Exam: MST-II_Nov-2021_CS3BS03 Discrete Mathematics_Reschedule

Discrete Mathematics (T)
0/40

1 Not Answered

What is the parent for a node ‘w’ of a complete binary tree in an array representation when w is not 0?

✔ A.	floor(w-1/2)
B.	ceil(w-1/2)
C.	w-1/2
D.	w/2

2 Not Answered

A group is said to be abelian if it is

A.	Monoid
B.	Semi Group
C.	Group
✔ D.	All of these

3 Not Answered

Let (A7, ⊗7)=({1, 2, 3, 4, 5, 6}, ⊗7) is a group. It has two sub groups X and Y. X={1, 3, 6}, Y={2, 3, 5}. What is the order of union of subgroups?

A.	65
✔ B.	5
C.	32

D.	18

4 Not Answered

Let K be a group with 8 elements. Let H be a subgroup of K and H<K. It is known that the size of H is at least 3. The size of H is _____

A.	89
B.	2
C.	3
✓ D.	4

5 Not Answered

A graph with single vertex is called_____.

✓ A.	Trivial graph
B.	Regular graph
C.	Bipartite graph
D.	None of these

6 Not Answered

A group G, ({0}, +) under addition operation satisfies which of the following properties?

A.	identity, multiplicity and inverse
✓ B.	closure, associativity, inverse and identity
C.	multiplicity, associativity and closure
D.	inverse and closure

7 Not Answered

What is the maximum number of edges in a bipartite graph having 12 vertices?

✔ A.	36
B.	30
C.	24
D.	40

8 Not Answered

Which of the following graph is non planner?

A.	K5
B.	K6
✔ C.	Both
D.	None

9 Not Answered

Let (A,*) is a group where A= {0,1,2,3,4,5,6} with *= (a+b) mod 7. Then order of group is

A.	6
✔ B.	7
C.	5
D.	none

10 Not Answered

The set of rational numbers form an abelian group under _____

A.	Association
B.	Closure
✔ C.	Multiplication

D.	Addition

11 Not Answered

Maximum number of node in complete binary tree of height 5 and root is at height 0.

A.	32
B.	31
C.	64
✓ D.	63

12 Not Answered

Let (A,*) is a group where A {0,1,2,3,4,5} with * (a+b) mod 6. Then order of group is

A.	5
✓ B.	6
C.	7
D.	none

13 Not Answered

Two labeled trees are isomorphic if _____

A.	graphs of the two trees are isomorphic
B.	the two trees have same label
✓ C.	graphs of the two trees are isomorphic and the two trees have the same label
D.	graphs of the two trees are cyclic

14 Not Answered

A graph without edges is called_____.

A.	Trivial graph
B.	Regular graph
C.	Bipartite graph
✔ D.	Null graph

15 Not Answered

A path in graph G, which contains every vertex of G once and only once ?

A.	Eulartour
✔ B.	Hamiltonian Path
C.	Eula Trail
D.	Hamiltion Tour

16 Not Answered

B_1: ({0, 1, 2….(n-1)}, x_m) where x_m stands for “multiplication-modulo-n” and B_2: ({0, 1, 2….n}, x_n) where x_n stands for “multiplication-modulo-m” are the two statements. Both B_1 and B_2 are considered to be _____

A.	groups
✔ B.	semigroups
C.	subgroups
D.	associative subgroup

17 Not Answered

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

A.	more than n
B.	more than n-1
✔ C.	more than n(n-1)/2

D.	more than n(n+1)/2

18 Not Answered

A complete bipartite graph is a one in which each vertex in set X has an edge with set Y. Let n be the total number of vertices. For maximum number of edges, the total number of vertices hat should be present on set X is?

A.	n
✓ B.	n/2
C.	n/4
D.	Information given is insufficient

19 Not Answered

Which of the following graph is non planner?

A.	K8K8
B.	K3,4K3,4
✓ C.	Both
D.	None

20 Not Answered

Let (A,*) is a group where A= {0,1,2,3,4,5,6,7,8,9,10,11,12} with *= (a+b) mod 13 . What is order of element 12?

