Online Assessment (Even Sem/Part-I/Part-II Examinations 2019 - 2020

Course Name - Discrete Structures
Course Code - BCA202/GEBS201/ BCS202/ BCSC202

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Answer all the questions. Each question carry one mark.

9. 1. If n pigeonholes are occupied by n+1 pigeons, then at least _____ pigeonhole is occupied by more than one pigeon.

   Mark only one oval.

   - 1
   - 2
   - n
   - None of these

10. 2. The number of committees of 2 boys and 3 girls that can be formed out of 7 boys and 6 girls is

    Mark only one oval.

    - 21
    - 20
    - 420
    - 50400

11. 3.The least number of people 4 of whom will have same birthday of the week is

Mark only one oval.

- 18
- 42
- 28
- 22

12. 4. The generating function for the sequence <1,-1,1,-1,...> is

Mark only one oval.

- Option 1: $(1-x)^{-1}$
- Option 2: $(1+x)^{-1}$
- Option 3: $(1+2x)^{-\frac{1}{2}}$
- Option 4: $(1-2x)^{-\frac{1}{2}}$

13. 5. Let A={1, 2, 3} and B={2,3,4}. Find A-B from below.

Mark only one oval.

- {1, 4}
- {1}
- {4}
- {-1}

14. 6.

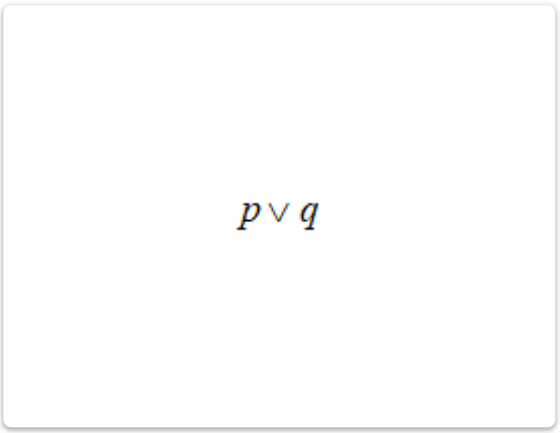
$If\ {}^{2n}C_3 : {}^{n}C_2 = 44 : 33\ then\ the\ value\ of\ n\ is$

Mark only one oval.

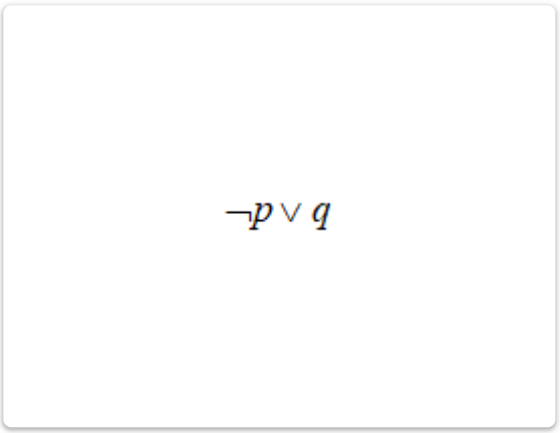
- 6
- 5
- 2
- 7

15. 7. Let p be a proposition ' He is intelligent' and q be a proposition ' He is tall' . The symbolic form of the statement ' He is intelligent and tall' is

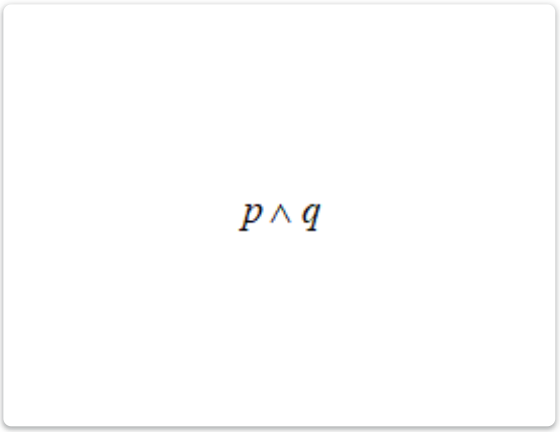
Mark only one oval.



