MANJARA CHARITABLE TRUST

RAJIV GANDHI INSTITUTE OF TECHNOLOGY, MUMBAI

Department of Applied Sciences & Humanities

INTERNAL ASSESMENT (IA) - I

Date: - 13/10/2025

Max. Marks : 20 Duration: 1 Hour

Class: F.E.SEM-I

Name of the Course: Applied Mathematics-I

Branch: All

Instructions:

1. Question 1 (i,ii,iii)is compulsory.
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	Max Mks	Bloom's Taxonomy Level	Course Outcomes
Q1. i) Solve $(1-i)^{\frac{4}{3}}$.	3	1	CO1
Q1. ii) If $6sinhx + 2coshx + 7 = 0$, then find $tanhx$.	3	2	CO2
Q1. iii) Solve the following equations by Gauss-Seidel Method(Perform Two Iterations only) $3x - 0.1y - 0.2z = 7.85$ $0.1x + 7y - 0.3z = -19.3$ $0.3x - 0.2y + 10z = 71.4$	4	2	CO6
From Question 2 to 4 (Solve any Two)			
Q2. Show that $cos^6\theta - sin^6\theta = \frac{1}{16}[cos6\theta + 15cos2\theta]$	5	3	CO1
Q3. If $sin(\theta + i\emptyset) = tan\alpha + isec\alpha$, then Prove that $cos2\theta\, cosh2\emptyset = 3$	5	2	CO2
Q4. Find a root of $3x - cosx - 1 = 0$ by Newton-Raphson Method (Perform Three Iterations only)	5	3	CO6

FE Sahyog