAY - 2018
MATHEMATICAL METHODS
SUBJECT CODE: 12UAEC05

MAJOR : B.A (ECONOMICS) SEMESTER : III
TIME : 3 HOURS MAX. MARKS : 75

SECTION – A (10 X 1 = 10)

Answer ALL the questions:

1. Find the Quadratic equation if its roots are -2 and 3.
2. Define circle.
3. Find $\frac{dy}{dx}$ *if* $y = e^{-3x}$.
4. State the conditions for a function y = f(x) to attain its maximum.
5. Give the meaning of marginal utility function.
6. Define Income elasticity of demand.
7. Given that $A = \begin{pmatrix} 2 & 3 \\ -1 & 0 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 3 \\ 0 & -2 \end{pmatrix}$ find A+2B.
8. What do you understand by Scalar Matrix?
9. Find A^{-1} if $A = \begin{pmatrix} 2 & 3 \\ 4 & 2 \end{pmatrix}$
10. What is the order of AB if $A = (1 \ \ 0 \ \ 5)$ and $B = \begin{pmatrix} -1 \\ 0 \\ 3 \end{pmatrix}$.

SECTION – B (5 X 4 = 20)

Answer any FIVE questions:

11. A Straight line is drawn through the point (3,4) parallel to the line x + 2y = 5 Determine its equation.
12. Solve the following Simultaneous equations using Algebraic method:

$$\frac{1}{x} + \frac{4}{y} = 5$$

and

$$\frac{6}{x} + \frac{5}{y} = 11$$

13. Find all the partial derivatives of second order for the function $Z = x^3 e^{2y}$
14. Determine the maxima or the minima of the function $Y = x^2 - 4x - 5$,
15. If the demand law is $X = \frac{20}{p+1}$, find the price elasticity of demand at p = 3
16. Determine the rank of the matrix $A = \begin{pmatrix} 6 & 0 & 2 & 2 \\ 3 & 1 & 0 & 2 \\ 4 & 1 & 2 & 2 \\ 2 & 2 & 2 & 2 \end{pmatrix}$ . .

...2...