SXS-321

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ANDHRA UNIVERSITY
DEPT. OF MATHEMATICS
M.Sc. Mathematics, III Semester

M 302: COMPLEX ANALYSIS – II

UNIT – I

The maximum modulus theorem: The maximum principle – Schwarz's lemma – Convex functions and Hadamard's three circles theorem – Phragmen – Lindelof theorem.

(§ 1, §2, §3, § 4 of chapter – VI of the prescribed text book)

UNIT – II

Compactness and convergence in the Spaces of Analytic Functions: The space of continuous functions C (G, Ω) – Spaces of analytic functions – Spaces of meromorphic functions – The Riemann Mapping Theorem – Weierstrass Factorization theorem – Factorization of sign functions.

(§ 1, §2, §3, § 4, § 5, §6 of chapter –VII of the prescribed text book)

UNIT – III

Runge's Theorem:Runge's Theorem – Simple connectedness – Mittag-Leffler's Theorem, Analytic Continuation and Riemann Surfaces, Schwarz Reflection Principle – Analytic Continuation Along A Path – Mondromy Theorem.

(§1, §2, §3 of chapter –VIII, §1, §2,§3 of chapter –IX of the prescribed text book)

UNIT – IV

HarmonicFunctions: Basic Properties of Harmonic functions – Harmonic functions on a disk.Jenson's formula, The genus and the order of an entire function Hadamard's factorization theorem.

(§ 1, §2 of chapter – X and §1, §2, §3 of chapter –XI of the prescribed text book)

Prescribed textbook:

Functions of one complex variables by J.B. Conway: Second edition, Springer International Student Edition, Narosa Publishing House, NEW DELHI