
 <b>SRM</b> INSTITUTE OF SCIENCE & TECHNOLOGY (Deemed to be University u/s 3 of UGC Act, 1956)	<b>SRM Institute of Science and Technology</b>		 <b>SRINIVASA RAMANUJAN</b> THE MAN WHO KNEW INFINITY
	<b>Kattankulathur</b>		
	<b>DEPARTMENT OF MATHEMATICS</b>		
	<b>18MAB101T -CALCULUS AND LINEAR ALGEBRA</b>		
	<b>UNIT V: SEQUENCE &amp; SERIES</b>		
	<b>Tutorial Sheet -3</b>		
<b>Sl.No.</b>	<b>Questions</b>	<b>Answer</b>	
<b>Part – A</b>			
<b>1</b>	Define absolutely convergent with an example.		
<b>2</b>	Define conditionally convergent with an example.		
<b>3</b>	Test for convergence of the series: $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{\sqrt{n}}$	Convergent.	
<b>4</b>	Test for convergence of the series: $\sum_{n=1}^{\infty} \frac{(-1)^{n-1} (2n+3)}{2n}$	Oscillatory	
<b>5</b>	Test whether the series is absolutely convergent or not: $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{2n-1}$ .	Conditionally convergent	
<b>Part – B</b>			
<b>6</b>	Test for convergence of the series: $\sum_{n=2}^{\infty} \frac{(-1)^{n-1} x^n}{n(n-1)}, 0 < x < 1$ .	Convergent.	
<b>7</b>	State the values of $x$ for which the series is convergent. $\frac{x}{1} - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \dots \infty$ .	$-1 < x \leq 1$	
<b>8</b>	Prove that the exponential series $1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots \infty$ is absolutely convergent and convergent for all values of $x$ .		
<b>9</b>	Discuss the convergence of the series $\frac{x}{1+x} - \frac{x^2}{1+x^2} + \frac{x^3}{1+x^3} - \dots \infty$ , if $0 < x < 1$ .	Convergent.	
<b>10</b>	Prove that the series $\frac{\sin x}{1^3} - \frac{\sin 2x}{2^3} + \frac{\sin 3x}{3^3} - \dots \infty$ converges absolutely.		