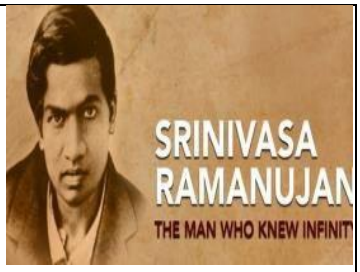
	SRMInstituteofScienceandTechnologyKattankulathur	
	DEPARTMENTOFMATHEMATICS	
	18MAB201T-TRANSFORMSAND BOUNDARYVALUEPROBLEMS	
	UNIT-V **Z-Transforms Tutorial Sheet -3**	

Sl.No.	Questions	Answer
	Part -A	
1	**Find** $Z^{-1}\left[\frac{2z^2+3z}{(z+2)(z-4)}\right]$ **by partial fraction method..**	$\frac{(-2)^n}{6}+\frac{11\cdot 4^n}{6}$
2	**If** $F(z)=\frac{3z}{(z-1)(z-2)}$, **find the residue of** $F(z)z^{n-1}$ **at** $z=2.$	$3\cdot 2^n$
3	**If** $F(z)=\frac{z+3}{(z+1)(z-2)}$, **find the residue of** $F(z)z^{n-1}$ **at** $z=-1.$	$\frac{2}{3}(-1)^n$
4	**Using convolution theorem evaluate** $Z^{-1}\left[\frac{z^2}{(z-1)(z-3)}\right]$	$\frac{1}{2}\left(3^{n+1}-1\right)$
5	**Solve** $y_{n+1}-2y_n=0$ **given** $y_0=3$ **using Z transforms.**	$3\cdot 2^n$
	Part -B	
6	**Find the inverse z – transforms of** $\frac{8z^2}{(2z-1)(4z-1)}$ **by using convolution theorem.**	$2\left[\left(\frac{1}{2}\right)^n-\left(\frac{1}{2}\right)^{2n+1}\right]$
7	**Find by Residue method if** $Z^{-1}\left[\frac{2z^2+4z}{(z-2)^3}\right]$.	$n^2\cdot 2^n$
8	**Find** $Z^{-1}\left[\frac{z^{-2}}{(1-z^{-1})(1-2z^{-1})(1-3z^{-1})}\right]$ **by using method of partial fraction.**	$\frac{1}{2}-2^n+\frac{1}{2}3^n$
9	**Solve:** $y_{n+2}+6y_{n+1}+9y_n=2^n$ **given** $y_0=y_1=0,$ **using Z – transforms.**	$\frac{1}{25}2^n-\frac{1}{25}(-3)^n+\frac{1}{15}n(-3)^n$
10	**Solve:** $y_{n+2}-7y_{n+1}+12y_n=2^n$, **given** $y_0=0,\ y_1=0,$ **using Z – transforms.**	$\frac{1}{2}2^n-3^n+\frac{1}{2}4^n$