Unit 1 : Self assessment-1

Success

1.

Which one of the following is a proposition?

- [ ] How are you?
- [ ] What time is it?
- [ ] 4+x=5
- [x] India is in Europe.

2.

What is the negation of the statement “Salman sent more than 100 text messages every day”?

- [ ] Salman sent more than 200 text messages every day.
- [ ] Salman sent less than 100 text messages but not every day.
- [x] Salman did not send more than 100 text messages every day.
- [ ] Salman did not send any text message every day.

3.

The negation of the proposition “Michael’s PC runs Linux” is

- [ ] “Michael’s PC does run Linux.”
- [ ] “Michael’s PC only run Linux.”
- [x] “Michael’s PC does not run Linux.”
- [ ] “It is not the case Michael’s PC does not run Linux.”

4.

What is the negation of the statement “Sam is rich and happy”?

- [x] Sam is poor and unhappy.
- [ ] Either Sam is poor or happy
- [ ] Either Sam is poor or unhappy
- [ ] Sam is not rich and happy.

5.

What will be Truth values of the statement $(p \wedge q) \rightarrow (p \vee q)$ for the Truth values T,T,F,F of p and T,F,T,F of q?

- [ ] T, F,T,F
- [ ] F, T,F,T
- [x] T, T,T,T
- [ ] F,F,F,F

6.

If: “You can use the wireless network in the airport,”: “You pay the daily fee,” and: “You are a subscriber to the service”. Which is the right expression for the statement “To use the wireless network in the airport you must pay the daily fee unless you are a subscriber to the service”.

- [ ] $q \wedge r \rightarrow p$

- [x] q ∨ r → p
- [ ] p ∧ (q ∨ r)
- [ ] p ∧ (q ∧ r)

7.

Let Q(x, y) denote the statement “y is the capital of x.” What are these truth values? i) Q(Punjab, Chandigarh), ii) Q(India, New Delhi) iii) Q(Rajasthan, Shimla), iv) Q(Nepal, Kathmandu)

- [ ] T,F,T,F
- [ ] T,T,F,F
- [x] T,T,F,T
- [ ] T,T,T,T

8.

(p → q) ∧ (p → r) is logically equivalent to

- [ ] p → (q ∨ r)
- [x] p → (q ∧ r)
- [ ] p ∧ (q → r)
- [ ] p ∧¬(q → r)

9.

Let p and q be the propositions, p : It is below freezing, q : It is snowing.Write the proposition using p and q and logical connectives (including negations). “It is below freezing and snowing”.

- [ ] P ∧¬Q
- [ ] ¬P ∧¬Q
- [ ] ¬P ∧ Q
- [x] P ∧ Q

10.

Let P: We should be honest., Q: We should be dedicated., R: We should be overconfident. Then ‘We should be honest or dedicated but not overconfident.’ is best represented by?

- [ ] ¬P V ¬Q V R
- [ ] P ∧¬Q ∧ R
- [ ] P V Q ∧ R

- ◉ P V Q ∧¬R

11.

$\neg p \leftrightarrow q$ **is logically equivalent to**

- ◉ $p \leftrightarrow \neg q$
- ○ $p \leftrightarrow q$
- ○ $p \wedge \neg q$
- ○ $p \vee \neg q$

12.

Which one of the following is true for Biconditional statement $p \leftrightarrow q$

- ○ $p \leftrightarrow q$ is true when p is true and q is false
- ○ $p \leftrightarrow q$ is true when p is false but q is true
- ◉ $p \leftrightarrow q$ is true when p is true and q is true
- ○ $p \leftrightarrow q$ is false when p is false and q is false

13.

Which of the following statements is not correct for the biconditional statement $p \leftrightarrow q$?

- ○ It is true when both p and q are true
- ○ It is true when both p and q are false
- ○ It is false when p is false and q is true
- ◉ It is true when p is false and q is true

14.

Which of the following statements is not correct for the biconditional statement $p \leftrightarrow q$?

- ○ It is true when both p and q are true
- ○ It is true when both p and q are false
- ○ It is false when p is false and q is true
- ◉ It is true when p is false and q is true

15.

The bi-conditional statement is represented by

- ( ) $p \rightarrow q$
- (•) $p \leftrightarrow q$
- ( ) $p \equiv q$
- ( ) None

Unit 2 : Self assessment-2

Success

1.

If P(x) is "if x<0, then $x^2>x$" and the domain consists of all real numbers then the truth value of P(2) is:

- (•) True
- ( ) False
- ( ) It can be both True and False
- ( ) question is not well defined.

2.

Which one of the following is the most appropriate logical formula to represent the statement? "Students who know Mathematical, coding skills are placed".The following notations are used:M(x): x is knowing the Mathematical skills, C(x): x is knowing the Coding skills, P(x): x is placed

- ( ) ∀x(P(x)→(M(x)∧C(x)))
- ( ) ∀x((M(x)∧C(x))→P(x))
- ( ) ∀x((C(x)∧M(x))→P(x)
- (•) ∀x((M(x)∨C(x))→P(x))

3.

Which of the following is correct?

- ( ) ¬∃ x P(x)≡∃ x ¬P(x)
- ( ) ¬∀x p(x)≡∀x¬P(x)
- ( ) ¬∀x(x^2>x)≡∀x(x^2≤x)
- (•) ¬∃x(x^2=2)≡∀x(x^2≠2)

4.

According to proof by contraposition, which of the following is correct?

- ( ) p→q ≡q→p
- ( ) p→q ≡ p^q
- (•) p→q ≡¬q→¬p
- ( ) p→q ≡ ¬p→¬q

5.

Converse of the conditional statement p→q is

- (•) q→p
- ( ) ¬q→¬p
- ( ) ¬q→p

- [ ] ¬p→q

6.

Identify the correct one that compound propositions p and q are logically equivalent if

- [ ] p↔q is contradiction
- [ ] p↔q is contingency
- [ ] p→q is contingency
- [x] p↔q is a tautology

7.

Which of the following is correct?

- [ ] $\neg\exists x\, P(x) \equiv \exists x\, \neg P(x)$
- [ ] $\neg\forall x\, p(x) \equiv \forall x \neg P(x)$
- [ ] $\neg\forall x(x\hat{\ }2>x) \equiv \forall x(x\hat{\ }2 \leq x)$
- [x] $\neg\exists x(x\hat{\ }2=2) \equiv \forall x(x\hat{\ }2 \neq 2)$

8.

Find the equivalent statement of ∃ x P(x) {Existential quantification},

where Domain D = {x1,x2 ,x3,…..,xn}

- [ ] P(x1) ∧ P(x2) ∧ P(x3) ∧……∧ P(xn)
- [x] P(x1) ∨ P(x2) ∨ P(x3) ∨……∨ P(xn)
- [ ] P(x1)→ P(x2)→ P(x3)→⋯…→ P(xn)
- [ ] P(x1) ↔ P(x2) ↔ P(x3) ↔⋯… ↔P(xn)

9.

Which of the following is correct?

- [ ] $\neg\exists\, xP(x) \equiv \exists\, x\, \neg P(x)$
- [ ] $\neg\forall xp(x) \equiv \forall x \neg P(x)$
- [ ] $\neg\forall x(x^2 > x) \equiv \forall x(x^2 \leq x)$
- [x] $\neg\exists x(x^2 = 2) \equiv \forall x(x^2 \neq 2)$

10.

Suppose that the domain of propositional functions Q(x) is D = {0, 1, 2, 3, 4}. Expressed here the mentioned propositions with the help of

conjunction, disjunction and negation then which of the following is correct?

- ( ) $\exists x Q(x) \equiv Q(0) \wedge Q(1) \wedge Q(2) \vee Q(3) \vee Q(4)$
- ( ) $\forall x Q(x) \equiv Q(0) \wedge Q(1) \vee Q(2) \wedge Q(3) \vee Q(4)$
- (•) $\exists x \neg Q(x) \equiv \neg Q(0) \vee \neg Q(1) \vee \neg Q(2) \vee \neg Q(3) \vee \neg Q(4)$
- ( ) $\forall x \neg Q(x) \equiv Q(0) \wedge Q(1) \wedge Q(2) \wedge Q(3) \wedge Q(4)$

11.

Identify the correct statement of the following, where Q(x)is the propositional function with domain D = {-2, -1, 0, 1, 2}

- ( ) $\exists x Q(x) \equiv Q(-2) \wedge Q(-1) \wedge Q(0) \wedge Q(1) \wedge Q(2)$
- ( ) $\forall x Q(x) \equiv Q(-2) \vee Q(-1) \vee Q(0) \vee Q(1) \vee Q(2)$
- ( ) $\exists x \neg Q(x) \equiv \neg Q(-2) \wedge Q(-1) \wedge Q(0) \wedge Q(1) \wedge Q(2)$
- (•) $\forall x \neg Q(x) \equiv \neg Q(-2) \wedge \neg Q(-1) \wedge \neg Q(0) \wedge \neg Q(1) \wedge \neg Q(2)$

12.

What is the negation of the statement $\forall x(-2 \leq x < 3)$?

- ( ) $\forall x(x < -2 \vee x \geq 3)$
- (•) $\exists x(x < -2 \vee x \geq 3)$
- ( ) $\forall x(x < -2 \wedge x \geq 3)$
- ( ) $\exists x(x < -2 \wedge x \geq 3)$

13.

The restricted universal quantification $\forall y \neq 0(y^3 \neq 0)$ can also be written as

- ( ) $\exists y(y \neq 0 \rightarrow y^3 \neq 0)$
- ( ) $\exists y(y \neq 0 \wedge y^3 \neq 0)$
- (•) $\forall y(y \neq 0 \rightarrow y^3 \neq 0)$
- ( ) $\forall y(y \neq 0 \vee y^3 \neq 0)$

14.

Let $P(x): x = x^2,\ x \in \mathbb{Z}$ then which is false?

- $-\forall x\ P(x)$
- $\forall x - P(x)$
- $\exists x\ P(x)$
- $\exists x - P(x)$

Unit 3 : Self assessment-3

Success

1.

If (S, R) is such that S is the set of all people in the world and (a, b) ∈ R, where a and b are people, then a is taller than b.......

