



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

S.No.	Questions
Part – A [8 marks]	
1.	Find the Laplace Transform of $\frac{\cos at - \cos bt}{t}$
2.	Find the Laplace Transform of the periodic function $f(t) = \frac{kt}{T}, 0 < t < T, f(t+T) = f(t)$.
3.	Verify initial and final value theorems for $f(t) = e^{-t}(t+2)^2$
4.	Find the Laplace Transform of the periodic function $f(t) = \begin{cases} \sin \omega t, 0 < t < \frac{\pi}{\omega} \\ 0, \frac{\pi}{\omega} < t < \frac{2\pi}{\omega} \end{cases}$
5.	Find the Laplace Transform of $f(t) = \begin{cases} t-1, 1 < t < 2 \\ 3-t, 2 < t < 3 \end{cases}$
Part – B [15 mark]	
6.	(i) Find the Laplace Transform of $e^t \sin^3 2t$ (ii) Find the Laplace Transform of $t e^t \sin 3t$