A.	1
✓ B.	13
C.	5
D.	7

21 Not Answered

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

A.	e begins at u and ends at v
B.	u is processor & v is successor
✔ C.	Both
D.	None of these

22 Not Answered

How many unique colors will be required for proper vertex coloring of an empty graph having n vertices?

A.	0
B.	n
C.	2
✔ D.	1

23 Not Answered

How many binary tree possible with 3 distinct labelled node?

✔ A.	30
B.	15
C.	5
D.	None

24 Not Answered

Let (A,*) is a group where A= {0,1,2,3,4} with *= (a+b) mod 5. Which of the following is/are true about group (A.*)?

A.	It is Group
B.	It is abelian Group
✔ C.	Both

D.	None

25 Not Answered

Let (A,*) is a group where A {0,1,2,3,4,5,6,7,8,9,10,11,12} with * (a+b) mod 13 . What is order of element 1?

A.	1
✓ B.	13
C.	5
D.	7

26 Not Answered

_____ graph on n, m nodes, denoted Kn,m, is the simple bipartite graph with nodes S1 {a1, . . . , an} and S2 {b1, . . . , bm} and with edges connecting each node in S1 to every node in S2.

✓ A.	The complete bipartite
B.	Semi-Directed
C.	Planner
D.	UnPlanner

27 Not Answered

Prim’s algorithm can be implemented using _____

A.	a stack data structure
B.	radix sort
✓ C.	priority queue data structure
D.	bubble sort

28 Not Answered

G be a finite size group of 84 elements. The size of largest possible proper subgroup of G is.....

A.	{1,2,3,4,6,7,12,14,21,28,42,84}
B.	{2,3,4,6,7,12,14,21,28,42}
✓ C.	{42}
D.	{84}

29 Not Answered

Let Q+ be the set of all positive rationals. Then, the operation $\star$ on Q+ defined by $a \star b=2ab$ for all $a,b \in Q+$ is?

A.	Commutative but not associative
B.	Associative but not commutative
C.	Neither commutative nor associative
✓ D.	Both Commutative and associative

30 Not Answered

Which of the following is a group?

A.	[N, *] where N is set of natural number
B.	[Z, -] where Z is set of integer
C.	[R, *] where R is set of real number
✓ D.	None of these

31 Not Answered

Let (A,*) is a group where A= {0,1,2,3,4,5} with *= (a+b) mod 6. Which of the following is/are true about group (A.*)?

A.	It is cyclic group
B.	It is abelian Group

✓ C.	Both
D.	None

32 Not Answered

A cycle on n vertices is isomorphic to its complement. What is the value of n?

A.	6
B.	8
C.	12
✓ D.	None of these

33 Not Answered

What is the inverse of – ı If G = { 1, -1, i, – i } is group under multiplication?

A.	-1
B.	1
✓ C.	i
D.	None of the above

34 Not Answered

Every abelian group is

A.	Monoid
B.	Semi Group
C.	Group
✓ D.	All of these

35 Not Answered

Which of the following traversal techniques listed the node of binary tree search inassending order

A.	Pre order
B.	Post order
✓ C.	in order
D.	root order

36 Not Answered

We have a group of 15 elements. What will be order of its subgroup of at least 4 elements and sub group is not equal to group itself.

✓ A.	{5}
B.	{3,5}
C.	{1,3,5}
D.	{1,3,5,15}

37 Not Answered

Vertices with maximal eccentricity is called

A.	Center
✓ B.	Periphery
C.	Radius
D.	Diameter

38 Not Answered

Which of the following statement is/are true?

✓ A.	Every cyclic group is abelian group
B.	Every abelian group is cyclic group
C.	Both

D.	None

39 Not Answered

A graph has 24 edges & degree of each vertex is K then which of the following is possible no. Of vertices.

A.	20
B.	15
C.	10
✓ D.	8

40 Not Answered

We have a group G of 15 elements. Which of the following order subgroup of group G is not possible?

A.	4
B.	7
C.	8
✓ D.	All of these