Option 1



Option 2



Option 3

None of these

16. 8. How many elements are there for the power set of the power of an empty set.

Mark only one oval.

2

4

1

0

17. 9. A function from A to B is called onto function if its range is

Mark only one oval.

- an empty set
- A
- B
- Neither A nor B

18. 10. The smallest set A such that A U {1, 2} = {1, 2, 3, 5, 9} is

Mark only one oval.

- {2,3,5}
- {1, 2, 5, 9}
- {3, 5, 9}
- None of the mentioned

19. 11. If a set A has 3 elements and B has 2 elements, then the number of elements of the cartesian product of A and B is

Mark only one oval.

- 5
- 6
- 4
- None of these

20. 12.

If $f(x)=\frac{ax-b}{bx-a}$ then $f(x).f\left(\frac{1}{x}\right)$ is

Mark only one oval.

- 1`
- 2
- -1
- 0

21. 13. If 32≡a(mod 17). Then the value of a+1 is equal to

Mark only one oval.

- 15
- 16
- 17
- 13

22. 14.

If $f(x-2)=2x^2+3x-5$ then $f(-1)=$

Mark only one oval.

- 0
- 2
- 1
- Other

23. 15. The number of identity element(s) in a group is:

Mark only one oval.

- 0
- 1
- finite
- infinite

24. 16. A group of three element is:

Mark only one oval.

- an abelian group
- always a non-abelian group
- does not form a group
- None of these

25. 17. The number of element(s) in the symmetric group of order n is :

Mark only one oval.

- n
- n!
- n+1
- (n+1)!

26. 18. Which of the following statements is false:

Mark only one oval.

- a. Every group of prime order is cyclic
- b. Every cyclic group is commutative
- c. Every subgroup of a cyclic group is normal
- c. Every normal group is cyclic

27. 19. In a Boolean algebra B, if a+b=b then a.b=?

Mark only one oval.

- a
- b
- a'
- Cannot be determined from the given data

28. 20. In a Boolean algebra B, l'=?

Mark only one oval.

- l
- 0
- l"
- 0'

29. 21. Binary operation on a set A is a mapping from AxA to

Mark only one oval.

- the set of all real numbers
- A
- AxA
- None of these

30. 22.Which of the following set is closed under numerical multiplication

Mark only one oval.

- {1,-1,0,2}
- {1,i}
- $\{1, \omega, \omega^2\}$
- $\{\omega, 1\}$

31. 23.

Let G be a group and $a \in G$. If $\circ(a) = 20$ then $\circ(a^4)$ is

Mark only one oval.

- 15
- 5
- 12
- 20

32. 24. The degree of an isolated vertex is

Mark only one oval.

- 0
- 1
- 2
- None of these

33. 25. The degree of the common vertex of two edges in series is

Mark only one oval.

- 0
- 1
- 2
- may be more than 2

34. 26. A tree is a

Mark only one oval.

- any connected graph
- minimally connected graph
- Euler graph
- None of these

35. 27. A binary tree has exactly

Mark only one oval.

- two vertices of degree 2
- one vertex of degree 2
- one vertex of degree 1
- one vertex of degree 3

36. 28. A connected graph with 150 vertices and 149 edges is

Mark only one oval.

- Not a minimally connected graph
- Euler graph
- Binary tree
- Tree

37. 29. Minimal spanning tree is found by

Mark only one oval.

- Dijkstra's algorithm
- Ford-Fukerson's algorithm
- Floyd algorithm
- Kruskal's algorithm

38. 30. Arithmetical minus (-) is a binary operation on

Mark only one oval.

- a. set of all integers
- b. set of positive integers
- c. set of negative integers
- All of these