- Is not a poset
- Is a poset
- Is not transitive
- Is symmetric

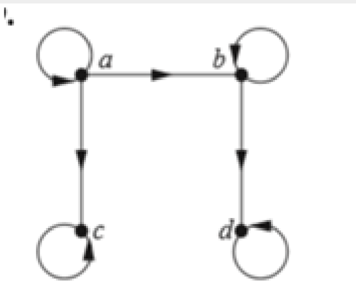
2.

The set (Z, =) is

- Is not a poset
- Is a poset
- Is not transitive
- Is not symmetric

3.

The following graph is



- a partial ordering
- Not antisymmetric
- Not transitive
- Not antisymmetric

4.

The two incomparable elements in the poset (P({0,1,2}),⊆) are

○ {5} and {1}, for instance

◉ {0} and {1}, for instance

○ {2} and {6}, for instance

○ {10} and {10}, for instance

5.

The lexicographic ordering of these n-tuples: (1,1,2), (1,2,1) are

○ (1, 1, 3)<(1,3,1)

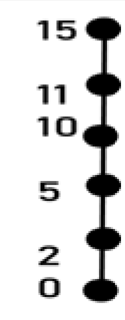
○ (4, 1, 2) <(1,5,1)

◉ (1, 1, 2)<(1,2,1)

○ (3, 1, 2)<(1,2,1)

6.

The following Hasse diagram for the “less than or equal to” relation is



○ on {0,2,5,10,11,30}

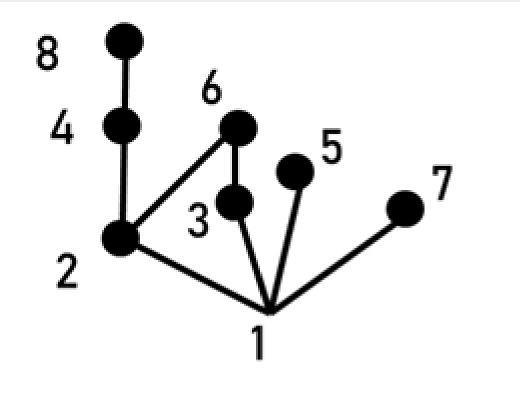
◉ on {0,2,5,10,11,15}

○ on {0,2,5,10,12,15}

○ on {1,2,5,10,11,15}

7.

The following Hasse diagram for divisibility is

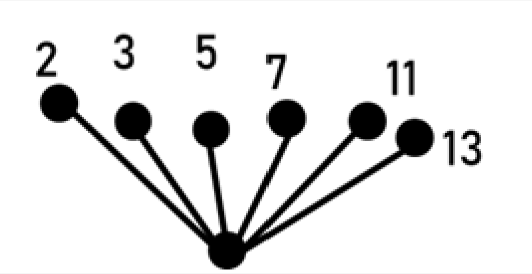


◉ on the set {1,2,3,4,5,6,7,8}.

- ○ on the set {1,2,3,4,5,6,7}.
- ○ on the set {1,2,3,4,5,6,8}.
- ○ on the set {0,2,3,4,5,6,7,8}.

8.

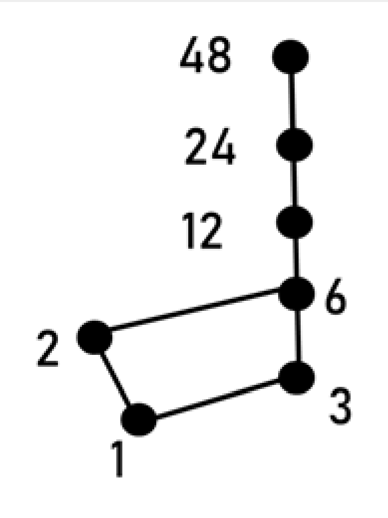
The following Hasse diagram is on the set



- ○ {0,2,3,5,7,11,13}.
- ○ {1,2,3,5,7,11,15}.
- ◉ {1,2,3,5,7,11,13}.
- ○ {1,2,3,5,11,13}.

9.

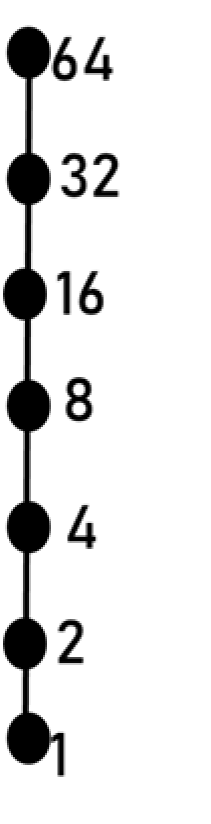
The following Hasse diagram is on the set



- ○ {0,2,3,6,12,24,36,48}.
- ◉ {1,2,3,6,12,24,36,48}.
- ○ {1,2,3,6,12,24,36,48,96}.
- ○ {1,2,3,6,12,24,36}.

10.

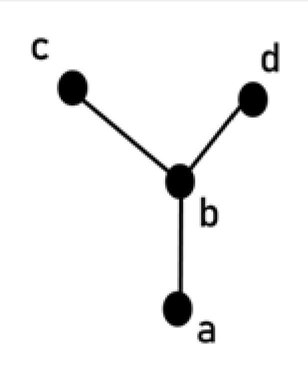
The following Hasse diagram is on the set



- [x] {1,2,4,8,16,32,64}.
- [ ] {1,2,3,6,12,24,36,48}.
- [ ] {1,2,3,4,5,6,7,8}.
- [ ] {0,2,3,4,5,6,7,8}.

11.

All ordered pairs in the partial orderingwith the accompanying Hasse diagram is



- [ ] (a, c), (a, b), (a, d), (a, c), (b, a), (a, a), (b, b), (c, c), (d, d)
- [x] (a, b), (a, c), (a, d), (b, c), (b, d), (a, a), (b, b), (c, c), (d, d)
- [ ] (a, b), (b, c), (e, d), (e, c), (b, d), (a, a), (c, b), (c, c), (d, d)
- [ ] (a, a), (a, c), (a, b), (b, c), (b, d), (b, a), (b, b), (d, c), (a, d)

12.

The maximal elementsfor the poset ({3,5,9,15, 24,45},|).

- (•) 24, 45
- ( ) 15,24
- ( ) 9,3
- ( ) 67,76

13.

The duals of the poset (P (Z),⊇)

- ( ) {(0, 0), (1, 0), (1, 1), (2, 0), (2, 1), (2, 2)}
- ( ) (Z, ≤)
- (•) (P (Z), ⊆)
- ( ) (Z+, "is a multiple of")

14.

The duals of the poset (P (Z),⊇)

- ( ) {(0, 0), (1, 0), (1, 1), (2, 0), (2, 1), (2, 2)}
- ( ) (Z, ≤)
- (•) (P (Z), ⊆)
- ( ) (Z+, "is a multiple of")

15.

The duals of the poset ({0,1,2}, ≤)

- (•) {(0, 0), (1, 0), (1, 1), (2, 0), (2, 1), (2, 2)}
- ( ) (Z, ≤)
- ( ) (P (Z), ⊆)
- ( ) (Z+, "is a multiple of")

Unit 4 : Self assessment-4

Success

1.

The value of the expression $1.\overline{0}$ is

- (•) 1
- ( ) 0
- ( ) 1.0

- 0.1

2.

The value of the expression $1+\overline{1}$

- (•) 1
- 0
- 1.0
- 0.1

3.

The value of the expression $\overline{0}.0$

- 1
- (•) 0
- 1.0
- 0.1

4.

The value of the expression $\overline{1+0}$

- 1
- (•) 0
- 1.0
- 0.1

5.

How many different Boolean functions of degree *n* are there?

- (•) 2^{2^n}
- 3^{2^n}
- 2^{3^n}
- 2^{2^2}

6.

What values of the Boolean variables x and y satisfy xy = x +y?

- (•) (0, 0) and (1, 1)
- (1, 0) and (1, 1)
- (0, 1) and (1, 1)

(0, 0) and (0, 1)

7.

That $xy + yz + xz =$

$\bar{x}y + \bar{y}z$

$\bar{y}z + x\bar{z}$

$\bar{x}y + x\bar{z}$

$\bar{x}y + \bar{y}z + x\bar{z}$

8.

The idempotent lawX+x=

x

0

1

y

9.

The domination lawX+1=

1

0

x

y

10.

The associative lawX+(y+z) =

(x.y) .z

(x+y) +z

(x+y) .z

X+(y+z)

11.

De Morgan's laws$(xy) =$

$\bar{x}.\bar{y}$

$\bar{x} + \bar{y}$

$x + y$

- ( ) $x.y$

12.

The dual of the Boolean expression x +y is

- ( ) x+y
- (•) x.y
- ( ) x-y
- ( ) x/y

13.

The dual of the Boolean expression $\bar{x}\bar{y}$is

- (•) $\bar{x} + \bar{y}$
- ( ) $\bar{x} / \bar{y}$
- ( ) $x.y$
- ( ) $x + y$

14.

The dual of the Boolean expression xyz+$\bar{x}\bar{y}\bar{z}$is

- ( ) xyz+$\bar{x}\bar{y}\bar{z}$
- ( ) x+yz+$\bar{x}\bar{y}\bar{z}$
- ( ) xyz.$\bar{x}\bar{y}\bar{z}$
- (•) (x+y+z).$(\bar{x} + \bar{y} + \bar{z})$

15.

The dual of the Boolean expression x$\bar{z}$+x ·0+$\bar{x}$ ·1 is

- ( ) x$\bar{z}$.x ·0+$\bar{x}$ ·1
- ( ) x$\bar{z}$+x +0+$\bar{x}$ ·1
- ( ) x$\bar{z}$+x ·0+$\bar{x}$ +1
- (•) x+$\bar{z}$.x +1.$\bar{x}$ +0

Unit 5 : Self assessment-5

Success

1.

A new company with just two employees, Sanchez and Patel, rents a floor of a building with10 offices. How many ways are there to assign different offices to these two employees?

- (•) 90
- ( ) 100
- ( ) 132

110

2.

A new company with just two employees, Sanchez and Patel, rents a floor of a building with10 offices. How many ways are there to assign different offices to these two employees?

