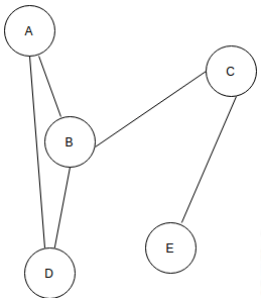
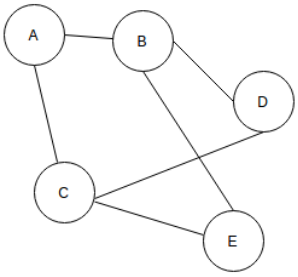
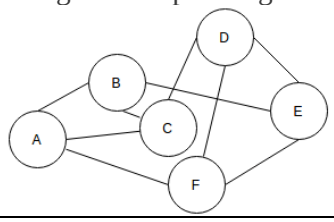
Course/Branch : B.E/CSE /	**Year / Semester** :II/III	Format No.	NAC/TLP-07a.13
Subject Code :CS8391	**Subject Name** :Data Structures	Rev. No.	02
Unit No :4	**Unit Name** : Non-Linear Data Structures – Graphs	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1.	Which of the following statements for a simple graph is correct? **a) Every path is a trail** b) Every trail is a path c) Every trail is a path as well as every path is a trail d) Path and trail have no relation	L1
2.	In the given graph identify the cut vertices.  a) B and E b) C and D c) A and E **d) C and B**	L3
3.	For the given graph(G), which of the following statements is true?  a) G is a complete graph b) G is not a connected graph **c) The vertex connectivity of the graph is 2** d) The edge connectivity of the graph is 1	L3
4.	What is the number of edges present in a complete graph having n vertices? a) (n*(n+1))/2 **b) (n*(n-1))/2** c) n d) Information given is insufficient	L2
5.	The given Graph is regular. 	L4

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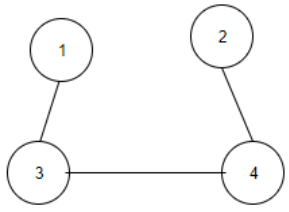
	a) True b) False	
6.	Which of the following is true? a) A graph may contain no edges and many vertices **b) A graph may contain many edges and no vertices** c) A graph may contain no edges and no vertices d) A graph may contain no vertices and many edges	L2
7.	For a given graph G having v vertices and e edges which is connected and has no cycles, which of the following statements is true? a) v=e **b) v = e+1** c) v + 1 = e d) v = e-1	L1
8.	For which of the following combinations of the degrees of vertices would the connected graph be eulerian? **a) 1,2,3** b) 2,3,4 c) 2,4,5 d) 1,3,5	L3
9.	Which of the following ways can be used to represent a graph? a) Adjacency List and Adjacency Matrix b) Incidence Matrix **c) Adjacency List, Adjacency Matrix as well as Incidence Matrix** d) No way to represent	L1
10.	The number of elements in the adjacency matrix of a graph having 7 vertices is _____ a) 7 b) 14 c) 36 **d) 49**	L3
11.	What would be the number of zeros in the adjacency matrix of the given graph?  a) 10 **b) 6** c) 16 d) 0	L4
12.	Adjacency matrix of all graphs are symmetric. **a) False** b) True	L2
13.	Which of these adjacency matrices represents a simple graph? a) [[1, 0, 0], [0, 1, 0], [0, 1, 1]] b) [[1, 1, 1], [1, 1, 1], [1, 1, 1]]	L3

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	c) [[0, 0, 1], [0, 0, 0], [0, 0, 1]] **d) [[0, 0, 1], [1, 0, 1], [1, 0, 0]]**	
14.	Incidence matrix and Adjacency matrix of a graph will always have same dimensions? a) True **b) False**	L1
15.	The column sum in an incidence matrix for a directed graph having no self loop is _____ **a) 0** b) 1 c) 2 d) equal to the number of edges	L2
16.	If a Graph Structured Stack contains {1,2,3,4} {1,5,3,4} {1,6,7,4} and {8,9,7,4}, what would be the source and sink vertices of the DAC? a) Source – 1, 8 Sink – 7,4 b) Source – 1 Sink – 8,4 **c) Source – 1, 8 Sink – 4** d) Source – 4, Sink – 1,8	L3
17.	For the given conditions, which of the following is in the correct order of increasing space requirement? i) Undirected, no weight ii) Directed, no weight iii) Directed, weighted iv) Undirected, weighted **a) ii iii i iv** b) i iii ii iv c) iv iii i ii d) i ii iii iv	L5
18.	In which case adjacency list is preferred in front of an adjacency matrix? a) Dense graph **b) Sparse graph** c) Adjacency list is always preferred d) Complete graph	L1
19.	The number of possible undirected graphs which may have self loops but no multiple edges and have n vertices is _____ a) $2^{((n*(n-1))/2)}$ b) $2^{((n*(n+1))/2)}$ c) $2^{((n-1)*(n-1))/2)}$ d) $\mathbf{2^{((n*n)/2)}}$	L2
20.	Given a plane graph, G having 2 connected component, having 6 vertices, 7 edges and 4 regions. What will be the number of connected components? a) 1 **b) 2** c) 3 d) 4	L1
21.	Number of vertices with odd degrees in a graph having a eulerian walk is _____ a) 0 b) Can't be predicted c) 2	L3

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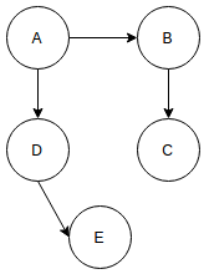
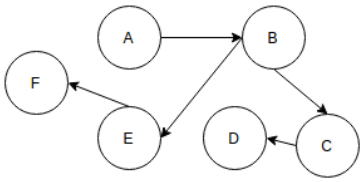
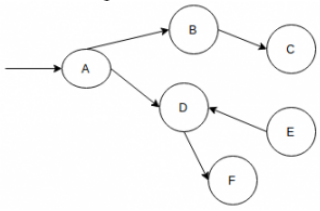
	d) either 0 or 2	
22.	How many of the following statements are correct? i) All cyclic graphs are complete graphs. ii) All complete graphs are cyclic graphs. iii) All paths are bipartite. iv) All cyclic graphs are bipartite. v) There are cyclic graphs which are complete. a) 1 **b) 2** c) 3 d) 4	L3
23.	What would be the DFS traversal of the given Graph?  **a) ABCED** b) AEDCB c) EDCBA d) ADECB	L4
24.	Which of the following is not a topological sorting of the given graph?  a) A B C D E F b) A B F E D C c) A B E C F D **d) A B C D F E**	L2
25.	What sequence would the BFS traversal of the given graph yield?  a) A F D B C E b) C B A F E D **c) A B D C E F** d) E F D C B A	L2

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26.	What is the value of the sum of the minimum in-degree and maximum out-degree of an Directed Acyclic Graph? a) Depends on a Graph **b) Will always be zero** c) Will always be greater than zero d) May be zero or greater than zero	L3
27.	Which of the given statement is true? a) All the Cyclic Directed Graphs have topological sortings b) All the Acyclic Directed Graphs have topological sortings c) All Directed Graphs have topological sortings **d) All the cyclic directed graphs hace non topological sortings**	L4
28.	Every Directed Acyclic Graph has at least one sink vertex. **a) True** b) False	L2
29.	An undirected graph is called _____if there are two vertex-disjoint paths between any two vertices. a) Cyclic b) Eulerian c) **Bi-connected** d) Topological sort	L3
30.	For the adjacency matrix of a directed graph the row sum is the _____ degree and the column sum is the _____ degree. a) in, out **b) out, in** c) in, total d) total, out	L1