M 8274

Reg. No. : .....

Name : .....

VI Semester B.A. Degree (CCSS – Reg./Supple./Improv.) Examination, May 2015
(2012 Admn.)
CORE COURSE IN ECONOMICS/DEVELOPMENT ECONOMICS
6B12 ECO : Basic Tools for Economic Analysis – II

Time : 3 Hours Max. Weightage : 30

PART – A

Choose the correct answer.

I. 1) A matrix obtained from any given matrix A by interchanging its rows and columns are called

a) Symmetric b) Skew symmetric

c) Transpose d) Inverse

2) A square matrix in which all the elements except those in leading diagonal are zero is called _____

a) Diagonal matrix b) Zero matrix

c) Unit matrix d) Triangular matrix

3) When $TR = 100x - x^2$, the MR is _____

a) 100 b) $-2x$ c) $100 - 2x$ d) $-x^2$

4) Mathematical measure of the average relationship between two or more variables in terms of original units of data is called

a) Regression b) Correlation

c) Prediction d) None of these **(Weightage 1)**

II. 5) If MR is 7 and the elasticity of demand is 2, then AR is

a) 7 b) 14 c) $\frac{14}{13}$ d) $\frac{7}{2}$

6) Profit is maximum when

a) $\frac{dp}{dx} = 0$ b) $\frac{d^2p}{dx^2}$ is negative

c) Both d) Any one

P.T.O.

7) When data are arranged in chronological order it is called
a) Cross section b) Pooled c) Time series d) Panel

8) $\frac{d}{dx}(a \log x)$ is

a) $\frac{\log x}{a}$ b) $a \times 2(\log x)^2$

c) $\frac{a}{x} + \log x$ d) $\frac{a}{x}$

(Weightage 1)

PART – B

Short answer questions. Answer **any 10 each** question carries **1** weightage.

9. Define skew symmetric matrix.

10. Distinguish between idempotent and nil potent matrix.

11. When two matrices will be equal ?

12. Define the condition for maximum of a function.

13. Define the term limit of a function.

14. What does coefficient of determination indicate ?

15. Find the regression coefficient of y on x if $2x + 4y - 5 = 0$ is the equation of y on x.

16. Examine whether $u = 3x^2 + 2xy + y^2$ satisfies Euler's theorem.

17. For the production function $16y^2 - y + 2(k-4)^2 + 4(L-5)^2 - 80 = 0$, find marginal productivities.

18. Index numbers.

19. In a perfect competition, the demand curve of a commodity. $D = 19 - 5p$ and supply curve is $S = 5p - 1$. Find equilibrium price.

20. Find the value of $\begin{vmatrix} 1 & 5 & 2 \\ 3 & 1 & 2 \\ 6 & 2 & 5 \end{vmatrix}$.

(Weightage 10×1=10)

PART – C

Short Essay. Answer **any 5** questions.

21. Examine whether matrix multiplication is commutative or not.

22. Evaluate $\lim_{x \to 3} \left(\frac{x^3 - 27}{x^2 - 9} \right)$.

23. What is the use of differentiation in economics ?

24. Find the derivative of $y = \sqrt{3x^2 + 4x + 5}$.

25. What are the properties of determinants ?

26. What are the uses of consume price index ?

27. Distinguish between correlation and regression. **(Weightage 5×2=10)**

PART – D

Long Essay. Answer **any 2** questions.

28. Using 2008 as the origin obtain a straight line trend equation by the method of least squares :

Year :	2005	2006	2007	2008	2009	2010	2011
Values :	140	144	160	152	168	176	180

29. Solve the following equations using Crammer's rule.

    $3x + y + z = 8$, $x + y + z = 6$, $2x + y - z = 1$

30. Find the point where the utility function $u = 48 - (x - 5)^2 - 3(y - 4)^2$ will have maximum or minimum value subject to the condition $x + 3y - 9 = 0$.

31. Explain about the problems in the construction of index numbers and its uses.

(Weightage 2×4=8)
