MANJARA CHARITABLE TRUST

RAJIV GANDHI INSTITUTE OF TECHNOLOGY, MUMBAI

Department of Applied Sciences & Humanities

INTERNAL ASSESMENT AM-II (IA) - II

Date: - 15/04/2025

Max. Marks: 20Duration: 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	Max Marks	Blooms Taxonomy Level	Course Outcomes
Q1.Evaluate $\int_0^\infty x\, e^{-x^4} dx$	3	2	CO3
Q1. ii) Evaluate $\int_0^1 \int_0^x xy dy dx$	3	2	CO4
Q1. iii) Evaluate $\int_0^2 \int_1^2 \int_0^{yz} xyz\, dx dy dz$	4	2	CO5
From Question 2 to 4 (Solve any Two)			
Q2 Show that $\int_0^2 x^2 (2-x)^3 dx = \frac{16}{15}$	5	2	CO3
Q3 Evaluate $\int_0^a \int_0^{\sqrt{a^2-y^2}} y^2 \sqrt{x^2+y^2} dy dx$ by changing to polar coordinates.	5	2	CO4
Q4 Find by double integration the area of the cardioid $r = a(1+\cos\theta)$	5	3	CO5

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