- (•) 90
- ( ) 100
- ( ) 132
- ( ) 110

3.

A student can choose a computer project from one of three lists. The three lists contain 5, 10 and 15 possible projects, respectively. No project is on more than one list. How many possible projects are there to choose from?

- ( ) 50
- ( ) 40
- (•) 30
- ( ) 10

4.

A new company with just two employees, Sachin and Parth, rents a floor of a building with 20 offices. How many ways are there to assign different offices to these two employees?

- (•) 380
- ( ) 280
- ( ) 38
- ( ) 20

5.

A new company with just two employees, Sachin and Parth, rents a floor of a building with 20 offices. How many ways are there to assign different offices to these two employees?

- (•) 380
- ( ) 280
- ( ) 38
- ( ) 20

6.

A computer company receives 350 applications from computer graduates for a job planning a line of new Web servers. Suppose that 210 of these applicants majored in computer science, 157 majored in business, and 51 majored both in computer science and in business. How many of these applicants majored neither in computer science nor in business?

- (•) 34
- ( ) 44
- ( ) 50
- ( ) 20

7.

How many bit strings of length eight either start with a 0 bit or end with the two bits 11?

- [x] 160
- [ ] 100
- [ ] 120
- [ ] 60

8.

How many bit strings of length eight either start with a 1 bit or end with the two bits 00?

- [x] 160
- [ ] 100
- [ ] 120
- [ ] 60

9.

The value of P(6,3) is

- [ ] 675
- [ ] 987
- [x] 120
- [ ] 876

10.

The value of each of the quantity P(6,5) is

- [ ] 876
- [ ] 654
- [x] 720
- [ ] 876

11.

The value of each of the quantity P(8,8) is

- [x] 40,320
- [ ] 67,987
- [ ] 89,786
- [ ] 76,598

12.

The value of each of the quantity P(10,9) is

- [ ] 7,689,560
- [ ] 6,754,637
- [ ] 76,543,220
- [x] 3,628,800

13.

The number of 5-permutations of a set with nine elements is

- [x] 15,120
- [ ] 16,786
- [ ] 56,987
- [ ] 67,890

14.

How many ways are there for eight men and five women to stand in a line so that no two women stand next to each other?

- [x] 609,638,400
- [ ] 675,987,098
- [ ] 786,987,600
- [ ] 786,987,600

15.

Suppose that a department contains 10 men and 15 women. How many ways are there to form a committee with six members if it must have the same number of men and women?

- [ ] 89,765
- [ ] 87,987
- [x] 54,600
- [ ] 65,897

16.

A formula for the number of circular r-permutations of n people is

- [x] n! / (r (n − r)!)
- [ ] n! n/ (n (n − n)!)
- [ ] n! n/ (n (r − r)!)
- [ ] nr! / (r (n − r)!)

Unit 6 : Self assessment-6

Success

1.

A woman has 11 close friends. In how many ways can she invite five of them to dinner?

- [ ] 456
- [x] 462
- [ ] 450
- [ ] 451

2.

A man has 11 close friends. In how many ways if two of the friends are married and will not attend separately?

- [x] 210
- [ ] 222
- [ ] 223

234

3.

A person has 11 close friends. In how many ways if two of them are not on speaking terms and will not attend together?

- ( ) 456
- ( ) 786
- ( ) 897
- (•) 252

4.

A woman has 11 close friends of whom six are also women. In how many ways can she invite three or more of them if she wants the same number of men as women (including herself)?

- (•) 325
- ( ) 360
- ( ) 400
- ( ) 480

5.

A student is to answer 10 out of 13 questions on an exam. How many choices has he?

- ( ) 567
- ( ) 456
- ( ) 786
- (•) 286

6.

A student is to answer 10 out of 13 questions on an exam. How many if he must answer the first two questions?

- ( ) 897
- ( ) 890
- (•) 165
- ( ) 987

7.

A student is to answer 10 out of 13 questions on an exam. How many if he must answer the first or second question but not both?

- ( ) 675
- ( ) 876
- (•) 110
- ( ) 654

8.

A student is to answer 10 out of 13 questions on an exam. How many if he must answer exactly three out of the first five question?

- ( ) 876
- (•) 80
- ( ) 87
- ( ) 90

9.

A student is to answer 10 out of 13 questions on an exam. How many if he must answer at least three of the five questions?

- ( ) 897
- (•) 276
- ( ) 234
- ( ) 543

10.

The minimum number of students needed to guarantee that five of them belong to the same class (freshman, sophomore, junior, senior)

- ( ) Here the n=3 classes are the pigeonholes and k+1=7 so k=8. Thus, among any kn+1=14 student (pigeons), five of them belong to the same class.
- (•) Here the n=4 classes are the pigeonholes and k+1=5 so k=4. Thus, among any kn+1=17 student (pigeons), five of them belong to the same class.
- ( ) Here the n=6 classes are the pigeonholes and k+1=50 so k=41. Thus, among any kn+1=107 student (pigeons), five of them belong to the same class.
- ( ) Here the n=24 classes are the pigeonholes and k+1=15 so k=4. Thus, among any kn+1=17 student (pigeons), five of them belong to the same class.

11.

Let L be a list (not necessarily in alphabetical order) of the 26 letters in the english alphabet (which consists of 5 vowels,A,E,I,O,U and 21 consonants) then L has a sublist consisting ....

- (•) of four or more consecutive consonants.
- ( ) of five or more consecutive consonants
- ( ) of six or more consecutive consonants
- ( ) of eight or more consecutive consonants

12.

Let L be a list (not necessarily in alphabetical order) of the 26 letters in the english alphabet (which consists of 5 vowels,A,E,I,O,U and 21 consonants). Assuming L begins with a vowel , say A, then L has a sublist consisting ....

- ( ) of four or more consecutive consonants.
- (•) of five or more consecutive consonants
- ( ) of six or more consecutive consonants
- ( ) of eight or more consecutive consonants

Unit 7 : Self assessment-7

Success

1.

Show that a connected graph g with n vertices must have at least

n-4 edges.
n-3 edges.
n-2 edges.
n-1 edges.

2.

The number of connected graphs with four vertices are

1
3
5
7

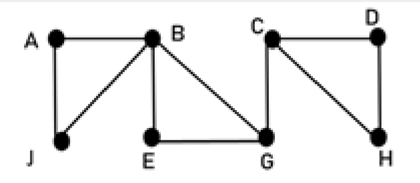
3.

Let G be a connected graph. If G contains a cycle C which contains an edge e, then

G + e is still connected
G − e is still connected
G − e is not connected
G − e is disconnected

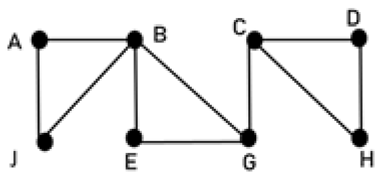
4.

Consider the graph .All cycles, if any are



AJBA, BEGB, CDHC
ABGA, BGEC, CDHC
AGBA, BLKB, CDHC
AGBA, BKLB, CHDC

5.

Consider the graph 

all cut points, if any are

B, C, G

- B, E, H
- C, E, G
- D, E, A

6.

Suppose a graph G contains two distinct paths from vertex u to a vertex v.

- [x] then g has a cycle
- [ ] then g has 3 cycles
- [ ] then g has 4 cycles
- [ ] then g has 5 cycles

7.

Suppose G is a finite cycle- free graph with a least one edge.

- [ ] then G has at least two vertices of degree 2
- [ ] then G has at least three vertices of degree 2
- [x] then G has at least two vertices of degree 1
- [ ] then G has at least two vertices of degree 3

8.

Let G be a connected graph. If $e = \{u, v\}$ is an edge such that $G - e$ is disconnected, then u and v belong to different components of

- [ ] $G + e.$
- [ ] $G - e + 1.$
- [ ] $e - G.$
- [x] $G - e.$

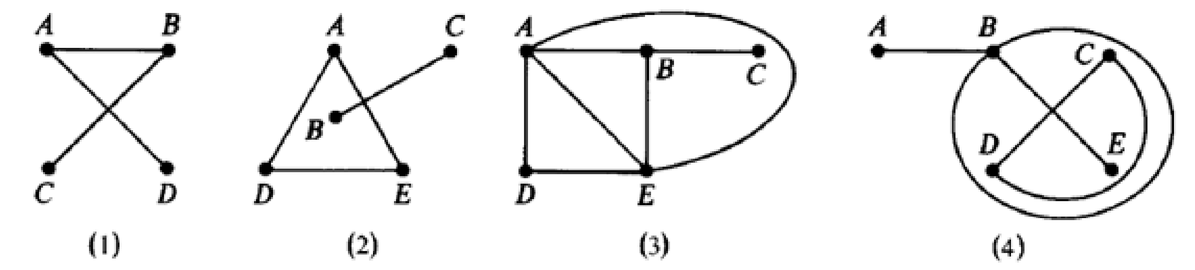
9.

Suppose G has V vertices and E edges. Let M and m denote, respectively, the maximum and minimum of the degrees of the vertices in G. then

- [ ] $m \geq 2E/V \geq M$
- [x] $m \leq 2E/V \leq M$
- [ ] $m \leq 2E/V \geq M$
- [ ] $m \geq 2E/V \leq M$

10.

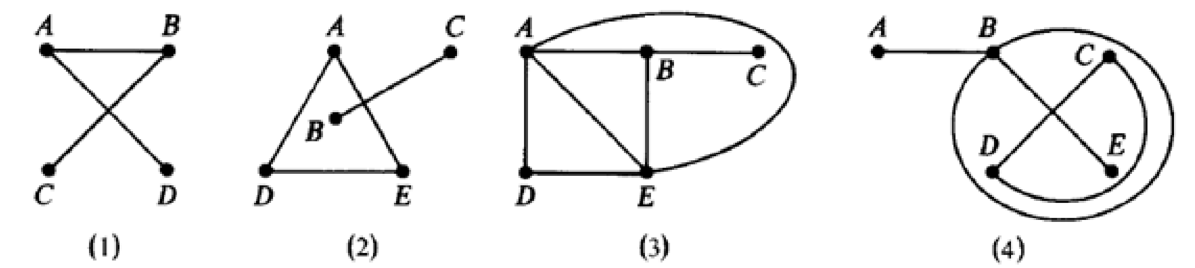
Consider the multi graph, which of them are connected?



