1

University seat No. *

42213077

2

Re-enter seat No. *

42213077

3

Name of the candidate as per hall ticket *

SHETTY SHINIT DINESH

4

Name of the examination *

SE CE sem III (R16) SH 2020

5

Name of the course/ subject with course code *

Discrete Structures and Graph Theory/ CSC302

6

Consider the set N of positive integers, and let * denote the operation of least common multiple(lcm) on N. Which of the following sentence is True? *
(2 Points)

- (N,*) is commutative Semi group
- (N,*) is not commutative Semi group.
- None of the Above.
- (N,*) is not a Semi group.

7

Let P: We should be trustworthy. Q: We should be committed. R: We should be overconfident. Then 'We should be trustworthy or committed but not overconfident.' is best represented by? *
(2 Points)

- ~P V ~Q V R
- P V Q ∧ ~R
- P ∧ ~Q ∧ R
- P V Q ∧ R

8

Consider set of integers from 1 to 250. Find how many of these numbers are divisible by 5 or 6 but not by 8? *
(2 Points)

- 83
- 100
- 69
- 31

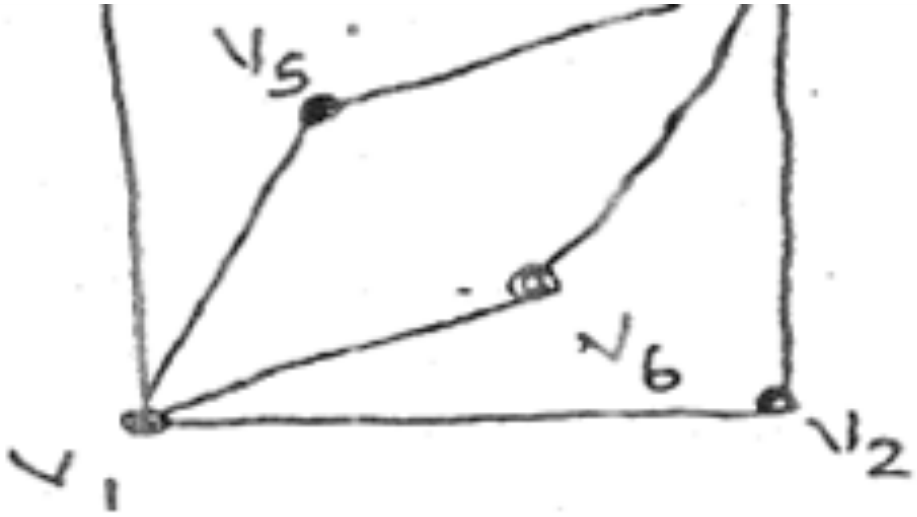
9

How many persons must be chosen in order that at least five of them will have birthdays in the same calendar month? *
(2 Points)

- 28
- 49
- 69
- 52

10

Question *
(2 Points)



Which of the following is true for abo

i) It is Eulerian Graph

ii) It is Hamiltonian Graph

- Neither i nor ii
- Only i
- Only ii
- Both i and ii

11

Consider G={1,5,7,11,17} under multiplication modulo 18. Find inverse of 5, 7and 17 ? *
(2 Points)

