Graph Theory

Question Bank

Helping Others Have Special taste

Questions

1) Graph used to ….

a- Model relation between object
b- Generally network
c- Practical problems
d- All the above

2) Vertices represent …..

a- locations b- connection c- bridges d- none of these

3) Edges represent …..

a- locations b- connection c- bridges d- none of these

4) Structure of graph consists of …..

a- Collection of object b- links c- both of these d- none of these

5) ….. is a mathematical structure for representing relationship

a- vertices b- edges c- nodes d- graph

6) ….. consists of a set of nodes or vertices connected by edges or arcs

a- vertices b- edges c- nodes d- graph

7) The term graph generally refers to …… graph unless specified otherwise

a- undirected b- directed c - weighted d – all of the above

8) Graph is a pair ….

a- G = (V,V) b - G = (E,V) c - G = (V, E) d – none of these

9) ….. is a particular position that is located in space , space can be one dimensional , two dimensional or three

a- Point b- line c- edge d- graph

10) ….. is a connection between two points

a- Point b- line c- vertex d- graph

11) ….. is a synonym of point in graph

a- vertex b- line c- edge d- graph

12) …. Called node , point or junction and donated by alphabet value or numbers

a- vertex b- line c- edge d- graph

13) ……. Can be directed or undirected

a- vertex b- graph c- edge d- b and c

14) ….. is a connection between two vertices

a- Point b- junction c- edge d- graph

15) Two nodes are called …… if there is an edge between them

a- adjacent b- nonadjacent c- labeled d- directed

16) ……. graph if each edge has been associated an ordered pair of vertices , each edge has direction

a- directed (digraph) b- undirected c- weighted d – complex

17) ……. Graph his edges have no direction

a- directed (digraph) b- undirected c- weighted d – complex

18) two or more edges joined a pair of vertices …….

a- loop b- multiple edges c- parallel edges d- b and c

19) an edge that starts and ends at the same vertex

a- loop b- self loop c- parallel edge d- a and b

20) an edge from a node to itself is called a ……. It is in a directed graphs

a- loop b- self loop c- parallel edge d- simple edge

21) …… graph without loops or parallel edges

a- connected b- complex c- weighted d- simple

22) ……. Graph when each edge is assigned a numerical value or label

a- regular b- tree c- weighted d – complex

23) ……. Contains multiple edges but no loops

a- simple b- multigraph c- weighted d – complex

24) ……..is the number of vertices in the graph

a- order b- size c- degree d- all the above

25) ……. Is the number of edges in the graph

a- order b- size c- degree d- all the above

26) …….. number of edges connected to a node

a- order b- size c- degree d- all the above

27) node is called ……. If it has a positive outdegree and zero indegree

a- sink b- source c- weight d- none of these

28) node is called ……. If it has a positive indegree and zero outdegree

a- sink b- source c- round d- none of these

29) for a directed graph loop add …… To the indegree and ……To outdegree

a- one , one b- one , two c- two , one d- two , two

30) for a undirected graph loop add ……. To degree

a- zero b- one c- two d- three

31) in the first theorem of graph sumation of degree equal to …..

a- number of edges
b- double number of edges
c- half number of edges
d- triple number of edges

32) …….is the number of edges incident to the vertex

a- order b- size c- degree d- all the above

33) …… contain multiple edges and loops

a- pseudograph b- multigraph c- weighted d- simple

34) ….. a graph with finite number of vertices and edges

a- finite b- labeled c- simple d- infinite

35) ….. a graph with infinite number of vertices and edges

a- finite b- labeled c- simple d- infinite

36) …… its edges have some names and data

a- labeled graph b- tree graph c- regular graph d- none

37) an edge is said to be …… with vertices if its join

a- incident b- adjacent c- order d- a , b

38) vertex is said …… if no edges is incident on it

a- connected b- adjacent c- isolated d- pendent

39) vertex with degree one is called a …….

a- connected b- adjacent c- isolated d- pendent

40) if there is a simple path between any two of its nodes the graph called….

a- complete b- connected c- regular d- tree

41) if every node in graph is adjacent to every other nodes the graph called ….

a- complete b- connected c- regular d- tree

42) if the edge set of any graph with (n) vertices is an empty set the graph called …..

a- complete b- connected c- regular d- null

43) ……. Is a connected graph with no cycle if a graph has m nodes then there are m-1 edges

a- complete graph b- connected graph

c- simple graph d- tree graph

44) if the degree of each vertex is the same in any graph then the graph said ….

a- complete b- connected c- regular d- null

45) What is the number of unlabeled simple directed graph that can be made with 1 or 2 vertices?