- Only (2) and (4) are connected
- Only (2) and (3) are connected
- Only (1) and (4) are connected
- Only (1) and (3) are connected

11.

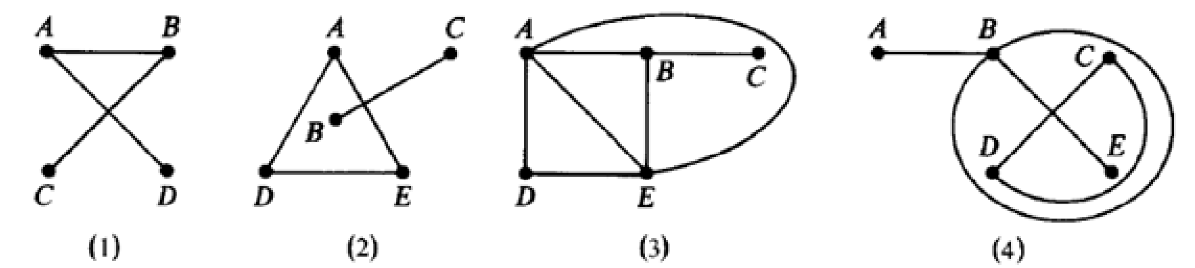
Consider the multi graph which are cycle -free (without cycles).



- Only (3) and (4) are cycle-free.
- Only (2) and (4) are cycle-free.
- Only (1) and (2) are cycle-free.
- Only (1) and (4) are cycle-free.

12.

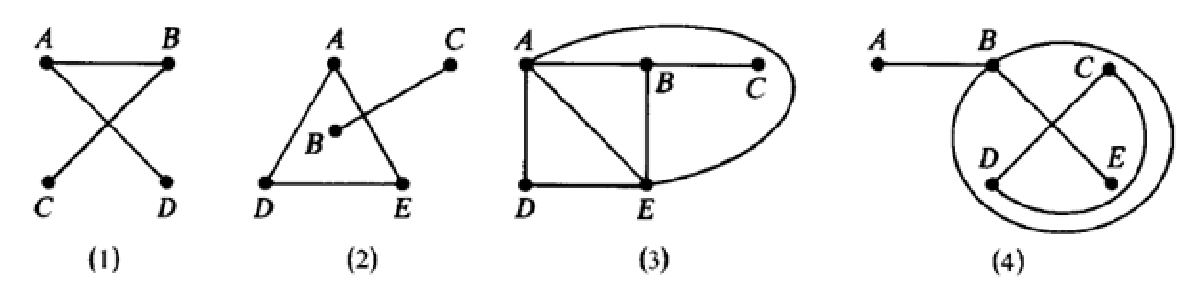
Consider the multi graph, which are loop free (without loops)?



- Only (3) has a loop
- Only (1) has a loop
- Only (4) has a loop
- Only (2) has a loop

13.

Consider the multi graph, which are (simple) graphs?



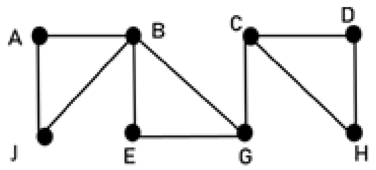
Only (1) and (3) are graphs.

Only (2) and (3) are graphs.

Only (1) and (4) are graphs.

Only (1) and (2) are graphs.

14.



Consider the graph . Find the subgraph H = H(V' ,E') of G where V' equals: (a) {B,C,D, J,K} (b) {A,C, J, L,M} (c) {B,D, J,M} (d) {C,K, L,M}.Which of them are isomorphic?

(b) and (c) are isomorphic,

(a) and (c) are isomorphic,

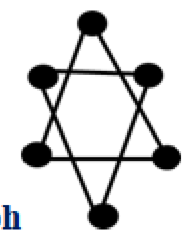
(a) and (d) are isomorphic,

(a) and (b) are isomorphic,

Unit 8 : Self assessment-8

Success

1.

For the following graph  **it is that graph**

is connected.

is not connected

has only one cycle

has no cycle

2.

What do the connected components of acquaintanceship graphs represent?

- Maximal sets of people with the property that for any three of them, we can find a string of acquaintances that takes us from one to the other
- Maximal sets of people with the property that for any two of them, we cannot find a string of acquaintances that takes us from one to the other
- Maximal sets of people with the property that for any two of them, we cannot find a string of acquaintances that takes us from one to the other
- Maximal sets of people with the property that for any four of them, we cannot find a string of acquaintances that takes us from one to the other

3.

The number of paths of length n between two different vertices in K_4 if n is 2are

- 5
- 2
- 6
- 7

4.

The number of paths of length n between two different vertices in K_4 if n is3 are

- 7
- 9
- 8
- 6

5.

The number of paths of length n between two different vertices in K_4 if n is 4 are

- 60
- 90
- 20
- 10

6.

The number of paths of length n between two different vertices in K_4 if n is 5 are

- 71
- 61
- 23
- 41

7.

The number of paths between c and d in the graph in Figure 2 of length (a) 2

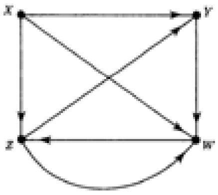
7

4

1

0

8.

Let *G* be the directed graph 

then total number cycles in *G* are/is

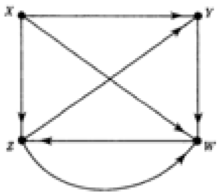
There is only one cycle in *G*, which is *(Y, W, Z, Y)*.

There 2 one cycles

There 3 one cycles

There 4 one cycles

9.

Let *G* be the directed graph 

then all simple paths from *X* to *Z* are

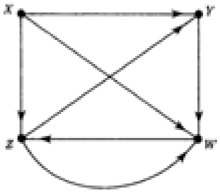
There are three simple paths from *X* to *Z*, which are *(X, Z)*, *(X, W, Z)*, and *(X, Y, W, Z)*.

There are four simple paths from *X* to *Z*, which are *(X, Z)*, *(X, W, Z)*, and *(X, Y, W, Z)*, *(X, Y, W)*.

There are two simple paths from *X* to *Z*, which are *(X, Z)*, and *(X, Y, W, Z)*.

There isone simple paths from *X* to *Z*, which are *(X, Z)*.

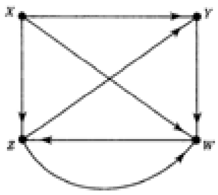
10.

Let *G* be the directed graph 

. All simple paths from *Y* to *Z* are

- There is only one simple path from *Y* to *Z*, which is (*Y*, *W*, *Z*).
- There are only two simple paths from *Y* to *Z*, which is (*Y*, *W*, *Z*) and (*Y*, *X*, *W*, *Z*)
- There are only three simple paths from *Y* to *Z*, which is (*Y*, *W*, *Z*), (*Y*, *X*, *Z*) and (*Y*, *X*, *W*, *Z*)
- There are only four simple paths from *Y* to *Z*, which is (*Y*, *W*, *Z*), (*Y*, *X*, *W*), (*Y*, *X*, *Y*) and (*Y*, *X*, *W*, *Z*)

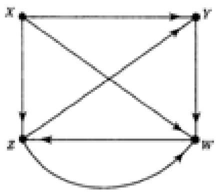
11.

Let *G* be the directed graph in following Fig. 

the indegree(X)

- 0
- 1
- 2
- 3

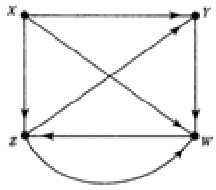
12.

Let *G* be the directed graph in following Fig. 

the source/s is/are

- X
- Y
- W
- Z

13.

Let *G* be the directed graph in following Fig. 

the sink/s is/are

- X
- Y
- Z
- (selected) None

14.

Let G be the directed graph with vertex set V (G) = (a, b, c, d, e, f, g} and edge set: E(G) = {(a, a), (b, e), (a, e), (e, b), (g, c), (a, e), (d, f), (d, b), (g, g)}. Then loops are

- (g, g)
- (a, a),(b, e), (e, b)
- (a, a)
- (selected) (a, a) and (g, g)

15.

. Let G be the directed graph with vertex set V (G) = (a, b, c, d, e, f, g} and edge set: E(G) = {(a, a), (b, e), (a, e), (e, b), (g, c), (a, e), (d, f), (d, b), (g, g)}.Then parallel edges are

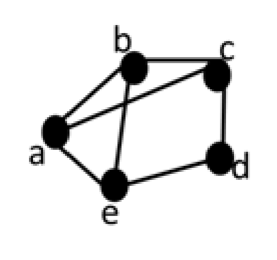
- (g, g)
- (selected) (b, e), (e, b)
- (a, a)
- (a, a) and (g, g)

Unit 9 : Self assessment-9

Success

1.

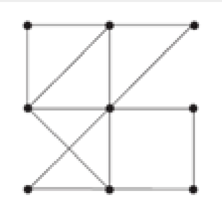
Following graph



- Neither has a Euler circuit nor has a Euler path
- has a Euler circuit
- has a Euler path
- has a Euler circuit and has a Euler Path

2.

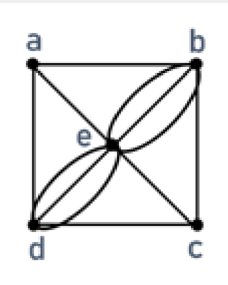
Following graph



- Neither has a Euler circuit nor has a Euler path
- has a Euler circuit
- has only an Euler path
- has a Euler circuit and but not Euler Path

3.

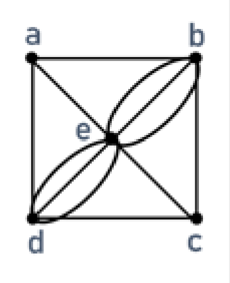
Following graph



- Neither has a Euler circuit nor has a Euler path
- has a Euler circuit
- has a Euler path
- has a Euler circuit and has a Euler Path

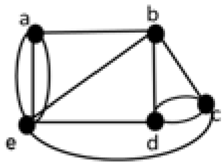
4.

