

B.Sc. DEGREE PROGRAMME
MATHEMATICS (CORE COURSE)
FIFTH SEMESTER
MM5B06 : ABSTRACT ALGEBRA

5 hours/week

4 credits

30 weightage

Text Books:

1. John B. Fraleigh : A First Course in Abstract Algebra, 7th Ed., Pearson.
2. D. Prasad : Linear Algebra, Narosa Pub. House.

Module I (20 hrs)

Binary operations; Isomorphic binary structures; Groups; Sub groups
(Sections 2, 3, 4 & 5 of Text 1).

Module II (25 hrs)

Cyclic groups; Groups and permutations; Orbits, cycles and Alternating groups
(Sections 6, 8, & 9 of Text 1).

Module III (15 hrs)

Cosets and Theorem of Lagrange; Homomorphisms
(Sections 10 & 13 of Text 1).

Module IV (30 hrs)

Rings and Fields; Integral Domains
(Sections 18 & 19 of Text 1).

Vector spaces; Subspaces; Linear Dependence and Independence; Basis and Dimension
(Chapter 2 of Text 2).

References

1. Joseph A. Gallian : Contemporary Abstract Algebra. Narosa Pub. House.
2. P.B. Bhattacharya, S.K. Jain and S.R. Nagpaul: Basic Abstract Algebra, 2nd ed., Cambridge University Press.
3. Artin : Algebra, PHI.
4. K. Hofman and R. Kunze : Linear Algebra, Pearson Education
5. J.B. Fraleigh & R.A. Bearegard : Linear Algebra, Addison Wesley.
6. Durbin : Modern Algebra : An Introduction, 5th ed., Wiley.

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