SRM Institute of Science and Technology
Department of Mathematics
21MAB102T-Advanced Calculus and Complex Analysis
2022-2023 Even
Unit III: Laplace Transforms
Tutorial Sheet - III

S.No.	Questions
	Part – A [8 marks]
1.	Using Convolution theorem to evaluate (i) $\frac{s}{(s^2+4)^2}$ (ii) $\frac{1}{s(s^2+a^2)}$
2.	Find the inverse Laplace transform of using Partial fraction method $\frac{1}{s^2-5s+6}$
3.	Find $L^{-1}\left[\frac{s^3}{s^4-a^4}\right]$ using Partial fraction method.
4.	Find $L^{-1}\left[\frac{s^2}{(s^2+a^2)(s^2+b^2)}\right]$ using convolution theorem.
5.	Solve the equation by Laplace transform $y''+9y=6, y(0)=2, y'(0)=0$
	Part – B [15 mark]
6.	Solve the equation by Laplace transform $y''+2y'+5y=e^{-t}\sin t,\ y(0)=0, y'(0)=1$