Following graph



- has a Euler path a, c, c, e, i, e, d, b, u, c, d
- has a Euler path a, e, c, e, b, e, d, b, a, c, d
- has a Euler path a, r, c, e, b, y, d, b, c, c, d
- has a Euler path a, o, c, e, b, e, u, b, a, c, d

5.

Following graph 

euler circuit is

- a, b, e, d, c, f, d, b, e, a, h, a
- a, d, c, d, c, e, t, b, e, a, e, a
- a, b, c, d, c, e, d, b, e, a, e, a
- a, i, c, d, c, e, o, b, e,u,a, e, a

6.

For which values of n do the graphs k_n have a Euler path but no Euler circuit?

- n is odd
- n is even
- n is prime number
- n is a fractional number

7.

For which values of n do the graphs C_n have a Euler path but no Euler circuit?

- all
- 5

None

7

8.

For which values of n do the graph W_n have a Euler path but no Euler circuit?

All

None

4

3

9.

For which values of n do the graphs Q_n have a Euler path but no Euler circuit?

N=1

N=even

N=odd

N=prime

10.

When can the centerlines of the streets in a city be painted without traveling a street more than once? (Assume that all the streets are two-way streets.)

When the graph in which vertices represent intersections and edges streets has an Euler path

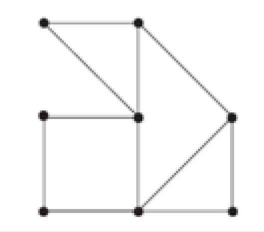
When the graph in which vertices does not represent intersections and edges streets has an Euler path

When the graph in which vertices represent intersections and edges streets does not have an Euler path

When the graph in which vertices represent intersections and edges streets have an Euler circuit.

11.

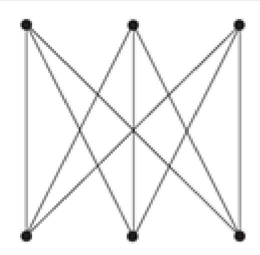
The graph



- [ ] neither has a Hamilton path nor a circuit.
- [x] has a Hamilton circuit.
- [ ] does nothave a Hamilton path.
- [ ] does nothave a Hamilton circuit.

12.

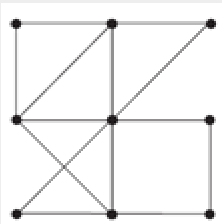
The graph



- [ ] neither has a Hamilton path nor a circuit.
- [ ] does nothave a Hamilton path.
- [x] has a Hamilton circuit.
- [ ] does nothave a Hamilton circuit.

13.

The graph



- [ ] has a Hamilton path and a circuit.
- [ ] does nothave a Hamilton path.
- [ ] has a Hamilton circuit.
- [x] does not have a Hamilton circuit.

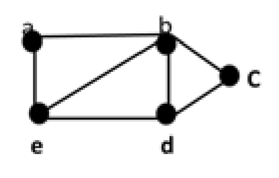
14.

For which values of m and n does the complete bipartite graph $K_{m,n}$ have a Hamilton circuit?

- [ ] $m = n \geq 3$
- [ ] $m = n \geq 12$
- [x] $m = n \geq 2$

$m = n \geq 32$

15.



has a Hamilton circuita, c, d, b, e, a.

hasa Hamilton circuita, f, c, i, e, o.

has a Hamilton circuita, f, c, u, e, o.

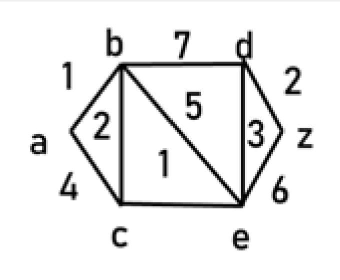
has a Hamilton circuita, b, c, d, e, a.

Unit 10 : Self assessment-10

Success

1.

The shortest distance between sources a and destination z using Dijkstra 's



algorithm for following graph

9

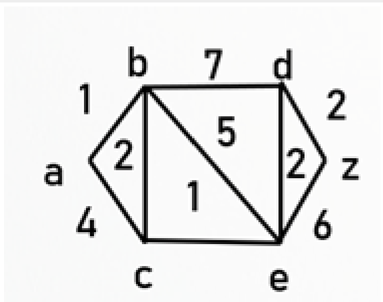
10

11

12

2.

The shortest distance between sources a and destination z using Dijkstra 's

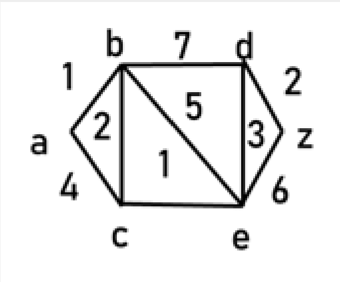


algorithm for following graph

- 8
- 10
- 11
- 12

3.

The shortest path between sources a and destination z using Dijkstra ‘s



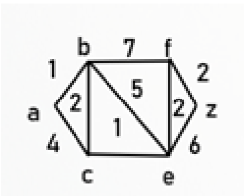
algorithm for following graph

- Therefore, shortest path between a and z =(a-b-c-d-e-z)
- Therefore, shortest path between a and z =(a-c-b-e-d-z)
- Therefore, shortest path between a and z =(a-b-c-e-d-z)
- Therefore, shortest path between a and z =(z-b-c-d-e-a)

4.

The shortest path between sources a and destination z using Dijkstra ‘s

algorithm for following graph



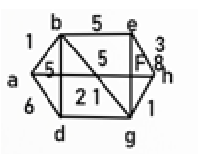
is

- Therefore, shortest path between a and z =(a-b-c-f-e-z)
- Therefore, shortest path between a and z =(a-c-b-e-f-z)
- Therefore, shortest path between a and z =(a-b-c-e-f-z)
- Therefore, shortest path between a and z =(z-b-c-f-e-a)

5.

The shortest path between sources a and destination z using Dijkstra ‘s

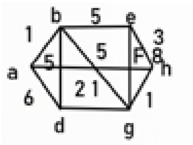
algorithm for following graph



is

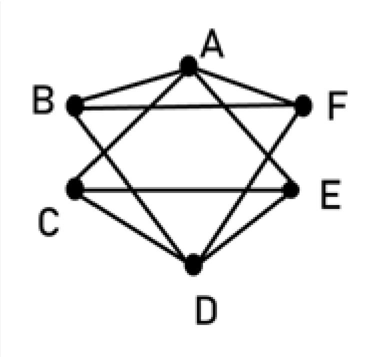
- [ ] Therefore, shortest path between a and z =(a-b-c-d-e-z)
- [ ] Therefore, shortest path between a and z =(a-c-b-e-d-z)
- [x] Therefore, shortest path between a and z =(a-b-c-e-d-z)
- [ ] Therefore, shortest path between a and z =(z-b-c-d-e-a)

6.

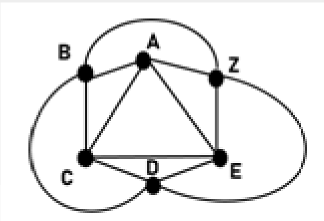
The shortest distance between sources a and destination z using Dijkstra 's algorithm for following graph  **is**

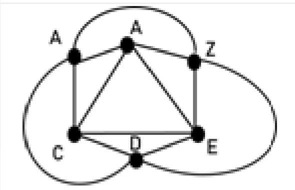
- [ ] 8
- [ ] 8
- [x] 9
- [x] 9
- [ ] 11
- [ ] 11
- [ ] 12
- [ ] 12

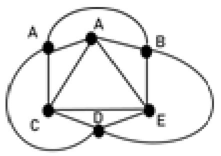
7.

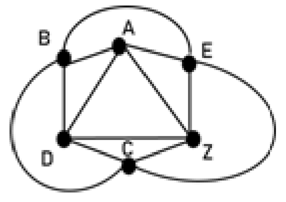
A planar representation of 

is

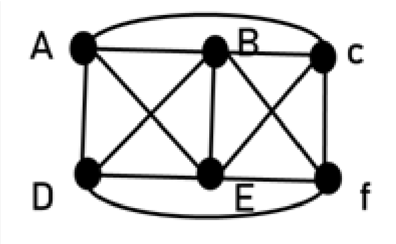
- [ ] 

- [ ] 

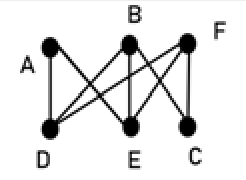


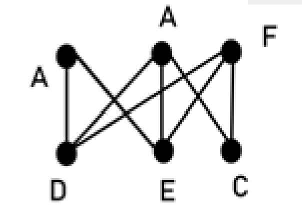


8.

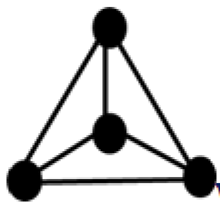
A planar representation of 

is that

- The graph has many planar representation
- The graph is nonplaner.
- 

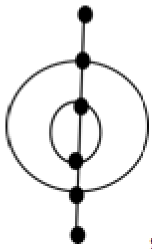
- 

9.

For the graph  **which of the statement is true?**

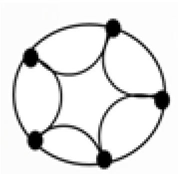
- V=4, E=6, R=0.Hence using euler 's formula V-E+R=4-6+4=2.Also d=2
- V=4, E=6, R=4.Hence using euler 's formulaV-E+R=4-6+4=2.Also d=3
- V=3, E=6, R=4.Hence using euler 's formula V-E+R=4-6+4=2.Also d=3
- V=9, E=6, R=4.Hence using euler 's formula V-E+R=4-6+4=9.Also d=3

10.

For the graph  , which of the statement is true?

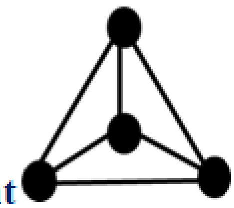
- V=6, E=0, R=5; SO, V-E+R=6-9+5=2.Here d=6 since two edges are counted twice.
- V=6, E=3, R=5; SO, V-E+R=6-9+5=12.Here d=6 since two edges are counted twice.
- V=6, E=9, R=5; SO, V-E+R=6-9+5=62.Here d=6 since two edges are counted twice.
- V=6, E=9, R=5; SO, V-E+R=6-9+5=2.Here d=16 since two edges are counted twice.