a) 2 b) 4 c) 5 d) 9

46) All Graphs have unique representation on paper.

a) True
b) False

47) Which of the following statement is true.

a) There exists a Simple Graph having 10 vertices such that minimum degree of the graph is 0 and maximum degree is 9
b) There exists a MultiGraph having 10 vertices such that minimum degree of the graph is 0 and maximum degree is 9
c) There exists a MultiGraph as well as a Simple Graph having 10 vertices such that minimum degree of the graph is 0 and maximum degree is 9
d) None of the mentioned

48) A graph is a collection of.... ?

a) Row and columns
b) Vertices and edges
c) Equations
d) None of these

49) The degree of any vertex of graph is .... ?

a) A The number of edges incident with vertex
b) B Number of vertex in a graph
c) C Number of vertices adjacent to that vertex
d) D Number of edges in a graph

50) A graph with no edges is known as empty graph. Empty graph is also known as... ?

a) A Trivial graph
b) B Regular graph
c) C Bipartite graph
d) D None of these

51) If the origin and terminus of a walk are same, the walk is known as...?

a) Open
b) Closed
c) Path
d) None of these

52) 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

53) In a graph if e=(u, v) means

a) u is adjacent to v but v is not adjacent to u
b) e begins at u and ends at v
c) u is processor and v is successor
d) both b and c

54) A graph with n vertices will definitely have a parallel edge or self loop if the total number of edges are

a) greater than n–1
b) less than n(n–1)
c) greater than n(n–1)/2
d) less than n2/2

55) A vertex of a graph is called even or odd depending upon

a) Total number of edges in a graph is even or odd
b) Total number of vertices in a graph is even or odd
c) Its degree is even or odd
d) None of these

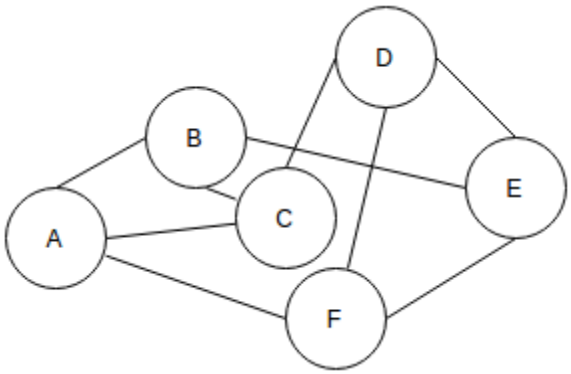
56) The maximum degree of any vertex in a simple graph with n vertices is

a) n–1
b) n+1
c) 2n–1
d) n

57)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

58)The given Graph is regular.



a) True
b) False

59) In a simple graph, the number of edges is equal to twice the sum of the degrees of the vertices.

a) True
b) False

60)Which of the following properties does a simple graph not hold?

a) Must be connected
b) Must be unweighted
c) Must have no loops or multiple edges
d) Must have no multiple edges

61)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

62) 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

63)A graph with all vertices having equal degree is known as a _____

a) Multi Graph
b) Regular Graph
c) Simple Graph
d) Complete Graph

64)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

65)What is the number of vertices of degree 2 in a path graph having n vertices,here n>2.
a) n-2
b) n
c) 2
d) 0

66)All trees with n vertices consists of n-1 edges.
a) True
b) False

67) A graph having an edge from each vertex to every other vertex is called a _____
a) Tightly Connected
b) Strongly Connected
c) Weakly Connected
d) Loosely Connected

Answers

Question	Answer
1	All the above
2	locations
3	connection
4	both of these
5	graph
6	graph
7	undirected
8	G = (V, E)
9	Point
10	line
11	vertex
12	vertex
13	b and c
14	edge
15	adjacent
16	directed (digraph)

17	undirected
18	b and c
19	a and b
20	self loop
21	simple
22	weighted
23	multigraph
24	order

25	size
26	degree
27	source
28	sink
29	one , one
30	two
31	double number of edges
32	degree
33	pseudograph
34	finite
35	infinite
36	labeled graph
37	incident
38	isolated
39	pendent
40	connected
41	complete
42	null
43	tree graph
44	regular
45	4
46	False
47	b
48	Vertices and edges
49	The number of edges incident with vertex
50	Trivial graph
51	Closed

52	Tree
53	both b and c
54	greater than n–1
55	Its degree is even or odd
56	n–1
57	b) (n*(n-1))/2
58	a) True
59	b) False
60	Must be connected
61	A graph may contain no edges and many vertices
62	b) v = e+1
63	Regular Graph
64	2
65	n-2
66	True
67	Tightly Connected

We Hope we could Help You

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