

SX-5215

ANDHRA UNIVERSITY  
DEPARTMENT OF MATHEMATICS  
M.A/M.SC MATHEMATICS  
II-SEMESTER

2005-2006 AB

M 201 ALGEBRA – II

UNIT I

Algebraic extension of fields: Irreducible polynomials and Eisenstein's criterion. Adjunction of roots. Algebraic extensions, Algebraically closed fields.

Chapter 15 of the prescribed text book

UNIT II

Normal and separable extensions: Splitting fields, Normal extensions, multiple roots, finite fields, separable extensions.

Chapter 16 of the prescribed text book

UNIT III

Galois theory: Automorphism groups and fixed fields, fundamental theorem of Galois theory, fundamental theorem of algebra.

Chapter 17 of the prescribed text book

UNIT IV

Applications of Galois theory to classical problems: Roots of unity and cyclotomic polynomials, cyclic extensions, polynomials solvable by radicals, symmetric functions, Ruler and compass constructions

Chapter 18 of the prescribed text book

Prescribed Book:

Basic Abstract Algebra: P. B. Bhattacharya, S. K. Jain and S. R. Nagpaul, Second edition, Cambridge University Press, printed and bound in India at Replika Press Pvt. Ltd., 2001.