11.

For the graph  , which of the statement is true?

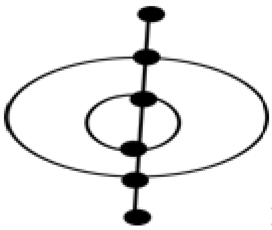
- V=4, E=10, R=7.Henc V-E+R 5-10 +7=2.Here d=52
- V=6, E=10, R=7.Henc V-E+R 5-10 +7=2.Here d=2
- V=7, E=10, R=7.Henc V-E+R 5-10 +7=2.Here d=4
- V=5, E=10, R=7.Henc V-E+R 5-10 +7=2.Here d=5

12.

The minimum number n of colors required to paint  is

- n=4
- n=0
- n=8
- n=7

13.

The minimum number n of colors required to paint  **is**

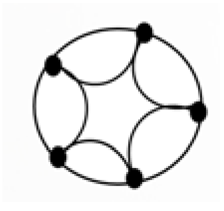
n=3

n=9

n=6

n=2

14.

Find the minimum number n of colorsrequired to paint 

only twelve colors are needed i.e, n=12

only two colors are needed i.e, n=2

only twenty two colors are needed i.e, n=22

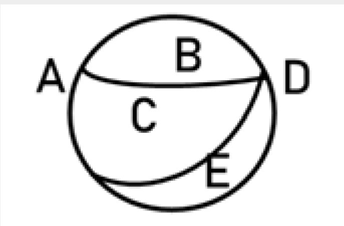
only one colors are needed i.e, n=1

Unit 11 : Self assessment-11

Success

1.

The number of colors needed to color the map so that no two adjacent



regions have the same color is.

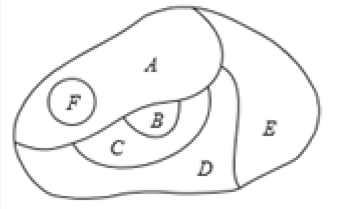
Four colors

Three colors

Two colors

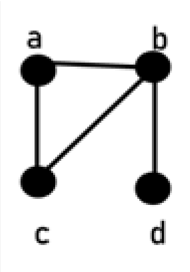
Five colors

2.

The number of colors needed to color the map so that no two adjacent regions have the same color  is

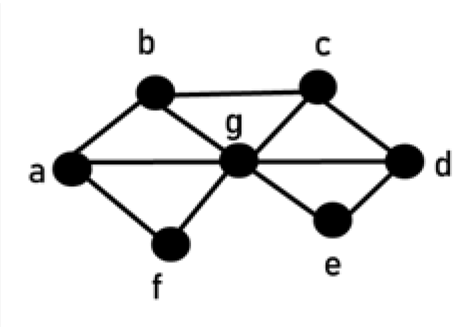
- Three color
- Two colors
- One colors
- None of these

3.

The chromatic number of the given graph  is

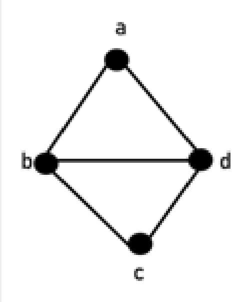
- 2
- 7
- 1
- 3

4.

The chromatic number of the given graph  is

- 1
- 2
- 3
- 4

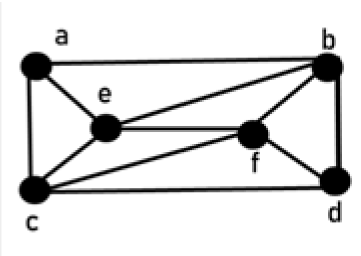
5.

The chromatic number of the given graph 

is

- 4
- 3
- 2
- 1

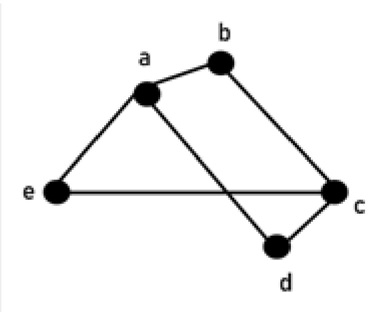
6.

The chromatic number of the given graph 

is

- 1
- 2
- 3
- 4

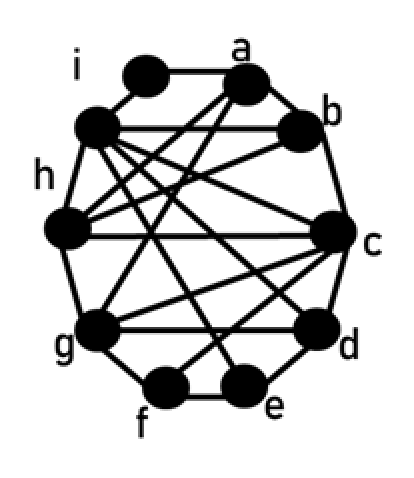
7.

The chromatic number of the given graph 

is

- 1
- 3
- 2
- 4

8.

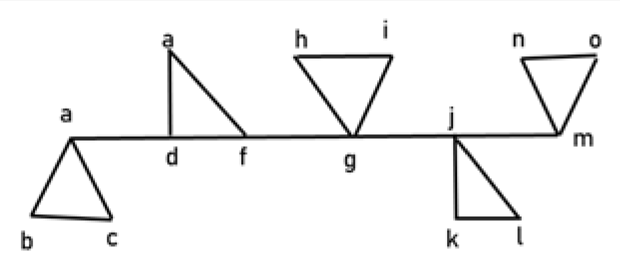
The chromatic number of the given graph 

is

- 1
- 2
- 3
- 4 (selected)

9.

The chromatic number of the given graph is



- 8
- 3 (selected)
- 0
- 6

10.

Which graphs have a chromatic number of 1?

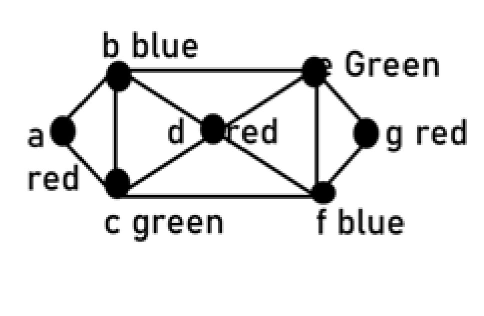
- Graphswithnoedges (selected)
- Graphswith2 edges
- Graphswith 3 edges
- Graphswith 4 edges

11.

What is the chromatic number of W_n?

- 0if n is even, 3 if n is odd
- 1 if n is even, 5 if n is odd
- 2 if n is even, 2 if n is odd
- 3 if n is even, 4 if n is odd

12.

The chromatic number of the graph 

is

- 1
- 2
- 3
- 4

13.

What is the chromatic number of K_n?

- n
- n+1
- n-1
- n-2

14.

The chromatic number of the complete bipartite graph $K_{m,n}$, where m and n are positive integersis

- 2
- 3
- 4
- 5

15.

What is the chromatic number of the graph Cn, where n ≥ 3? (Recall that Cn is the cycle with n vertices.)

- (•) 2
- ( ) 3
- ( ) 4
- ( ) 5

Unit 12 : Self assessment-12

Success

1.

A tree with n vertices has

- (•) n−1 edges
- ( ) n−2 edges
- ( ) n−3 edges
- ( ) n−4 edges

2.

A full m-ary tree with i internal vertices contains n =

- ( ) mi +4 vertices.
- ( ) mi +3 vertices.
- ( ) mi +2 vertices.
- (•) mi +1 vertices.

3.

A full m-ary tree with n vertices has

- (•) i = (n−1)/m internal vertices
- ( ) i = (n+1)/m internal vertices
- ( ) i = (n−2)/m internal vertices
- ( ) i = (n−3)/m internal vertices

4.

There are at most m^h leaves in anm-ary tree of height

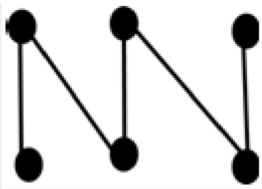
- ( ) h+2.
- ( ) h+1.
- ( ) h+3.
- (•) h.

5.

Suppose that someone starts a chain letter. Each person who receives the letter is asked to send it on to four other people. Some people do this, but others do not send any letters. How many people have seen the letter, including the first person, if no one receives more than one letter and if the chain letter ends after there have been 100 people who read it but did not send it out? How many people sent out the letter?

- 122 & 22
- 111 & 11
- 133 & 33
- 144 & 44

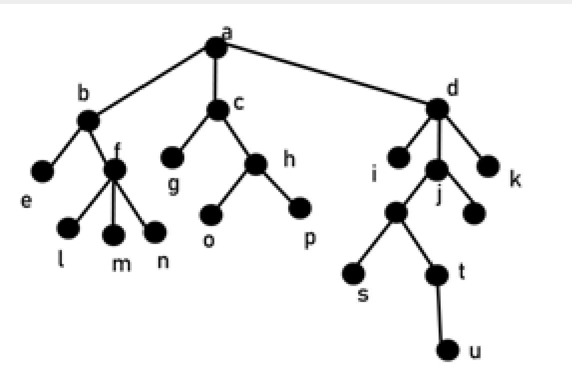
6.

The graph  is

- A tree
- Not a tree
- A cycle
- $K_{3,3}$

7.

Answer these questions about the rooted tree

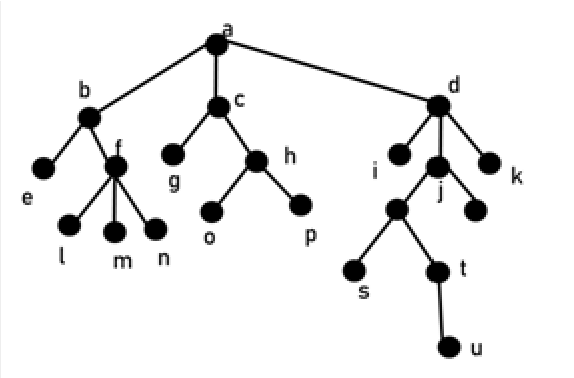


. Which vertex is the root?

- B
- C
- D
- A

8.

