

[Total No. of CO's: 2]

Seat No:

[Total No. of Pages: 1]

G. H. Raison College of Engineering and Management, Pune.
(An Autonomous Institution)
F.Y B. Tech (All Branches) (Term-II)
CAE-II (2020 Pattern)

Subject Name: Integral Calculus & Differential Equations (UBSL104)

[Time: 1 Hours]

[Max. Marks-15]

COURSE OUTCOME:

1. Understand and use concept of definite integral & solve engineering problems.
2. Evaluate the multiple integrals using different techniques and apply it to solve engineering problems.
3. Understand vector integration and its applications related to real life problems.
4. Solve first order, first degree & higher order differential equations.
5. Form differential equations for simple engineering systems and find its solution

CO3	a)	State Green's lemma and stoke's theorem.	[2]	L1
	b)	Evaluate $\int_C 2ydx + (1-x) dy$ where c is portion of curve $y=1-x^3$ from $x = -1$ to $x = 2$.	[2]	L2
	c)	Evaluate $\iint_S \nabla \times \vec{F} \cdot d\vec{s}$ where $\vec{F} = (z)\vec{i} + (x)\vec{j} + (y)\vec{k}$ where S is the surface of the paraboloid $z= 1- x^2 -y^2, z \geq 0$	[3]	L3

OR

	d)	Evaluate $\oint_C y^3dx - x^3dy$ where C is the positively oriented circle of radius 2 centered at the origin.	[3]	L3
CO4	a)	Solve $(e^y + 2xy) dx + (xe^y + x^2) dy = 0$	[4]	L3
	b)	a) How do you Find complementary function of linear differential equations with constant coefficients? b) solve $d^3y/dx^3 - 2 d^2y/dx^2 - dy/dx + 2y = 0$	[4]	L4