Baba fateh Singh ji Govt. College, Assandh, Karnal

Department of Mathematics

Session 2023-2024 Class B.A II: (Sem - 4th)

Lesson Plan Sequence & Series

Sr.No		
1	Week 1	• Topology of real numbers, closure of a set in real numbers and their properties.
2		— do —
3	1 Jan to 6 Jan.	— do —
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7	Week 2	• Bolzano - Weierstrass theorem.
8		• open covers.
9	8 Jan to 13 Jan.	• Compact sets and Heine - Borel Theorem.
10		— do —
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13	Week 3	• Sequence: Real sequences and their convergence
14		• Bounded and monotonic sequence
15	15 Jan to 20 Jan	• Cauchy sequence,
16		• Cauchy general principal of convergence.
17		— do —
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20	Week-4	• Subsequence
21		— do —
22	22 Jan. to 27 Jan	— do —
23		— do —
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27	Week-5	• Infinite series: convergence and divergence of infinite series.
28		• Cauchy's general principle of convergence of series, Hyper Harmonic series or p-series.
29	29 Jan to 3 Feb.	
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33	Week-6	• Infinite series: D'Alembert Ratio test,
34		• Raabe's test, Logarithmic test, de-morgan
35	5 Feb. to 10 Feb.	• and Bertrand's test, Cauchy's nth root test. — do —
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43	Week7 12 Feb to 17 Feb	• Gauss test • Cauchy's Integral test, • Cauchy condensation test.
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47	Week-8 19 Feb to 24 Feb	— do — — do — — do — • Alternating series • Lebbnitz's test for the convergence of Alternat series
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54	Week-9 26 Feb to 2 March	— do — • Examples. • Absolute convergence. • Conditional convergence. • Examples 5.1
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63	Week-10 4 March to 9 March	— do — • Arbitrary series: Abel's Lemma, • Abel's test, Dirichlet's test. • Examples
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70	Week-11 11 March to 16 March	— do — — do — — do — • Insertion and Removal of parenthesis.
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77	Week-12 18 March to 23 March	• Examples • Exercise – 6.3 • Multiplication of series. – do –
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84	Week-13 1 April to 6 April	• Examples • product theorem • Cauchy's theorem — do —
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Week-14 8 April to 13 April	• Mertin's theorem • Cesaro's theorem • Abel's Theorem • Examples	
Week-15 15 April to 20 April	— do — — do — • Infinite products: sequence of partial products, convergence of an infinite product.	
Week-16 22 April to 27 April	• Examples — do — • Cauchy product of series (definitions). • Convergence and absolute convergence of infinite products.	
Week-17 29, 30 April	• Revision. • Class test, Assignment work.	
Week-18		
Week-19		