- 11,17 and 13
- 11,13 and 17
- 11 , 17 and 7
- 13,11 and 7

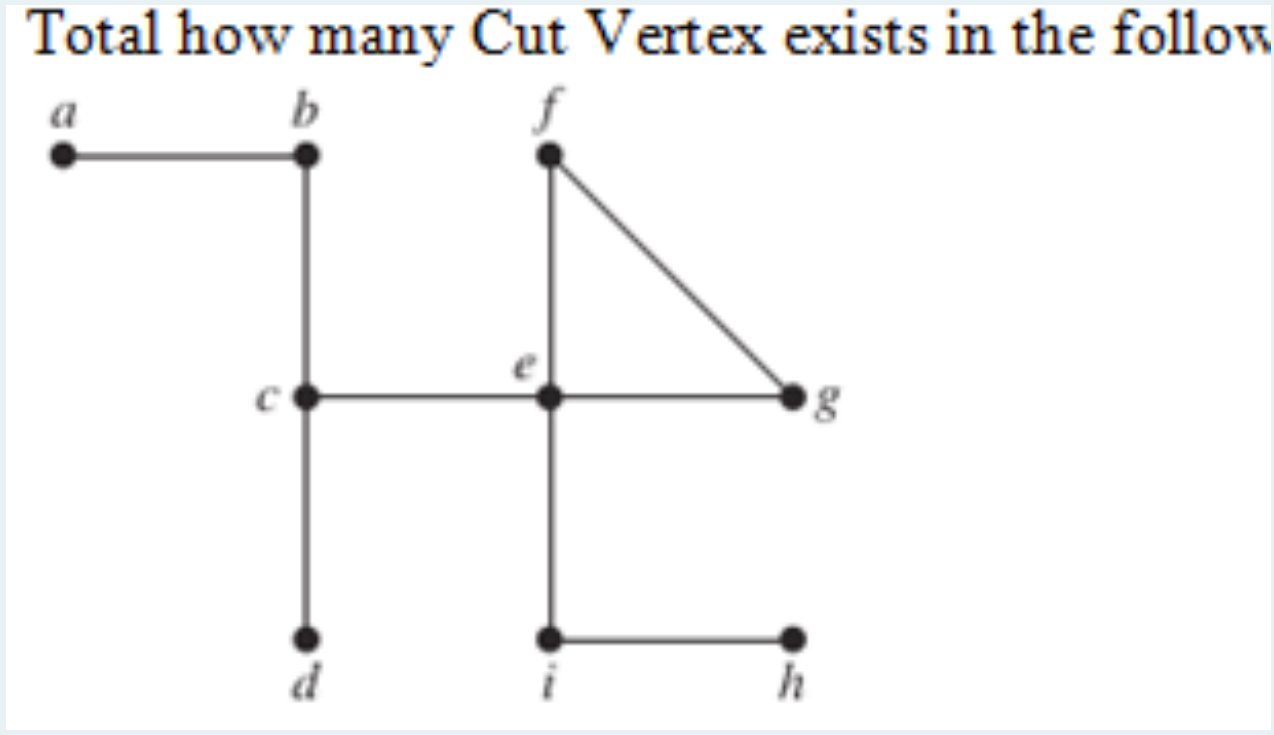
12

If every vertex of simple graph has same degree it is called as _____. *
(2 Points)

- Bipartite Graph
- Planner Graph
- Regular Graph
- Sub graph

13

Question *
(2 Points)



- 1
- 3

- [ ] 2
- [x] 4

14

Consider the following subsets of the positive integers N. Which of the following is not closed under multiplication operation? *
(2 Points)

- [ ] E={1,3,5,....}
- [ ] F={0,1,2}
- [x] C={x: x is prime}
- [ ] A={0,1}

15

Which rule of inference is used in this argument?
"No humans can fly. John is human. Therefore John can not fly." *
(2 Points)

- [ ] Existential instantiation
- [ ] Existential generalization
- [ ] Universal generalization
- [x] Universal instantiation

16

The binary relation {(a,a), (b,a), (b,b), (b,c), (b,d), (c,a), (c,b)} on the set

The binary relation {(a,a), (b,a), (b,b), (b,c), (b,d), (c,a), (c,b)} on the set {a,b,c} is _____ *
(2 Points)

- (●) neither reflexive, nor irreflexive but transitive
- ( ) reflexive, symmetric and transitive
- ( ) irreflexive, symmetric and transitive
- ( ) irreflexive and antisymmetric

17

A Poset in which every pair of elements has both a least upper bound and a greatest lower bound is termed as _____ *
(2 Points)

- ( ) Sub lattice
- (●) Lattice
- ( ) Walk
- ( ) Trail

18

How many two digits or three digits numbers can be formed using the digits 1,2,3,4,5,6,7,8 and 9 , if no digits are repeated ? *
(2 Points)

- ( ) 212
- (●) 252
- ( ) 210

24

19

Let A= {2,3,4,5,6} and let R1,R2 be relations on A such that
R1={(a,b) | a-b=2 } and
R2={(a,b)|a+1=b or a=2b}
Find the composite relation R2.R1? *
(2 Points)

