



Class Test

Student ID :

Program :

Semester : Spring/ Summer/ ✓ Year

2026

Course Code :

MAT102

Course Title :

Mathematics II

Section :

Date :

Class Test No. :

01

Signature of the Course Teacher :

1. Write down the Euler's theorem for homogeneous function of 4 variable.

If $m = \sin^{-1} \left(\frac{x^5 + y^5 - z^5}{\sqrt{x-y+z}} \right)$ then show that

$$x \frac{\partial m}{\partial x} + y \frac{\partial m}{\partial y} + z \frac{\partial m}{\partial z} = \frac{9}{2} \tan m$$

[1+5]

2. Evaluate : $\int_0^{\infty} 13e^{-12x^2} x^3 dx$ [3]

3. Evaluate : $\int_2^e \int_1^x \int_0^y 7x^3 y^2 z^2 dy dz dx$ [6]

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