Thursday 14-12-2023

Properties Of Graph Theory

→ Distance

no. of edges in a shortest path.

$d(X, Y)$

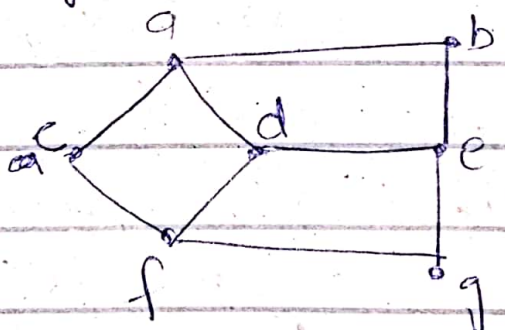
→ Eccentricity of a vertex

max distance of a vertex to all other vertices.

$e(v)$

highest distance is the eccentricity.

eccentricity of "a" is 3.



$e(b) =$, $e(c) =$

$e(g) =$, $e(d) =$

$e(f) =$ 3

$e(e) =$

→ Radius of connected graph
minimum eccentricity from all the vertices.
r(G)

→ Diameter of graph
maximum eccentricity from all the vertices.
d(G)

→ Central point
if eccentricity is equal to radius then it is called central point of graph.
r(v) = e(v)
e(d) = r(d) = 2

Centre
→ set of all central points of the graph
{'d'} is the centre of graph

→ Circumference
total no. of edges in the longest cycle is known as the circumference

→ Girth
total no. of edges in the shortest cycle of graph is known as girth.

Sum of degrees of vertices

$$\sum_{i=1}^{n} \deg(v_i) = 2|E|$$