

## GRAPH THEORY

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### Unit I

Graphs and Subgraphs – Introduction – Definition and Examples – Degree of a vertex – subgraphs – isomorphism of Graphs – Ramsey Numbers – Independent sets and Coverings

### Unit-II

Intersection Graphs and Line Graphs – Adjacency and Incidence Matrices – Operations on Graphs – Degree Sequences – Graphic Sequences

### Unit III

Connectedness -Introduction – Walks, Trails, paths, components, bridge, block - Connectivity

### Unit IV

Eulerian Graphs – Hamiltonian Graphs

### Unit V

Trees – Characterization of Trees – Centre of a Tree – Planarity – Introduction, Definition and Properties – Characterization of Planar Graphs – Thickness – Crossing and Outer Planarity

### Recommended Text

S.Arumugam and S.Ramachandran, “Invitation to Graph Theory”, SITECH Publications India Pvt. Ltd., 7/3C, Madley Road, T.Nagar, Chennai - 17

### Reference Books

1. S.Kumaravelu, SusheelaKumaravelu, Graph Theory, Publishers, 182, Chidambara Nagar, Nagercoil-629 002.
2. S.A.Choudham, A First Course in Graph Theory, Macmillan India Ltd.
3. Robin J.Wilson, Introduction to Graph Theory, Longman Group Ltd.
4. J.A.Bondy and U.S.R. Murthy, Graph Theory with Applications, Macmillon, London.