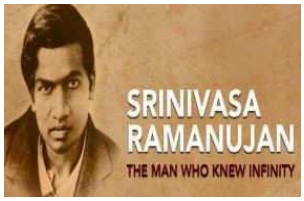
	SRM Institute of Science and Technology **Kattankulathur**	
	DEPARTMENT OF MATHEMATICS	
	18MAB101T Calculus and Linear Algebra	
	UNIT –3 Ordinary Differential Equations	
Sl.No.	**Tutorial Sheet -1**	**Answers**
	Part – A	
1	**Solve** $\left(D^2-7D+12\right)y=0$	$y=Ae^{3x}+Be^{4x}$
2	**Solve** $\left(D^2-2D+4\right)y=0$	$y=\left(Ax+B\right)e^{2x}$
3	**Solve** $\left(3D^2+D-14\right)y=0$	$y=Ae^{-(7/3)x}+Be^{2x}$
4	**Solve** $\left(D^2+2D+5\right)y=0$	$y=e^{-x}(A\cos 2x+B\sin 2x)$
5	**Solve** $\left(D^2+16\right)y=0$	$y=(A\cos 4x+B\sin 4x)$
6	**Solve** $\left(D^2+2D+2\right)y=e^{-2x}+\cos 2x$	$y=e^{-x}(A\cos x+B\sin x)+\frac{1}{2}e^{-2x}+\frac{1}{5}\sin 2x-\frac{1}{10}\cos 2x$
7	**Solve** $\left(D^2-5D+6\right)y=x^2+3x-1$	$y=Ae^{2x}+Be^{3x}+\frac{1}{6}\left[x^2+\frac{14}{3}x+\frac{26}{9}\right]$
8	**Solve** $\left(D^2+D+1\right)y=x^2e^{-x}$	$y=e^{-\frac{1}{2}x}(A\cos\frac{\sqrt{3}}{2}x+B\sin\frac{\sqrt{3}}{2}x)+e^{-x}\left(x^2+2x\right)$
9	**Solve** $\left(D^2+4\right)y=x\sin x$	$y=(A\cos 2x+B\sin 2x)+\frac{x}{3}\sin x-\frac{2}{9}\cos x$
10	$\left(D^2-2D+1\right)y=e^x\sin x$	$y=\left(Ax+B\right)e^x-e^x\sin x$