

**FIRST ALLIED COURSE - III - LOGIC AND SCIENTIFIC METHODS**

- UNIT- I : Definition: Of Logic - Nature and Scope - the division of logic - deduction and induction - Logic as a Normative sciences - proposition - Judgement and sentence - Traditional classification of propositions - Categorical, Hypothetical and Disjunctive - Quality and Quantity - Special types: Singular, Exclusive and exceptive- Reduction of sentence to Logical form: Terms and words - Distribution of terms - Modern classification of proposition.
- UNIT-II : Inference: Types : Deductive and Inductive - Immediate and Mediate - Immediate inference: Opposition of proposition - Education- obverse, converse, Testing the Validity - Mediate Inference: Syllogism - Nature and kinds - Categorical syllogism - General rules and proof figures - Testing the validity, Figures and moods - Hypothetical syllogism - rules - testing - Disjunctive syllogism - rules - Testing - Fallacies.
- UNIT - III : Methods of Induction: Nature of Science and Scientific Methods, Stages of Scientific Induction. Observation and Experiment - advantages and disadvantages - conditions of observation - Fallacies - Verification of Hypothesis and proof.
- UNIT-IV : Types of Induction - Enumerative and scientific Methods - Analogy - Sound and unsound - Value and limits of the methods of scientific enquiry.
- UNIT -V : Value of special symbols - symbols for conjunction, implication, Disjunction, Biconditional and Negation- Construction of Truth Tables and Truth Values for Compound propositions.

**BOOKS FOR REFERENCE:**

1. Ghosh, B.N. and Ghosh Roma- A Text book of Deductive Logic. Vikas Publishing House Pvt. Ltd., New Delhi, 1984.
2. Ganapathy, T.N. - An Invitation to Logic, K.c.S. Desikan & Co., Bookseller and Publishers, Madras, 1973.
3. Balasubramaniam, P. - An Invitation to Symbolic Logic, Sri Ramakrishna Mission, Vivekananda College, Rajan & Co., Printers, Madras, 1977.
4. Balasubramaniam . R - Symbolic Logic University of Madras, Madras, 1980.
5. Irving M. Gopi - Introduction Logic. Macmillan Pub. Co. Inc. New York 1972.
6. John. T. Kearns. - Deductive Logic. New Century Education Division, Macmillan Corporation, New York, 1965.
7. Frank Miller Chapman and Paul Henle - The Fundamentals of Logic. Charles Scribners Sons, London, 1933.
8. Nandita Bandyopadhyay- The Concept of Logical Fallacies. Sri Hyamapada Battacharya, Calcutta, 1977.
9. Cohan and Nagal - An Introduction to Logic and Scientific Methods, Allied Publishers, Madras, 1978.