Roll No:							

PADRE CONCEIÇÃO COLLEGE OF ENGINEERING, VERNA-GOA

TUTORIAL NO: 7 (Batch 1)

Semester: II (RC 2019-'20) **Course:** FE210
Course Instructor: Prof. Komal Paroolkar Mathematics-II

Topic: Applications of Double Integration.

		CO	CL
Q1.	Use double integration to find the area of the region bounded by $x^2 + y^2 = a^2 \; and \; x + y = a$ lying in the 1st quadrant.	**CO2**	**CL3**
Q2	Evaluate the area of the region between $r = 1 \; and \; r = 3$ using double integration.	**CO2**	**CL3**
Q3	The region bounded by the curve $r = 2a\cos\theta$ is revolved about the initial line. Find the volume of the object generated.	**CO2**	**CL3**
Q4.	Find, by double integration, the volume of the object formed by the revolution of the region bounded by $x^2 + \frac{y^2}{4} = 1$ about the X-axis.	**CO2**	**CL3**
Q5.	Find the mass of the area bounded by the curves $y = x^2 \; and \; x = y^2$ if $\rho = K(x^2 + y^2)$.	**CO2**	**CL3**

Roll No:							

PADRE CONCEIÇÃO COLLEGE OF ENGINEERING, VERNA-GOA

TUTORIAL NO: 7 (Batch 2)

Semester: II (RC 2019-'20) **Course:** FE210
Course Instructor: Prof. Komal Paroolkar Mathematics-II

Topic: Applications of Double Integration.

		CO	CL
Q1.	Find the area that lies inside $r = a(1 + \cos\theta)$ and outside $r = a$.	**CO2**	**CL3**
Q2	Find the area bounded by $x^2 + y^2 = 4, x = y \; and \; x = 0$ lying in the first quadrant.	**CO2**	**CL3**
Q3	Find, by double integration, the volume of the object formed by the revolution of the region bounded by $x^2 + y^2 = 4$ about the line $x = 3$.	**CO2**	**CL3**
Q4.	The region bounded by the curve $r = 1 + \cos\theta$ is revolved about the initial line. Find the volume of the object generated.	**CO2**	**CL3**
Q5.	Find the mass of a plate between $r = 1 \; and \; r = 4$ if the density varies as the square of the distance of a point from the pole.	**CO2**	**CL3**

Roll No:							

PADRE CONCEIÇÃO COLLEGE OF ENGINEERING, VERNA-GOA

TUTORIAL NO: 7 (Batch 3)

Semester: II (RC 2019-'20) **Course:** FE210
Course Instructor: Prof. Komal Paroolkar Mathematics-II

Topic: Applications of Double Integration.

		CO	CL
Q1.	Find the area of the region bounded by $y = x^2 and\ y = 1$	**CO2**	**CL3**
Q2	Find the area of the region $r \leq 3 + \cos\theta$.	**CO2**	**CL3**
Q3	The region $y \geq x^2\ and\ y \leq 1$ is revolved about the Y=axis. Find the volume of the object formed.	**CO2**	**CL3**
Q4.	The cardioid $r = 1 + \sin\theta$ is revolved about its own axis. Find the volume of the object formed.	**CO2**	**CL3**
Q5.	Find the mass of a plate in the form of $r = 2\cos\theta$ if the density varies as the distance of a point (in the region) from the initial line.	**CO2**	**CL3**

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