

Lesson Plan

Department of Mathematics

Session- 2020-21

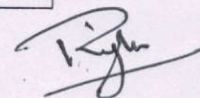
Name of the Teacher- Dr. Raj Kumar

Designation- Asstt. Prof. Math

Class and Section- B.A/ B.Sc-II (4th Sem)

Subject : Sequence and Series

Week	Topics
1	chapter1 topology of real numbers ,various definitions sets ,finite set ,infinite set ,interval ,subset, bounded above set ,and bounded above set ,bounded below set, unbounded below set, bounded set ,unbounded set, greatest element, least element ,least upper bound ,some theorems on supremum of a set, greatest lower bound or infimum, some theorems on infimum of a set
2	completeness axiom, archimedean property of reals, examples and exercise 1.1, neighbourhood of a point, deleted neighbourhood ,interior of a set ,open set, some theorems on open set, theorems on interior of a set, closed set, some theorems on closed sets ,examples and exercise 1.2.
3	limit point of a set ,isolated point ,adherent point ,closure of a set ,bolzano weierstrass theorem, some theorems on closure of a set, examples and exercise 1.3 ,compact set, Heine borel property, Heine borel theorem ,Converse of Heine borel theorem, example and exercise 1.4
4	chapter 2 sequences, definition of sequence, representation of a sequence ,methods to describe a sequence, range of a sequence,constant sequence convergent sequence, some theorems on convergent sequences, divergent sequence, oscillatory sequence ,null sequence ,examples and exercise 2.1 ,some basic theorems on limits ,Cauchy''s first theorem on limits.
5	Cauchy's second theorem on limits, examples and exercise 2.2 , monotonic sequence, monotone convergent theorem, nested sequence examples and exercise 2.3 ,limit point or cluster point ,some theorems on limit point, bolzano theorem, cauchy's sequence. Assignment 1
6	cauchy's general principle of convergence examples and exercise 2.4 subsequence ,theorems on subsequence. class test of chapter 1
7	chapter 3infinite series, definition of infinite series convergence and divergence of an infinite series ,oscillate finitely or infinite ,examples and theorems exercise 3.1



8	cauchy's general principle of convergence ,convergence or divergence of geometric series, general test for the convergence of positive term series, comparison test, hyper harmonic series or p-test series, class test of chapter 2
9	examples and exercise 3.2., chapter 4 infinite series continued, D'Alembert Ratio test, examples and exercise 4.1, cauchy's root test. examples and exercise 4.2 class test of chapter 3.
10	logarithmic test for the convergence of a series examples and exercise 4.3. De morgan's and Bertrand's test. examples and exercise 4.4. gauss test exercise and examples, cauchy's integral test for the convergence of a series, Cauchy's condensation test. examples and exercise
11	chapter 5, alternating series, Leibnitz 's test for the convergence of alternating series. examples, absolute convergence ,conditional convergence, exercise 5.1, assignment 2
12	chapter 6 arbitrary series, Abel test, Dirichlet's test, exercise and its examples of 6.1, insertion and removal of parenthesis, example and exercise 6.2, multiplication of series ,Cauchy's product, Mertin"s theorem, Cesaro's theorem.
13	Abel's theorem, infinite product, absolute convergence of an infinite product theorems and examples
14	exercise 7.1 and 7.2 class test of chapter 4
15	revision and test
16	revision and test
17	
18	



(Dr. RAJKUMAR)
Asstt. Prof. Maths