# Sardar Vallabhbhai Patel Institute of Technology,Vasad
## B. E.  Sem-4 (CE & IT) 2021-2022
## Discrete Mathematics- 3140708
## Syllabus of Second Mid Semester Exam

**Partial Ordering:** Definition, Examples, Simple or Linear Ordering, Totally Ordered Set (Chain), Frequently Used Partially Ordered Relations, Representation of Partially Ordered Sets, Examples of above, Hesse Diagrams, Least & Greatest Members, Minimal & Maximal Members, Least Upper Bound (Supremum), Greatest Lower Bound (infimum), Wellordered Partially Ordered Sets (Posets). Lattice as Posets, complete, distributive modular and complemented lattices Boolean and pseudo Boolean lattices. (Definitions and simple examples only)

**Recurrence Relation**: Introduction, Recursion, Recurrence Relation, Solving, Recurrence Relation, Examples of above

**Algebraic Structures:** Algebraic structures with one binary operation- Semigroup, Monoid, Group, Subgroup, normal subgroup, group Permutations, Coset, homomorphic subgroups, Lagrange's theorem, Congruence relation and quotient structures. Algebraic structures (Definitions and simple examples only) with two binary operation- Ring, Integral domain and field. Algebraic structures (Definitions and simple examples only) with two binary operation- Ring, Integral domain and field. Algebraic structures (Definitions and simple examples only) with two binary operation- Ring, Integral domain and field. Algebraic structures (Definitions and simple examples only) with two binary operation- Ring, Integral domain and field. Examples of above

**Reference Book:**

(1) J. P. Tremblay and R. Manohar, Discrete Mathematical Structures with applications to Computer Science, Tata McGraw-Hill,1997.

(2) S. Lipschutz and M. L. Lipson, Schaum's Outline of Theory and Problems of Discrete Mathematics, 2nd Ed., Tata McGraw-Hill,1999.

(3) K. H. Rosen, Discrete Mathematics and its applications, Tata McGraw-Hill, 6th Ed., 2007.

(4) David Liben-Nowell, Discrete Mathematics for Computer Science, Wiley publication, July 2017.

(5) Eric Gossett, Discrete Mathematics with Proof, 2nd Edition,Wiley publication, July 2009.

**Note: Refer Tutorial – 6 (Question No. 6 to Question No. 8) to Tutorial - 9, and Assignment-2 (Question No. 1 to Question No. 38)**