



FALL SEMESTER 2022-2023
SCHOOL OF ADVANCED SCIENCES
DEPARTMENT OF MATHEMATICS
CONTINUOUS ASSESSMENT TEST – I

Course Code : BMAT100L
Course Name : Mathematics
Slot : C1+TC1+TCC1
Date of Examination : 08.11.2022
Duration : 90 Minutes

General Instructions:

Max. Marks: 50

Answer all the following questions.

Q.No.	Question	Marks
1.	Solve the equation by $x - y - 2z = 0$, $y + 2z = 1$, $5x + 3y + 4z = 4$ by Matrix inversion method.	10
2.	Find the rank of the Matrix $\begin{pmatrix} 4 & 3 & 1 & -2 \\ -3 & -1 & -2 & 4 \\ 6 & 7 & -1 & 2 \end{pmatrix}$.	10
3.	Investigate for what values of λ and μ the system of linear equations $x + y + z = 6$, $x + 2y + 3z = 10$, $x + 2y + \lambda z = \mu$ has (i) no solution (ii) a unique solution (iii) an infinite number of solutions.	10
4.	Differentiate $(1 + 2x^2) \cos x$ using the product rule formula.	10
5.	Find the Taylor series for $f(x) = \cos^2 x$ about $x = \frac{\pi}{2}$ upto five terms.	10