

SXS-323

Audhra University
Department of Mathematics
M.Sc Mathematics
III Semester - Special Paper
Syllabus
M304 COMMUTATIVE ALGEBRA I

2005-06 AB

UNIT I

Rings and ring homomorphism, ideals, quotient rings, zero divisors, Nilpotent elements, units, prime ideals and Maximal ideals, nil radical and Jacobson radical, operations on ideals, Extensions and contractions.

UNIT II

Modules and module homomorphisms, Sub modules and quotient modules, operations on submodules, Direct sum and product; finitely generated modules, exact sequences, Tensor product of modules, Restriction and extension of scalars, Exactness properties of the tensor product, algebras, tensor product of algebras.

UNIT III

Local properties, Extended and contracted ideals in rings of fractions.

UNIT IV

Primary decompositions

Content and extent of chapters 1 to 4 of the prescribed textbook.

Prescribed text book: Introduction to commutative algebra, By
M.F. ATIYAH AND I.G. MACDONALD, Addison- Wesley publishing
company, London