**Lesson Plan**

**Session: 2021-22**

**Name of Teacher : Sandeep Kumar**

**Subject: Sequence and Series**

**Class:** **B.Sc. 4th semester**

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| **Sr. No.** | **Week** | **Dates** | **Topics to be covered** |
| 1 | 1 | March 21-26 | Boundedness of set of real numbers, least upper bound , greatest lower bound of a set, neighborhoods |
| 2 | 2 | March 28-April 02 | Interior points, isolated points, limit points , open sets , closed set, Interior of a set. |
| 3 | 3 | April 04-09 | Closure of a set in real numbers and their properties, Bolzano Weierstrass Theorem. |
| 4 | 4 | April 11-16 | Open covers, Compact sets and Heine Boral Theorem |
| 5 | 5 | April 18-23 | Real sequences and their convergence, theorems on limits of sequence. Bounded and monotonic sequence |
| 6 | 6 | April 25-30 | Cauchy's Sequence, Cauchy's general principle of convergence, Subsequences,Subsequential limit |
| 7 | 7 | May 02-07 | Convergence and divergence of infinite series, comparison Test of positive terms infinite series |
| 8 | 8 | May 09-14 | Cauchy's general principle of convergence of series, convergence and divergence of geometric series., Hyper Harmonic series or p series. |
| 9 | 9 | May 16-21 | D' Alembert's Ratio Test and Raabi's Test |
| 10 | 10 | May 23-28 | Logarithmic Test and de Moragan and Bertrand's test |
| 11 | 11 | May 30-June 04 | Cauchy's nth root Test and Gauss test |
| 12 | 12 | June 06-11 | Cauchy's integral Test and Cauchy's condensation test |
| 13 | 13 | June 13-18 | Leibnitz's Test, absolute and conditional convergence for alternating series |
| 14 | 14 | June 20-25 | Abel's lemma ,Abel's test ,Dirichilet's test |
| 15 | 15 | June 27-July 02 | Insertion and removal of parenthesis, re arrangement of terms of series, Dirichilet's Theorem, Riemann's re arrangement Theorem, pringsheim's thorem |
| 16 | 16 | July 04-09 | Multiplication of series, Cauchy product of series, convergence and absolute convergence of infinite products |
|  |  |  | Examinations |