



NARSIMHAREDDY ENGINEERING COLLEGE

(UGC AUTONOMOUS)

Hall Ticket

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I B.Tech II Semester (NR23) III Assignment Examinations, April 2025

**ODEVC (23MA201)
(FME)**

Date:

Time:

Max.Marks:10

CO1	Find the solutions of first order first degree differential equations and their applications.
CO2	Solve higher differential equation and apply the concept of differential equation to real world problems.
CO3	Use the Laplace transforms techniques for solving ordinary differential equations.
CO4	Calculate gradient of scalar point function and divergence, curl of vector point function.
CO5	Evaluate the line, surface and volume integrals and converting them from one to another.

Q.No	Question	Marks	CO	BT	PO
1	i) Find the Laplace Transform of $\sin 2t + \cos t e^{-t}$ ii) Find $L(\sin 2t \cos 3t)$	5M	3	L3 L4	3
2	Find the Laplace Transform of $f(t)$ defined as $f(t) = e^t$ when $0 < t < 5$ when $t > 5$	5M	3	L4	3
3	Find $L\{e^{-t}(2\cos 5t - 3\sin 5t)\}$	5M	3	L3	3
4	i) Evaluate $L\{t \sin t\}$ ii) Evaluate $L\{e^{-at} - e^{-bt}\}$.	5M	3	L3 L4	3
5	Find $L\{f(t)\}$, if $f(t) = \sin t$, $0 < t < \pi$, $\pi < t < 2\pi$ where $f(t)$ has period 2π .	5M	3	L4	3
6	i) Find the inverse Laplace Transform of $L^{-1}\{1s - 1s^2 - 2\}$ ii) Find the inverse Laplace Transform of $L^{-1}\{2s - 3s^2 + 4\}$	5M	3	L3 L4	3
7	Find the inverse Laplace Transform of $L^{-1}\{1s(s+1)(s+2)\}$	5M	3	L4	3
8	Find $L^{-1}\{1s(s^2+2s+2)\}$	5M	3	L4	3
9	Find the inverse Laplace Transform of $\{1s(s^2+1)\}$ by using convolution theorem	5M	3	L5	3
10	Solve the differential equation $D^2+4D+4)y = e^t$ given that $y(0) = 0$ and $y'(0) = 0$ by using Laplace Transformation	5M	3	L5	3
BT: L1-Remembering, L2-Understanding, L3-Appling, L4-Analyzing, L5-Evaluate, L6-Create.					