Answer these questions about the rooted tree

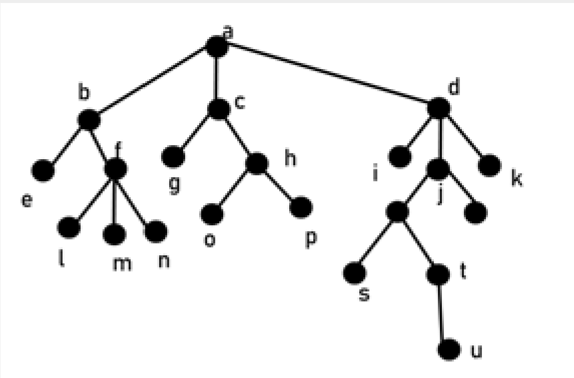


. Which vertices are internal?

- [x] a, b, c, d, f, h, j, q, t
- [ ] a, b, d, e, f, g, h, t, q, l, o
- [ ] a, b, f, d, f, k, j, m, t
- [ ] none of these

9.

Answer these questions about the rooted tree

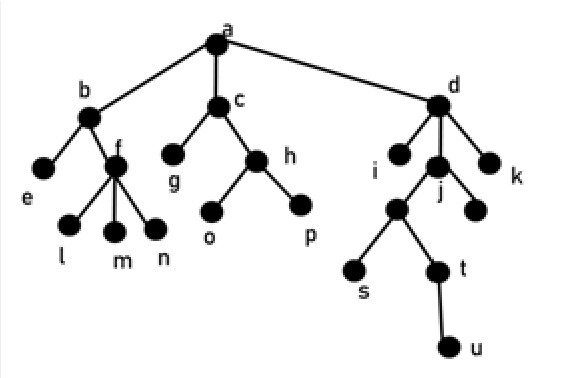


. Which vertices are leaves?

- [ ] e, a, i, k, l, b, j, o, l, r, s, a
- [ ] e, f, i, h, l, m, n, u, p, r, p, u
- [x] e, g, i, k, l, m, n, o, p, r, s, u
- [ ] e, b, i, k, x, m, n, z, p, r, q, u

10.

Answer these questions about the rooted tree

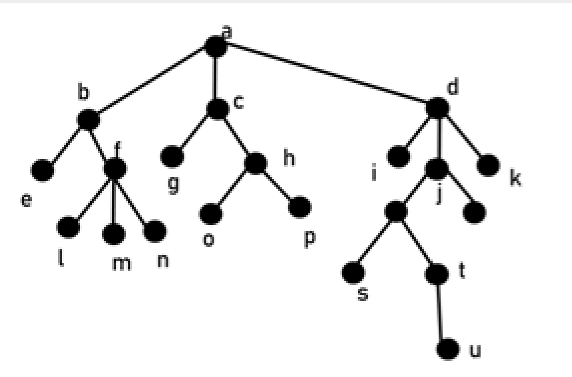


. Which vertices are children of j?

- q, r
- t, r
- u, r
- b, r

11.

Answer these questions about the rooted tree

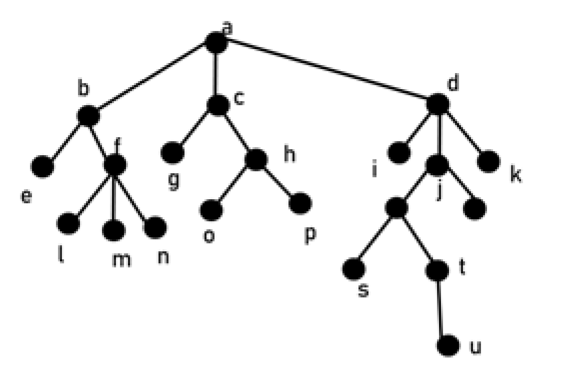


. Which vertex is the parent of h?

- A
- B
- C
- d

12.

Answer these questions about the rooted tree

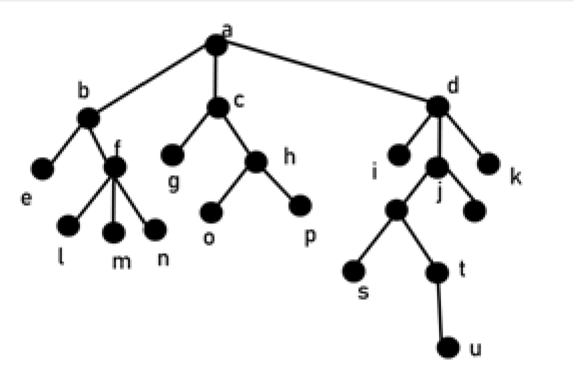


. Which vertices are siblings of o?

- M
- N
- O
- P

13.

Answer these questions about the rooted tree

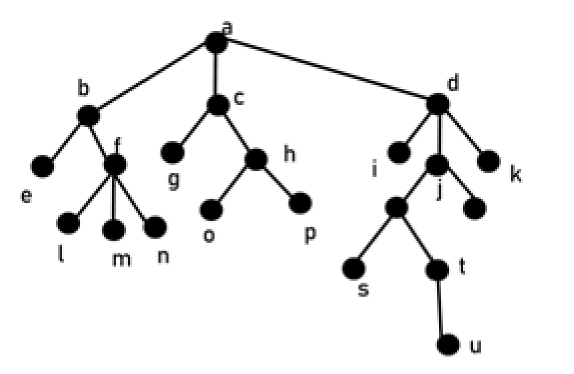


. Which vertices are ancestors of m?

- f, b, a
- d, g, t
- r, e, o
- w, q, e

14.

Answer these questions about the rooted tree



. Which vertices are descendants of b?

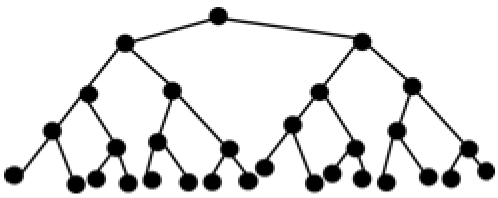
- ○ e, V, I, m, n
- ◉ e, f, l, m, n
- ○ e, Y, A, m, n
- ○ None of these

15.

Howmanyedgesdoesafullbinarytreewith1000internal vertices have?

- ○ 4000
- ○ 1000
- ◉ 2000
- ○ 500

16.

The following tree is a 

- ○ binary tree of height 7
- ○ binary tree of height 6
- ○ binary tree of height 5
- ◉ binary tree of height 4

Unit 13 : Self assessment-13

Success

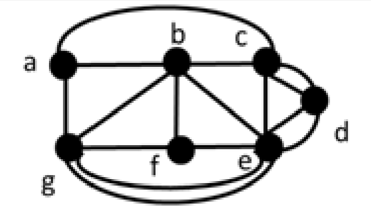
1.

How many edges must be removed from a connected graph with n vertices and m edges to produce a spanning tree?

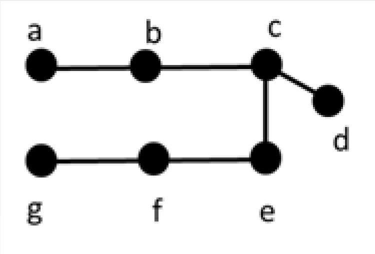
- ◉ m−n+1
- ○ m-n+2
- ○ m-n+3
- ○ m-n+4

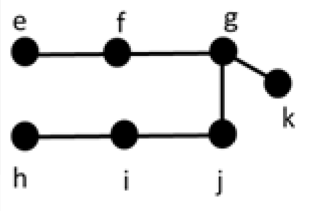
2.

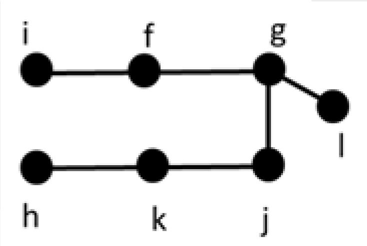
A spanning tree for the graph shown by removing edges in simple circuits.



is

- (selected) 

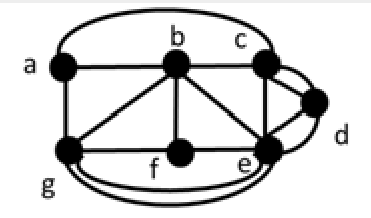
- 

- 

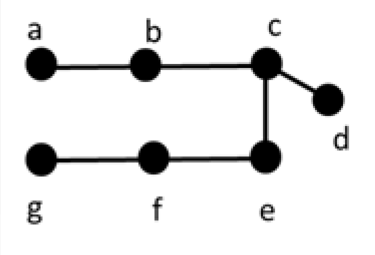
- None of these

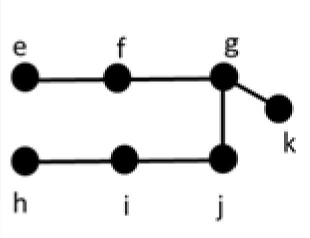
3.

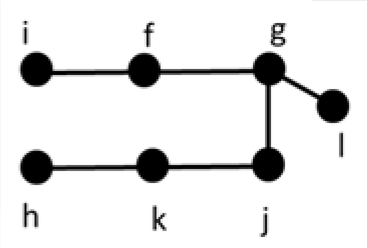
A spanning tree for the graph shown by removing edges in simple circuits.



is

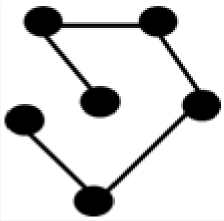






None of these

4.

A spanning tree  is for the graph

- W_5
- C_5
- K_5
- $K_{5,5}$

5.

How many different spanning trees does simple graphK_3 have?

- 4
- 3
- 7
- 6

6.

How many different spanning trees does simple graphK_4 have?

- 15
- 16

17

18

7.

How many different spanning trees does simple graphs $K_{2,2}$ have?

6

4

5

7

8.

How many different spanning trees does simple graphs C_5 have?

9

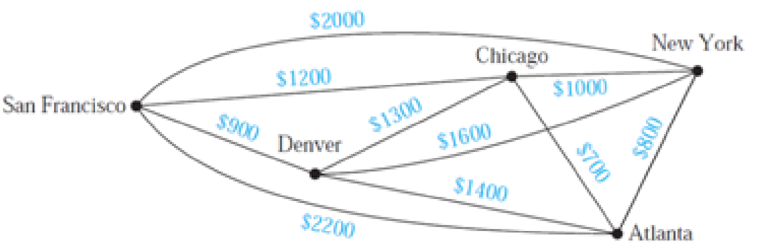
5

8

0

9.

