MCT
MANJARA CHARLITABLE TRUST
RAJIV GANDHI INSTITUTE OF TECHNOLOGY, MUMBAI
Department of Applied Sciences & Humanities

INTERNAL ASSESMENT AM-II (IA) - I

Date: - 17/02/2025

Max. Marks: 20	Duration: 1 Hour

Class: F.E.SEM-II
Name of the Course: Applied Mathematics-II
Branch: All

Instructions:
1. Question 1(i,ii,iii)is **compulsory for 10 Marks**
2. From Question 2 to 4 (Solve any Two)
3. Figures to the right of the question indicate full marks.
4. Assume the suitable data wherever necessary.
5. Illustrate your answers using neat diagrams wherever necessary.

Questions	MaxMarks	Blooms Taxonomy Level	Course Outcomes
Q1. i)Using Euler's Method find the approximate value of y at $x = 1$ for $\frac{dy}{dx} = x + y$ with initial conditions as $y(0) = 1$ and $h = 0.5$	3	1	CO6
Q1. ii) Solve: $(tany + x)dx + (xsec^2y - 3y)dy = 0$	3	2	CO1
Q1. iii) Find only the Particular Integral of $(D^4 - 1)y = sinx$	4	1	CO2
From Question 2 to 4 (Solve any Two)			
Q2 Solve: $xe^x(dx - dy) + e^x dx + ye^y dy = 0$	5	2	CO1
Q3Solve: $(D^2 + 4)y = \sinh(2x)$	5	2	CO2
Q4 Solve $\frac{dy}{dx} = \frac{1}{x+y}$ using Runge-Kutta 4^{th}order Method with initial conditions as $x_0 = 0, y_0 = 1, h = 1$ for $x = 1$	5	2	CO6