SX-S 210
W.e.f. 2003-2004 AB

ANDHRA UNIVERSITY
DEPARTMENT OF MATHEMATICS
M.Sc MATHEMATICS
II SEMESTER
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.