Course title: Mathematics-I

Course Code: BELED323   **Credit:4 (L-,T-1,P-0)**

Course Content: **MM:100**

Course Objectives:

- To provide knowledge to student about distributive laws.
- To provide the concept of vector and scalar.
- To make able to distinguish between Permutations & combination.
- To make them clear about the Mathematical induction.

Unit I- Sets, operations on sets, distributive laws, De Morgan's law,

Power set, Cartesian product.

Unit II- Vector Algebra, properties of vector and scalar, operation of vector, modulus, grad, divergence and curl.

Unit III- Statements: negation, conjunction, disjunction, implications, converse and contrapositive, necessary and sufficient condition, type of proofs, Mathematical induction and deduction, truth tables, switching circuits, AND, OR, NOT gates.

Unit IV- Permutations & combination.

Course Outcomes:

After completing the course, students will be able to:

1. Understand various Laws of Vector Algebra.
2. Analyze the system of divergence and curl.
3. Identify the difference between converse and contrapositive.
4. Understand the AND, OR, NOT gates.
5. Evaluate the Mathematical induction and deduction.
6. Solve the Cartesian product.

References:-

(1) Dr.P.K.Mittal Vector calculus and Geometry, S.J. Publication, Meerut.
(2) Singal, M.K. and Asha Rani Singal. Algebra R. Chand and Co.: New Delhi.
(3) Krishna publication, Vector Algebra.
(4) Dr. K.L. Gupta, Nirupamsahityasada