{(2,3),(3,4),(4,5),(5,6)}

{(4,3),(5,4),(6,2),(6,5)}

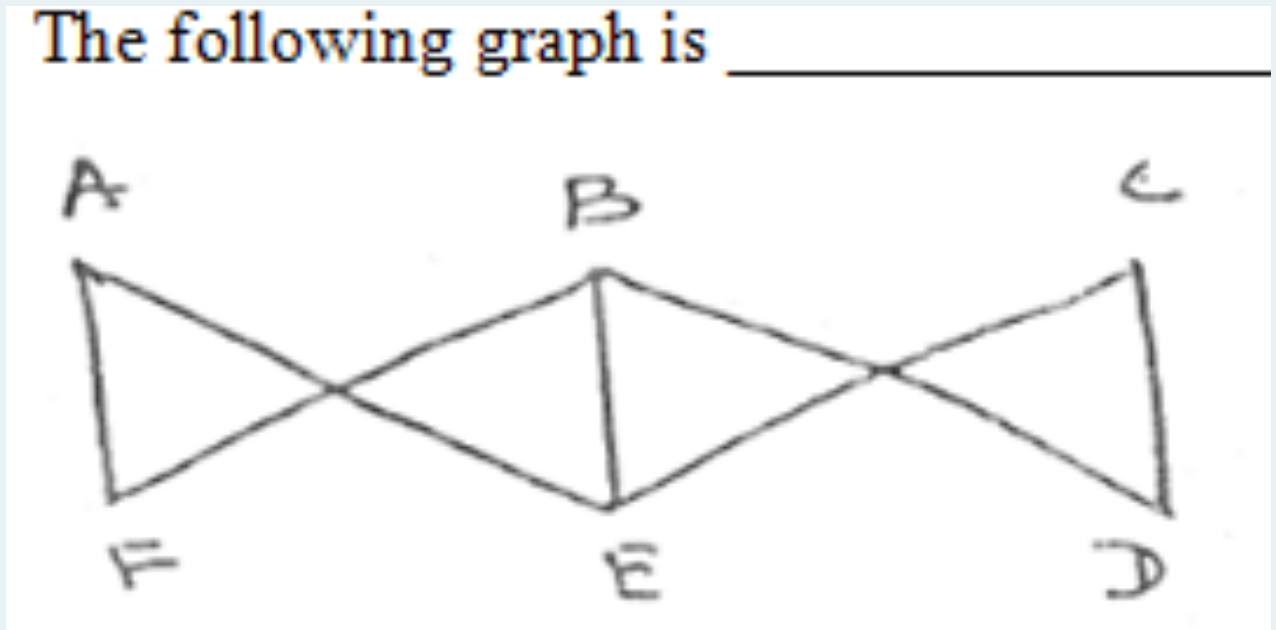
{(5,2),(6,3)}

{(3,2),(5,4),(4,3)}

20

*
(2 Points)

The following graph is _____



- ○ Eulerian but not Bipartite Graph
- ◉ Bipartite Graph
- ○ Complete Bipartite Graph
- ○ Eulerian Graph

21

The set of integers Z with binary operation '*' defined as a*b=a+b+1 for a,b ∈Z , is a group.The identity element of this group is_____. *
(2 Points)

- ○ 0
- ○ 1
- ◉ -1
- ○ 12

22

The less than relation,<, on real is *
(2 Points)

- ○ Not a partial ordering because it is not anti-symmetric and not reflexive.
- ○ A partial ordering since it is anti-symmetric and reflexive.
- ◉ Not a partial ordering because it is not asymmetric and not reflexive.
- ○ A Partial ordering since it is asymmetric and reflexive.

23

Draw the Hasse diagram of D30.
i) It is Complemented Lattice
ii) It is Distributive Lattice
Which of the above statement is True? *
(2 Points)

- (●) Both i and ii
- ( ) Neither i nor ii
- ( ) Only ii
- ( ) Only i

24

Which of the following is the correct representation of the sentence "Someone is liked by everyone ". *
(2 Points)

- (●) (∃y)(∀x) likes(x,y)
- ( ) (∃x)(∃y) likes(x,y)
- ( ) (∀x)(∀y) likes(x,y)
- ( ) (∀x)(∃y) likes(x,y)

25

State the type of function for following example
" To each country assign the number of people living in the country" *
(2 Points)

- ○ Many-One
- ◉ One-One
- ○ Many-Many
- ○ One-Many

Submit