Subject : Mathematics

Teacher name: Rashminder Semester 2nd

Name of the Paper : Paper 4

Class: MSc (Mathematics)

April 2021

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| Spaces of analytic functions and their completeness, Hurwitz’s theorem, Montel’s theorem, Riemann mapping theorem, infinite products, Weierstrass factorization theorem, Factorization of sine function, Gamma function and its properties, functional equation for gamma function, Integral version of gamma function.  |

May 2021

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| Reimann-zeta function, Riemann’s functional equation, Runge’s theorem, MittagLeffler’s theorem. Analytic continuation, uniqueness of direct analytic continuation, uniqueness of analytic continuation along a curve, Power series method of analytic continuation , Schwarz reflection principle.  |

June 2021

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| Monodromy theorem and its consequences. Harmonic function as a disk, Poisson’s Kernel. Harnack’s inequality, Harnack’s theorem, Canonical product, Jensen’s formula, Poisson-Jensen formula, Hadamard’s three circle theorem. Dirichlet problem for a unit disk. Dirichlet problem for a region, Green’s function |

July 2021

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|  Order of an entire function, Exponent of convergence, Borel theorem, Hadamard’s factorization theorem. The range of an analytic function, Bloch’s theorem, Little-Picard theorem, Schottky’s theorem, Montel-Carathedory theorem, Great Picard theorem. Univalent functions, Bieberbach’s conjecture (Statement only), and 17 / 4 theorem. |