K20U 0012

Reg. No. : .....

Name : .....

VI Semester B.A. Degree (CBCSS – Reg./Supple./Improv.) Examination, April 2020
CORE COURSE IN ECONOMICS/DEVELOPMENT ECONOMICS
6B12 ECO : Basic Tools for Economic Analysis – II
(2014 Admission Onwards)

Time : 3 Hours Max. Marks : 40

PART – A

Answer **all** questions. (**Each** question carries **1** mark)

1. Define Marginal Cost.
2. What is Splicing ?
3. What is a Scatter Diagram ?
4. Define Square Matrix. **(4×1=4)**

PART – B

Answer **any 7** questions. (**Each** question carries **2** marks).

5. If $A=\begin{bmatrix}2 & 3\\ 1 & 2\end{bmatrix}$ and $B=\begin{bmatrix}4 & 2\\ 1 & 3\end{bmatrix}$. Find 6A – 3B.
6. Find the Derivative of x^3/e^x.
7. Differentiate between a Diagonal Matrix and a Scalar matrix and give an example for each.
8. Find the elasticity of demand for the demand function $q=\frac{27}{p^3}$.
9. Define Index Number. What are the limitations in using index numbers ?
10. Draw the relationship between the correlation coefficient and regression coefficient.
11. Find the value of the determinant $A=\begin{bmatrix}3 & 2 & 8\\ 2 & 1 & 0\\ 1 & 3 & 2\end{bmatrix}$.

P.T.O.

12. What is base shifting ? Give the formula for shifting the base.
13. Explain the product and quotient rule of differentiation.
14. What is linear regression ? How it differs from nonlinear regression ?

(7×2=14)

PART – C

Answer **any 4** questions. (**Each** question carries **3** marks).

15. If $A=\begin{bmatrix}1 & 2 & 2\\ 2 & 1 & 2\\ 2 & 2 & 1\end{bmatrix}$, show that $A^2 - 4A - 5I = 0$ where I is the identity matrix of order 3 × 3.
16. Prove that $X^2\frac{d^2y}{dx^2} - X\frac{dy}{dx} = 2x^2$ if $y = x^2 \log x$.
17. Explain marginal cost, marginal revenue, marginal productivity and marginal utility.
18. Explain the OLS method of estimation.
19. Why is Fisher's Index number considered the ideal Index number.
20. Explain the different types of correlation.

(4×3=12)

PART – D

Answer **any 2** questions. (**Each** question carries **5** marks).

21. Solve the following equations using Matrix Inversion Method.
    $2x - 3y = 3$
    $4x - y = 11$
22. The price p unit at which a company can sell that it produces is given by the function $P(x) = 300 - 4x$. The cost function $C(x) = 5400 + 28x$, where x is the number of units produced. Find x so that profit is maximum.
23. Explain the different methods for measuring trend.
24. Explain the various types of Index numbers.

(2×5=10)