



Reg. No. : .....

Name : .....

**VI Semester B.A. Degree (Private Registration) Regular  
Examination, April 2023  
(2020 Admission)  
CORE COURSE IN ECONOMICS  
6B12ECO : Basic Tools for Economic Analysis – II**

Time : 3 Hours

Max. Marks : 40

## PART – A

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

1. What is splicing ?
2. Define minors.
3. Conceptualise partial differentiation.
4. What is optimisation ?
5. What is meant by simple, partial and multiple correlations ?
6. Give some examples of index numbers.

(1×6=6)

## PART – B

(Answer any six questions. Each question carries 2 marks.)

7. Explain Simple Linear Regression Analysis.
8. Examine the method of moving averages.
9. Given utility function,  $U = xy + 3x + 4y$ , find the marginal utilities of good x and y.
10. If  $A = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 2 \\ -1 & 0 & 3 \end{bmatrix}$ , find 5A.
11. Find  $\lim_{x \rightarrow 2} (x^4 + 2x)$ .
12. Explain point of inflection.
13. Write a note on the time reversal test.
14. Why index numbers are called 'Economic Barometers' ?

(2×6=12)

P.T.O.



## PART – C

(Answer any four questions. Each question carries 3 marks.)

15. Explain the rules of differentiation.
16. Write a note on consumer price index numbers.
17. Fit a saving function for the following function using OLS method.  
Income : 10 9 11 8 12  
Saving : 2 3 7 8 10

18. If  $f(x) = \frac{x^3 - 2x^2 - x + 2}{x^2 - 3x + 2}$ , examine the continuity at  $x = 1$  and  $x = 2$ .

19. Explain the inverse of a matrix and its properties.

20. Calculate Karl Pearson's correlation coefficient for the following data :

Marks in English :	7	8	9	6	5
Marks in Maths :	8	6	7	9	10

(3×4=12)

## PART – D

(Answer any two questions. Each question carries 5 marks.)

21. Calculate Fischer's ideal index number for the following data :

Commodity	Price		Quantity	
	Base Year	Current Year	Base Year	Current Year
A	6	10	500	56
B	2	2	100	120
C	4	6	60	60
D	10	12	50	24
E	8	12	40	36

22. What is correlation ? Explain different degrees of correlation coefficient.

23. Determine the maxima and minima of  $4x^3 + 9x^2 - 12x + 13$ .

24. Using Cramer's Rule solve the following system of equations.

$$\begin{aligned} 2x + 3y - z &= 9 \\ x + y + z &= 9 \\ 3x - y - z &= -1. \end{aligned}$$

(5×2=10)