CLASS: BCA   SEMESTER: I
BRANCH: BCA   SESSION: MO/2023

SUBJECT: PR001 ELEMENTARY MATHEMATICS

TIME: 3 Hours   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
***4.** **Before attempting the question paper, be sure that you have got the correct question paper.**
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

			CO	BL
Q.1(a)	Convert the given equation of a line $x/2 + y/-3 = 1$ into the slope-intercept form.	[5]	1	3
Q.1(b)	Find the centre and radius for the given equation of a circle $x^2+y^2-12x-16y+19=0$.	[5]	1	4

Q.2(a) Find the inverse of the given matrix $A=\begin{pmatrix} 1 & 2 \\ -3 & 0 \end{pmatrix}$ [5]   2   3

Q.2(b) Solve the following system of equations by matrix method: [5]   2   3
        x+2y=5 ; 3x-2y=-1

Q.3(a) Find the 17th term of the AP: 1, 6, 11, 16 … … 211, 216   [5]   3   1
Q.3(b) Calculate the value of the median for the following data distribution: [5]   3   4

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	5	7	12	10	6

Q.4(a) Find the local maxima and minima of the function $f(x) = 3x^4 + 4x^3 - 12x^2 + 12$.   [5]   4   3
Q.4(b) Find the derivative of the function $f(x) = \frac{2x-1}{cosx}$ [5]   4   1

Q.5(a) Evaluate the integral $\int (x^5 + cosx + \frac{1}{x})\, dx$ [5]   5   5
Q.5(b) Find the value of the given integral $\int_0^1 \frac{1}{1+x^2}$ [5]   5   2