DSA TUTORIAL: GRAPHS

1) A graph is a collection of.... ?
[A] Row and columns
[B] Vertices and edges
[C] Equations
[D] None of these

2) The degree of any vertex of graph is .... ?
[A] The number of edges incident with vertex
[B] Number of vertex in a graph
[C] Number of vertices adjacent to that vertex
[D] Number of edges in a graph

(3) A graph with no edges is known as empty graph. Empty graph is also known as... ?
[A] Trivial graph
[B] Regular graph
[C] Bipartite graph
[D] None of these

4) The maximum degree of any vertex in a simple graph with 5 vertices is
[A] 4
[B] 6
[C] 9
[D] 5

5) The complete graph with four vertices has k edges where k is

[A] 3
[B] 4
[C] 5
[D] 6

6) In any undirected graph the sum of degrees of all the nodes
A Must be even
B Are twice the number of edges
C Must be odd
D Need not be even

7) A graph G is called a ..... if it is a connected acyclic graph
[A] Cyclic graph
[B] Regular graph

[C] Tree
[D] Not a graph

8) Length of the walk of a graph is
A The number of vertices in walk W
B The number of edges in walk W
C Total number of edges in a graph
D Total number of vertices in a graph

9) Indicate which, if any, of the following five graphs G = (V,E,φ), |V| = 5, is not connected.
   (a) φ=1 2 3 4 5 6 {1,2} {1,2} {2,3} {3,4} {1,5} {1,5}
   (b) φ=b a e d c f {4,5} {1,3} {1,3} {2,3} {2,5} {4,5}
   (c) φ=b f e d c a {4,5} {1,3} {1,3} {2,3} {2,4} {4,5}
   (d) φ=a b c d e f {1,2} {2,3} {1,2} {2,3} {3,4} {1,5}
   (e) φ=a b c d e f

10) A graph with all vertices having equal degree is known as a
(a) Multi graph
(b) complete graph
(c) Regular graph
(d) Simple graph

Solutions:

Ans 1: Vertices and edges
Ans 2: The number of edges incident with vertex
Ans 3: Trivial graph
Ans 4: 4
Ans 5: 6
Ans 6: B
Ans 7: C
Ans 8: B
Ans 9: e
Ans 10: c