

QP Code: D133791		Total Pages: 2	Name:
			Register No.
THIRD SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2025			
(CUFYUGP)			
ECO3CJ201/ECO2CJ101 - Analytical Tools for Economics – I			
2024 Admission onwards			
Maximum Time :2 Hours			Maximum Marks :70
Section A			
All Questions can be answered. Each Question carries 3 marks (Ceiling : 24 Marks)			
1	Integration by substitution		
2	Difference between minor and cofactor of a matrix		
3	Partial differentiation		
4	Steps to calculate the Area Under a Curve		
5	Applications of matrix algebra in Economics		
6	Marginal concepts related to economic functions and elasticity		
7	Integration by parts		
8	Limits and continuity of functions		
9	Elementary types of functions		
10	If $A = \{1, 2\}$ and $B = \{3, 4, 5\}$, find the Cartesian product of A and B		
Section B			
All Questions can be answered. Each Question carries 6 marks (Ceiling : 36 Marks)			
11	Explain the Mean Value Theorem for Integrals		
12	Explain applications of functions in Economics		
13	Define determinants. State and prove the properties of determinants		
14	Differentiate between derivatives of implicit functions and derivatives of inverse functions. Give examples		
15	Solve the following equations using Cramer's rule $5x - 2y + 3z = 16$ $2x + 3y - 5z = 2$ $4x - 5y + 6z = 7$		
16	Explain union and intersection of set operations. If $A = \{1, 2, 3, 4, 5\}$ and $B = \{4, 5, 6, 7, 8\}$ find $A \cup B$ and $A \cap B$		
17	Explain various types of matrix operations		
666930	Explain quadratic function. Solve $2x^2 - x - 1 = 0$.		

Section C	
Answer any ONE .Each Question carries 10 marks (1x10=10 Marks)	
19	Explain meaning and rules of derivatives. Differentiate $y = x^3 (4 - x)^{1/2}$.
20	What is meant by inverse of a matrix? Solve the following equations using inverse method $2x - 3y + 5z = 11$ $5x + 2y - 7z = -12$ $-4x + 3y + z = 5$