BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION MO/2023)

CLASS: IMsc **SEMESTER : I**
BRANCH: QEDS **SESSION : MO/2023**

SUBJECT: ED105 INTRODUCTION TO ECONOMICS WITH ESSENTIAL MATHEMATICS
TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4*. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates**

		MARKS	CO	BL
Q.1	a. What are the three choice problems that any economic agent may face? b. Can you fulfil all your unlimited wants? What are the restraining concerns? c. If you become the PM of India, would you be more interested in your economic advisers' positive views or their normative views? Why?	[1.5] [1.5] [2]	3	
Q.2	a. Classify the following as a microeconomic or macroeconomic concern: a. your family's decision about how much income to save monthly b. the effect of NDA government's implementation of demonitisation c. the impact of higher national saving on economic growth d. an IT firm's decision about whether to employ you from CQEDS or your friend from BTech CSC e. the relationship between the inflation rate and changes in the quantity of money supply by RBI b. How can we measure average rate of economic growth? If India grew at 8.5% in year 2022 and the average rate of growth is estimated to be 4%, then what is the expected growth in GDP that will be observed in 5 years' time from now?	[2.5] [2.5]	4	
Q.3	a. How would you measure growth rate of a country? b. Amartya Sen has said that "economic growth is one aspect of the process of economic development". Explain what he meant. What then are the others aspects that are necessary to say a country is not only growing but developing?	[2+3]	3	
Q.4	a. Solve the following system of linear equations using Cramer's Rule: $2x_2 + 4x_3 = 2$ $2x_1 + 4x_2 + 2x_3 = 3$ $3x_1 + 3x_2 + x_3 = 1$ b. Suppose that the system given in 4(a) is written as $Ax = b$, then find the inverse of matrix A and use this inverse to solve the system.	[3] [2]	1 1	
Q.5	a. Does the equation $x^2 - y^2 + z^2 = 0$ define z as an implicit function around $(x, y) = (6,3)$? What about y as an implicit function around $(x, y) = (2,2)$? b. If $u = \log\frac{(x^3 + y^3)}{(x^2 + y^2)}$, then prove that $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} = 1$.	[2] [3]	1 1	

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