SSESA’s Science College, Congress Nagar, Nagpur.

**M.Sc. - Semester-I**

**Assignment List**

**2020-21**

**Paper I: Discrete Mathematical Structure**

Q.1 Explain the principle of mathematical induction.

Q.2 Prove De’Morgan’s theorem for set.

Q.3 Explain the different Connectives used for mathematical logic.

Q.4 State and explain pigeonhole principle.

Q.5 Explain properties of Relations.What is equivalence relation?

Q.6 Explain transitive closure and Warshall’s algorithm with suitable example.

Q.7 What is permutation functions? Explain.

i) Cyclic permutation

Q.8 Explain the terms:

i) Euler paths and Circuits

ii) Hamiltonian paths and Circuits

Q.9 Explain with example:

i) Partially ordered set

ii) Hasse diagrams

Q.10 What is lattice? Explain with example.

Q.11 What is minimal spanning trees? Explain.

i) Kruskal’s algorithm

ii) Prim’s algorithm

Q.12 Explain Isomorphism and Homomorphism.

Q.13 What is Phase structure grammar? Explain with example

Q.14 Explain:i)Semigroup ii) Monoid

Q.15 What is Finite state machine? Explain with example.

Co-ordinator(M.Sc.)

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