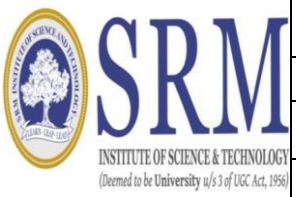


SRM Institute of Science and Technology

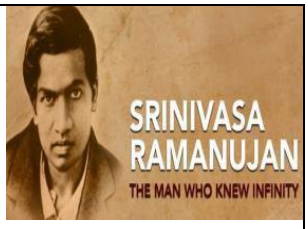
Kattankulathur

DEPARTMENT OF MATHEMATICS

18MAB101T -CALCULUS AND LINEAR ALGEBRA

UNIT V: SEQUENCE & SERIES

Tutorial Sheet -1



Sl.No.	Questions	Answer
	Part – A	
1	Show that the sequence $\left\{\frac{n+1}{2n+7}\right\}$ is convergent.	
2	Examine the nature of the sequence: $\{2^n\}$	Divergent.
3	Examine the nature of the sequence: $\{3+(-1)^n\}$	Oscillatory.
4	Test for convergence of the series: $\frac{1}{4.7.10}+\frac{4}{7.10.13}+\frac{9}{10.13.16}+.....\infty$	Divergent.
5	Test for convergence of the series: $\frac{1}{1.2.3}+\frac{3}{2.3.4}+\frac{5}{3.4.5}+.....\infty$	Convergent.
	Part – B	
6	Test for convergence of the series: $\sum_{n=1}^{\infty}\frac{n^3+1}{2^n+1}$	Convergent.
7	Test for convergence of the series: $\frac{x}{1}+\frac{1}{2}.\frac{x^2}{3}+\frac{1.3}{2.4}.\frac{x^3}{5}+\frac{1.3.5}{2.4.6}.\frac{x^5}{7}+.....\infty, x>0$	Convergent for $0<x<1$. Divergent for $x>0$.
8	Test for convergence of the series: $\sum_{n=1}^{\infty}\sqrt{\frac{n}{n+1}}x^n, x>0$.	Convergent for $0<x<1$. Divergent for $x\geq 0$.
9	Test for convergence of the series: $\sum\frac{x^n}{n!}$	Convergent for all *x*.
10	Test for convergence of the series: $\sum\frac{x^n}{1+x^n}$	Convergent for $0<x<1$. Divergent for $x\geq 0$.