MANIPAL UNIVERSITY
JAIPUR
(University under Section 2(f) of the UGC Act)

FIRST STATE PRIVATE UNIVERSITY IN RAJASTHAN
A+ NAAC
3.28 SCORE

B.TECH SECOND YEAR

ACADEMIC YEAR: 2022-2023

COURSE NAME: ENGINEERING MATHEMATICS-III

COURSE CODE : MA 2101

LECTURE SERIES NO :

CREDITS : 3

MODE OF DELIVERY : ONLINE (POWER POINT PRESENTATION)

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PROPOSED DATE OF DELIVERY:

MANIPAL UNIVERSITY
JAIPUR

VISION
Global Leadership in Higher Education and Human Development

MISSION
- Be the most preferred University for innovative and interdisciplinary learning
- Foster academic, research and professional excellence in all domains
- Transform young minds into competent professionals with good human values

VALUES
Integrity, Transparency, Quality,
Team Work, Execution with Passion, Humane Touch

SESSION OUTCOME

" TO UNDERSTAND THE CONCEPT OF GRAPHS AND ITS PROPERTIES"

ASSESSMENT CRITERIA'S

ASSIGNMENT

QUIZ

MID TERM EXAMINATION –I & II

END TERM EXAMINATION

PROGRAM OUTCOMES MAPPING WITH CO2

PO 1

ENGINEERING KNOWLEDGE: APPLY THE KNOWLEDGE OF MATHEMATICS, SCIENCE, ENGINEERING FUNDAMENTALS, AND AN ENGINEERING SPECIALIZATION TO THE SOLUTION OF COMPLEX ENGINEERING PROBLEMS.

Introduction

What is a graph G?

It is a pair G = (V, E), where

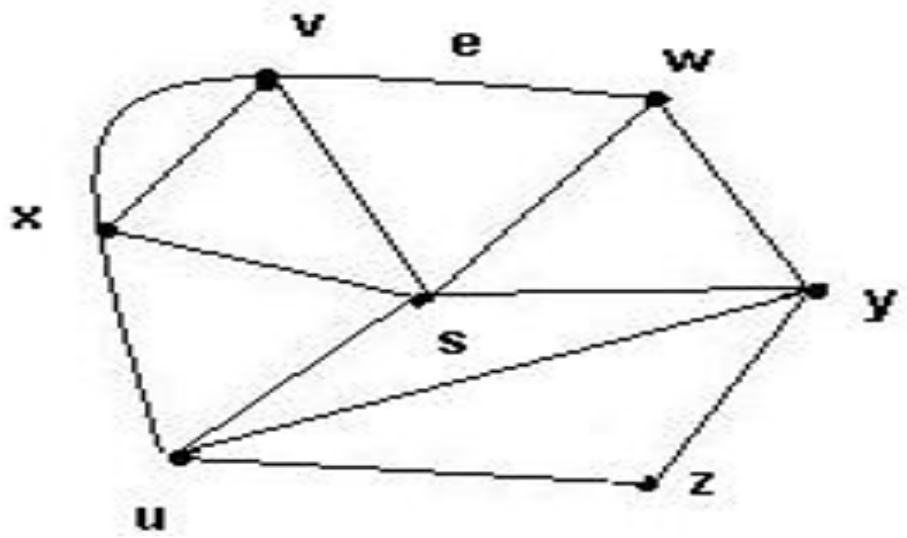
V = V(G) = set of vertices

E = E(G) = set of edges

Example:

V = {s, u, v, w, x, y, z}

E = {(x,s), (x,v), (x,v), (x,u), (v,w), (s,v), (s,u), (s,w), (s,y), (w,y), (u,y), (u,z),(y,z)}



Special edges

Parallel edges

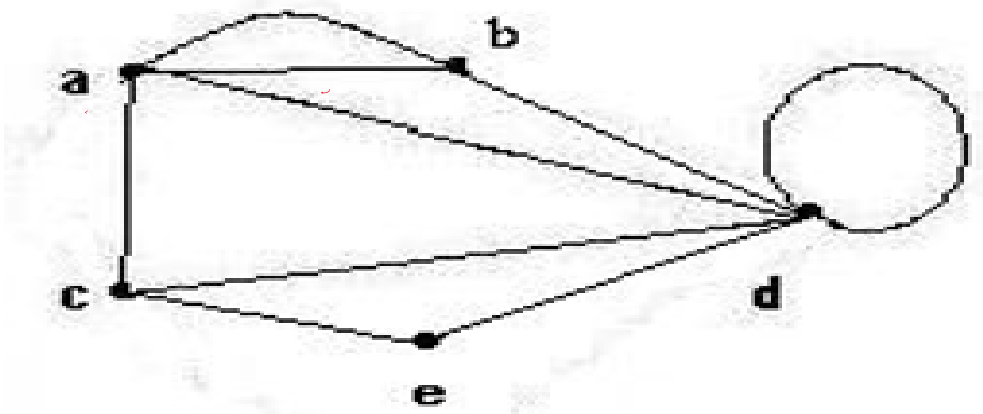
Two or more edges joining a pair of vertices

in the example, **a** and **b** are joined by two parallel edges

Loops

An edge that starts and ends at the same vertex

In the example, vertex **d** has a loop



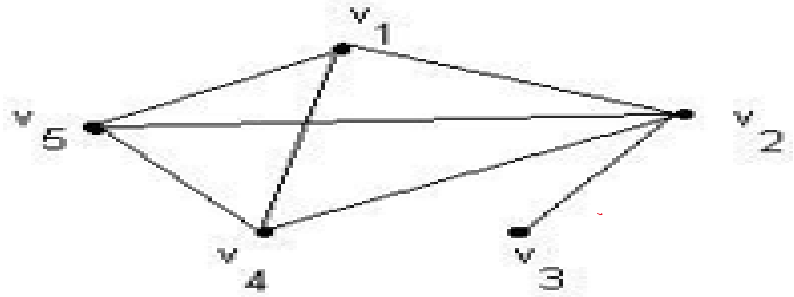
Special graphs

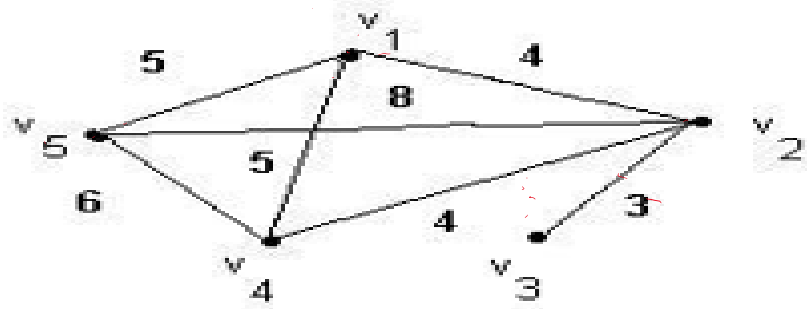
Simple graph

A graph without loops or parallel edges.

Weighted graph

A graph where each edge is assigned a numerical label or "weight".





Directed graphs (digraphs)

G is a *directed graph* or *digraph* if each edge has been associated with an ordered pair of vertices, i.e. each edge has a direction