Roll No:							

PADRE CONCEIÇÃO COLLEGE OF ENGINEERING, VERNA-GOA

TUTORIAL NO: 3 (Batch 1)

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

Topic: Surface area of revolution (in Cartesian and polar coordinates).

		CO	CL
Q1.	Find the area of the surface generated by the revolution of $x = \frac{y^3}{3}; 0 \leq y \leq 1$ about the Y-axis.	**CO1**	**CL3**
Q2	The loop of the curve $6y^2 = x(x-2)^2$ is revolved about the X-axis. Evaluate the surface area of the surface formed.	**CO1**	**CL3**
Q3	Determine the surface area of the hollow object generated by the revolution of $x^{2/3} + y^{2/3} = 1$ about the X-axis.	**CO1**	**CL3**
Q4.	The curve $r = 2a\,cos\theta$ is revolved about the initial line. Use integration to evaluate the surface area of the surface formed.	**CO1**	**CL3**
Q5.	Find the area of the surface formed by the revolution of $y = \sqrt{x+2}\,; 0 \leq x \leq 4$ about the X-axis.	**CO1**	**CL3**

Roll No:							

PADRE CONCEIÇÃO COLLEGE OF ENGINEERING, VERNA-GOA

TUTORIAL NO: 3 (Batch 2)

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

Topic: Surface area of revolution (in Cartesian and polar coordinates).

		CO	CL
Q1.	The curve $y = \frac{5}{12}x^{6/5} - \frac{5}{8}x^{4/5}$ is revolved from $x = 0$ to $x = 1$ about the Y-axis. Evaluate the surface area of the surface generated.	**CO1**	**CL3**
Q2	The loop of the curve $9y^2 = x(x-3)^2$ is revolved about the X-axis. Evaluate the surface area of the surface formed.	**CO1**	**CL3**
Q3	Find the area of the surface formed by the revolution of $y = \sqrt{x+2}\,; 0 \leq x \leq 4$ about the X-axis.	**CO1**	**CL3**
Q4.	The curve $r = 2a\,sin\theta$ is revolved about the line $\theta = \frac{\pi}{2}$. Use integration to evaluate the surface area of the surface formed.	**CO1**	**CL3**
Q5.	Evaluate the surface of the surface formed by revolving the asteroid $x = acos^3t, y = asin^3t$ about the Y-axis.	**CO1**	**CL3**

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Roll No:							

PADRE CONCEIÇÃO COLLEGE OF ENGINEERING, VERNA-GOA

TUTORIAL NO: 3 (Batch 3)

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

Topic: Surface area of revolution (in Cartesian and polar coordinates).

		CO	CL
Q1.	Find the area of the surface generated by revolving $y = \sqrt{x+2}; 0 \leq x \leq 4$ about the X-axis.	**CO1**	**CL3**
Q2	The loop of the curve $x = t^2, y = t - \frac{t^3}{3}$ is revolved about the X-axis. Evaluate the surface area of the object generated.	**CO1**	**CL3**
Q3	The cardiode $r = 1 + \sin\theta$ is revolved about the line $\theta = \frac{\pi}{2}$. Find the surface area of the surface generated.	**CO1**	**CL3**
Q4.	Find the area of the surface generated by the revolution of $y = \frac{x^3}{9}; 0 \leq x \leq 2$ about the X-axis.	**CO1**	**CL3**
Q5.	The curve $r = 2a\ cos\theta$ is revolved about the initial line. Use integration to evaluate the surface area of the surface formed.	**CO1**	**CL3**

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