



Class Test

Student ID: 261-15- Program: B. Sc. in CSE Semester: Summer Year: 2026
 Course Code: MAT102 Course Title: Mathematics-II Section: 71_A Date: 11.06.2026
 Class Test No.: 01 Marks Obtained: Signature of the Course Teacher:

Time: 35 minutes

Total Marks: 15

1.	Demonstrate the value of $\int_0^\infty 4e^{-\frac{x}{2}} x^{\frac{5}{2}} dx$.	[3]
2.	Illustrate Gamma function to calculate, $\int_0^\infty e^{-7x^2} x^4 dx$.	[3]
3.	Identify the value of H_{xy} and H_{zz} , where $H(x, y, z) = ye^{-x} + \sin^2 z - \ln(y + z).$	[4]
4.	If $u = \sec^{-1} \left(\frac{\sqrt[3]{x^3 + y^3 + z^3}}{x^2 + y^2 + z^2} \right)$, use Euler's theorem to find $x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y} + z \frac{\partial u}{\partial z}$.	[5]