VIT Vidyalankar Institute of Technology
Accredited A+ by NAAC

EM-III- Tutorial-2

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Module-2- Inverse Laplace Transform

(Uni. Que. Paper Weightage 20 Marks)

1. Find Inverse Laplace Transform of $\left[\frac{4s}{(s^4+4)}\right]$ **[IIT BOM-17, MU-Dec 18]**

2. Find Inverse Laplace Transform of $\left[\frac{s^2+2s+3}{(s^2+2s+2)(s^2+2s+5)}\right]$ **[IIT-BHU-18, MU-19]**

3. Find Inverse Laplace Transform of $\tanh^{-1}s$ **[IIT KGP-18, ETRX-18]**

4. Find Inverse Laplace Transform of $L^{-1}\{\frac{s+30}{(s+4)(s^2+9)}\}$

5. Find Inverse Laplace Transform of $\tan^{-1}\left(\frac{s}{1}\right)$

6. Find Inverse Laplace Transform of $\frac{s-4}{(s-4)^2+2}$

7. Find Inverse Laplace Transform of i) $\left[\frac{2}{(s-2)(s+2)}\right]$ $ii)$ $\frac{1}{s^2+4s+2}$

8. Find the inverse Laplace transform of $\frac{s^2+5}{s^3-6s^2+11s-6}$ **(Dec 10,18, May -11,12)**

9. Find the inverse Laplace transform by convolution theorem of i) $\frac{1}{(s-2)(s+2)^2}$ **(May -09,11)** ii) $\frac{s}{(s^2+4)(s^2+1)}$

10. Find the inverse Laplace transform by convolution theorem $\frac{s}{(s^2+a^2)^2}$

11. Find the inverse Laplace transform of $\log\left(\frac{s^2+4}{s^2+25}\right)$ **(Dec 11,13,14, May -11,13)**

12. Find Inverse Laplace Transform of 1) $\frac{1}{(s^2+4s+13)^2}$ ii) $f(s)=\frac{3!\ e^{-5s}}{(s+2)^4}$ **(Dec-21)**