



K16U 0010

Reg. No. : .....

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Name : .....

VI Semester B.A. Degree (CCSS – Reg./Supple./Improv.)  
Examination, May 2016  
CORE COURSE IN ECONOMICS/DEVELOPMENT ECONOMICS  
6B12 ECO : Basic Tools for Economic Analysis – II  
(2012 Admn. Onwards)

Time : 3 Hours

Max. Weightage : 30

PART – A

Choose the correct answer.

- I. 1) The dimension of the matrix showing its number of rows and columns is  
a) order                      b) trace                      c) determinant                      d) none of these
- 2) A matrix having only one row is called  
a) column matrix                      b) row matrix  
c) unit matrix                      d) zero matrix
- 3) Which of the following is an ideal index number ?  
a) Marshall-Edgeworth                      b) Laspeyers  
c) Paasches                      d) Fishers
- 4)  $\lim_{x \rightarrow 2} (x^3 + 2x + 1)$  is  
a) 13                      b) 11                      c) 14                      d) 12                      (Weightage 1)
- II. 5)  $\frac{d}{dx}(3\sqrt{x})$  is  
a)  $\frac{3}{\sqrt{x}}$                       b)  $\frac{3}{2}x^{\frac{3}{2}}$                       c)  $\frac{3}{2\sqrt{x}}$                       d)  $6\sqrt{x}$



6)  $\begin{vmatrix} 0 & 12 \\ 3 & 3 \end{vmatrix}$  is

- a) 18                      b) 6                      c) 26                      d) -26

7)  $\int_1^3 2x \, dx$  is

- a) 8                      b) 6                      c) 5                      d) -8

8) When  $r = 1$ , the two lines are

- a) coincide                      b) mutually perpendicular  
c) either a) or b)                      d) neither a) nor b)

**(Weightage 1)**

### PART - B

Short answers. Answer **any ten** questions.

- 9) Define homogeneous function.
- 10) What do you mean by splicing ?
- 11) Define the term continuity.
- 12) Explain the concept of orthogonal matrix.
- 13) Find the regression coefficient of  $y$  on  $x$ . If  $2x + 4y - 5 = 0$  is the equation of  $y$  on  $x$ .
- 14) Define triangular matrix.
- 15) What does coefficient of determination indicate ?
- 16) Explain the concept of base year.
- 17) Euler's theorem.
- 18) Define maximum value of a function.
- 19) Show that matrix multiplication is not commutative.
- 20) If cost function of a firm is  $C = x(x^2 - 2)$ , find marginal cost when production is 2 units.

**(10×1=10)**



PART - C

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

21) Find the derivative of  $x^{\log x}$ .

22) Show that  $u = 3x^2 + 2xy + y^2$  is a homogeneous function.

23) Evaluate  $\lim_{x \rightarrow 4} \frac{x^2 - 4^2}{x - 4}$ .

24) The supply and demand curves for a commodity are  $q_s = p - 1$  and  $q_d = \frac{12}{p}$ , find the equilibrium price.

25) Find the value of  $\begin{vmatrix} 5 & 7 & 2 \\ 2 & 3 & 1 \\ 4 & 6 & 2 \end{vmatrix}$ .

26) If  $A = \begin{bmatrix} 2 & 3 & 4 \\ 5 & 7 & 9 \\ -2 & 1 & 1 \end{bmatrix}$  and  $B = \begin{bmatrix} 4 & 0 & 5 \\ 1 & 2 & 0 \\ 0 & 3 & 1 \end{bmatrix}$  verify that  $(AB)^T = B^T A^T$ .

27) Explain about different kinds of correlation.

(5x2=10)

PART - D

Long essay. Answer **any 2** questions.

28) Explain the components and importance of Time Series Analysis.

29) Maximise utility function  $u = 4xy - y^2$  subject to the constraint  $2x + y - 6 = 0$ .

30) Solve the following equation using Cramer's rule.

$$4x - 9y + 7z = 11, 2x - y - z + 3 = 0, x + 3y + z = 20.$$

31) Explain about the steps in the construction of consumer price index number.

(2x4=8)