

**Rupesh Rambhau Atram: Some Basic Graphs in Graph Theory**

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**Research  
and  
Development**

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## Index

<i>Sr. No.</i>	<i>Title and Author</i>	<i>Pg. No.</i>
	Editorial - Dr. Pavan Mandavkar	03
	Index	04
1	New Streams: Future Education Systems and Challenges - <b>Dr. Savita V. Nichit</b>	07-12
2	Optical properties and photoluminescence study of Sm <sup>3+</sup> activated BaAl <sub>2</sub> B <sub>2</sub> O <sub>7</sub> phosphor by combustion method - <b>R. S. Palaspagar</b>	13-19
3	A Study on Structural, Optical, and Electrochemical Properties of Nanoparticles of Polyaniline along with its application - <b>Dr. Prachi R. Bonde</b>	20-32
4	An overview: Green synthetic approach towards schiff's base metal complexes - <b>S. R. Khandekar</b>	33-41
5	An Introduction to Intellectual Property Rights and their Importance - <b>Dr. Sharayu Bonde</b>	42-55
6	Nanoscience in Practice: A Deep Dive into Modern Healthcare Solutions - <b>Jawahar M. Bodulwar</b>	56-62
7	Sunrise of Innovation: The Evolution of Solar Cells - <b>Sakharam B. Sangale</b>	63-71
8	Navigating the Post-Pandemic Landscape: An Ecology of Survival - <b>Dr. Antara Saha</b>	72-80
9	Some Basic Graphs in Graph Theory - <b>Rupesh Rambhau Atram</b>	81-88

# Some Basic Graphs in Graph Theory

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## Abstract

Graph theory, a captivating field at the intersection of mathematics and network science, provides a powerful framework for modelling and understanding complex relationships. This chapter serves as a gateway to the world of graphs, beginning with the foundational elements such as types, representation, and terminology.

Moving beyond the basics, we explore connectivity patterns, cycles, and critical structural components like bridges and cut vertices. As we unravel these concepts, the chapter introduces the way for a comprehensive journey into advanced topics, real-world applications, and algorithmic problem-solving techniques. From social networks to transportation systems, the abstract relationships within graphs this chapter aims to illuminate the essence of graph theory and its pervasive impact on modern problem-solving and analysis.

**Key Words:** Königsberg problem, Complete Graph, Planar Graphs

## Introduction

Graph theory, a captivating branch of mathematics, unveils a world of interconnectedness and structure, where relationships and dependencies are visualized through nodes and edges. Originating from the study of the renowned Seven Bridges of Königsberg problem in the 18th century, graph

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