

**SRM Institute of Science and Technology
Ramapuram Campus.**

Department of Mathematics

Assignment – 1

Sub. Code: 18MAB102T

Sub. Title: Advanced Calculus and Complex Analysis

Year : I Year B. Tech. (Common to all Branches)

Date of Submission : on or before 03.05.2021

Date: 30.04.2021

Max. Marks: 10

Semester : II

**Unit 1
Multiple Integrals**

1. Evaluate $\int_0^{\pi} \int_0^{a \sin \theta} r \, dr \, d\theta$.

2. Change the order of integration and hence find the new limits for the integration

$$I = \int_0^1 \int_y^{2-y} x y \, dx \, dy.$$

3. Find by double integration the area between the parabolas $y^2 = 4ax$ and $x^2 = 4ay$.

4. Find the area of the circle using polar co-ordinates.

5. Evaluate $\int_0^1 \int_0^1 \int_0^1 e^{x+y+z} \, dx \, dy \, dz$.

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