

## Section - 1

Ans-1 In graph, a graph representation is a technique to store graph into the memory of Computer. To represent a graph, we just need the set of vertices, and for each vertex the set of vertices, and for each vertex the neighbours of the vertex (vertices which is directly connected to it by an edge). If it is a weighted graph, then the weight will be associated with each edge.

There are different ways to optimally represent a graph, depending on the density of it's edges, type of operations to be performed and case of use.

1. Adjacency Matrix
2. Incidence Matrix

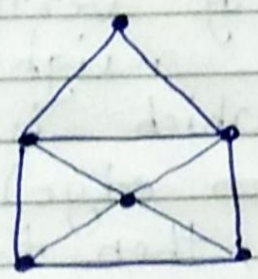
### Euler Paths and Circuit:

An Euler path, in a graph or multigraph is a walk through the graph which uses every edge exactly once. An "Euler circuit" is an Euler path which starts and stops at the same vertex. Our goal is to find a quick way to check

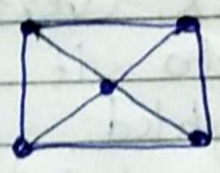


Whether a graph (or multigraph) has an Euler path or circuit.

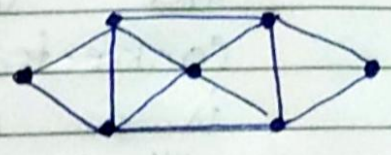
Which of the graphs below have Euler paths which have Euler Circuits.



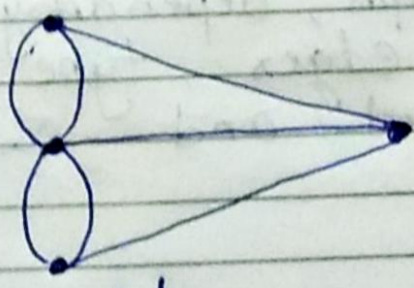
(a)



(b)



(c)



(d)