Using Kruskal's algorithm to design the communications network



described here

following is the correct answer.

Kruskal's algorithm will have us include first the links from Chicago to Atlanta, then Atlanta to New York, then Denver to San Francisco (the cheapest links). The next cheapest link, from Chicago to New York, cannot be included, since it would form a simple circuit. Therefore we next add the link from Chicago to San Francisco, and our network is complete.

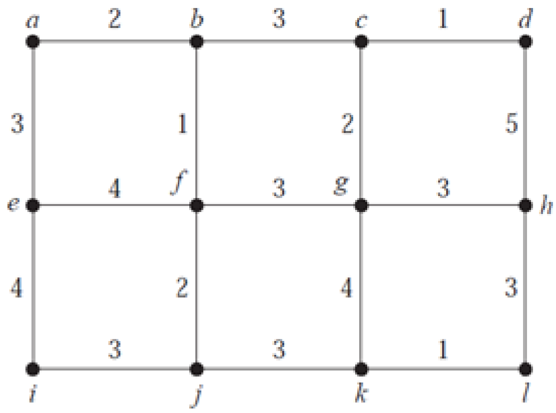
Kruskal's algorithm will have us include first the links from Atlanta to Chicago, then New York to Atlanta, then Denver to San Francisco (the cheapest links). The next cheapest link, from Chicago to New York, cannot be included, since it would form a simple circuit. Therefore we next add the link from Chicago to San Francisco, and our network is complete.

Kruskal's algorithm will have us include first the links from Atlanta to Chicago, then Atlanta to New York, then Denver to San Francisco (the cheapest links). The next cheapest link, from Chicago to New York, cannot be included, since it would form a simple circuit. Therefore we next add the link from San Francisco toChicago, and our network is complete.

Kruskal's algorithm will have us include first the links from Atlanta to Chicago, then Atlanta to New York, then Denver to San Francisco (the cheapest links). The next cheapest link, from

Chicago to New York, cannot be included, since it would form a simple circuit. Therefore we next add the link from Chicago to San Francisco, and our network is complete.

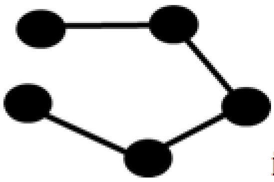
10.

Using Kruskal'salgorithmtoaminimumspanningtree for the weighted graph in 

is

- {e, k}, {a, d}, {h, i}, {b, j}, {c, l}, {e, m}, {b, n}, {g, o}
- {e, f}, {a, d}, {h, i}, {b, d}, {c, f}, {e, h}, {b, c}, {g, h}
- {e, p}, {q, d}, {s, i}, {v, d}, {d, f}, {e, h}, {b, c}, {g, h}
- {e, p}, {q, j}, {s, i}, {v, d}, {d, f}, {e, h}, {b, c}, {g, h}

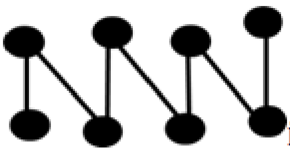
11.

A spanning tree  **is for the graph**

-

- Q_3
- W_5
- K_5
- $K_{5,5}$

12.

A spanning tree  **is for the graph**

- $K_{4,4}$
- $K_{1,4}$

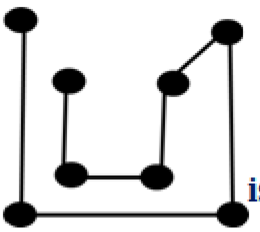
- $K_{2,6}$
- $K_{5,6}$

13.

A spanning tree  is for the graph

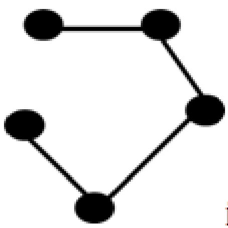
- $K_{1,4}$
- $K_{2,6}$
- $K_{5,6}$
- $K_{1,6}$

14.

A spanning tree  is for the graph

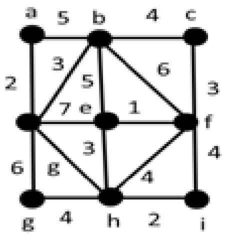
- Q_3
- W_5
- K_5
- $K_{5,5}$

15.

A spanning tree  is for the graph

- C_5
- W_5
- K_5
- $K_{5,5}$

16.

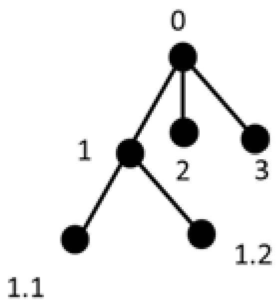
Using Prim's algorithm to find a minimum spanning tree for the given weighted graph  we get

- [ ] {e, b}, {c, f}, {e, m}, {h, o}, {b, r}, {b, u}, {a, d}, {g, h}
- [ ] {e, c}, {c, i}, {e, k}, {h, p}, {b, s}, {b, v}, {a, d}, {g, h}
- [ ] {e, d}, {c, j}, {e, l}, {h, q}, {b, t}, {b, w}, {a, d}, {g, h}
- [x] {e, f}, {c, f}, {e, h}, {h, i}, {b, c}, {b, d}, {a, d}, {g, h}

Unit 14 : Self assessment-14

Success

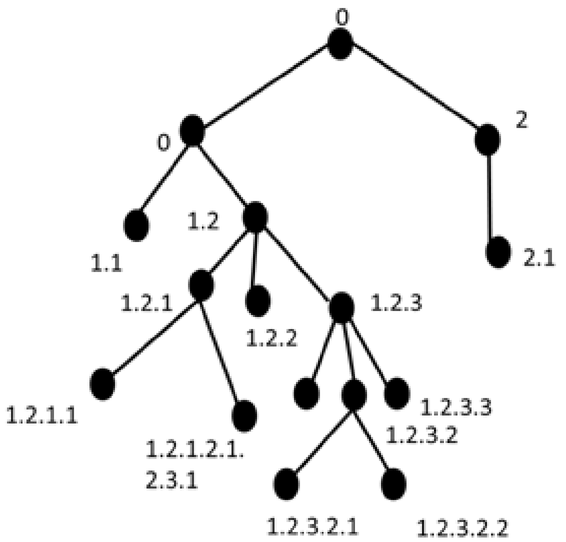
1.

The lexicographic order of their labels  is

- [ ] the order is 1 < 1<1.1<1.2 < 2 <3 .
- [x] the order is 0 < 1<1.1<1.2 < 2 <3 .
- [ ] the order is 1.1 < 1<1.1<1.2 < 2 <3 .
- [ ] the order is 0.1 < 1<1.1<1.2 < 2 <3 .

2.

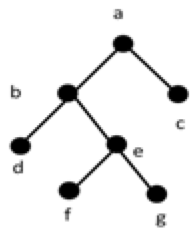
The lexicographic order of their labels



is

- ◉ 0 < 1 < 1.1 < 1.2 < 1.2.1 < 1.2.1.1 < 1.2.1.2 <1.2.2 < 1.2.3 < 1.2.3.1 < 1.2.3.2 < 1.2.3.2.1 < 1.2.3.2.2 < 1.2.3.3 < 2 < 2.1.
- ○ 1 < 0 < 1.1 < 1.2 < 1.2.1 < 1.2.1.1 < 1.2.1.2 <1.2.2 < 1.2.3 < 1.2.3.1 < 1.2.3.2 < 1.2.3.2.1 < 1.2.3.2.2 < 1.2.3.3 < 2 < 2.1.
- ○ 0 < 1 < 1.1.1 < 1.2 < 1.2.1 < 1.2.1.1 < 1.2.1.2 <1.2.2 < 1.2.3 < 1.2.3.1 < 1.2.3.2 < 1.2.3.2.1 < 1.2.3.2.2 < 1.2.3.3 < 2 < 2.1.
- ○ 0 < 1 < 1.1 < 1.2.1 < 1.2.1 < 1.2.1.1 < 1.2.1.2 <1.2.2 < 1.2.3 < 1.2.3.1 < 1.2.3.2 < 1.2.3.2.1 < 1.2.3.2.2 < 1.2.3.3 < 2 < 2.1.

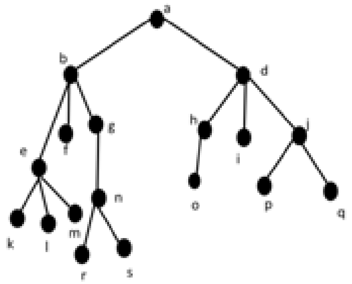
3.

The vertices of the given ordered rooted tree 

is

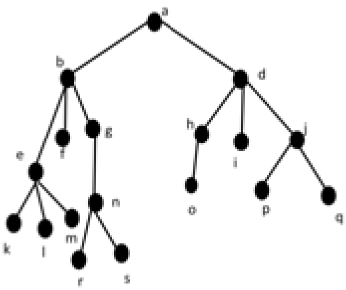
- ○ a, b, a, e, f, e, c
- ◉ a, b, d, e, f, g, c
- ○ a, b, h, e, f, m, a
- ○ a, h, k, e, f, l, c

4.

For  **the order in which a preorder traversal visit is**

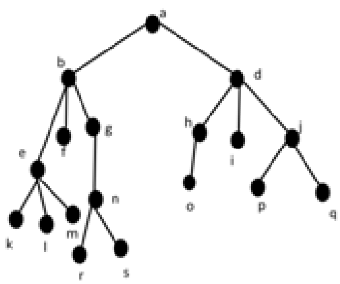
- a, b, e, k, o, m, f, g, n, g, s, c, p, h, o, i, j, p, q
- a, b, e, k, l, m, f, g, n, r, s, c, d, h, o, i, j, p, q
- a, b, e, k, l, m, j, g, n, k, s, c, d, l, o, i, j, m, q
- none of these

5.

For  **the order in which ainorder traversal visit is**

- j, n, o, a, f, c, g, k, h, p, l
- e, m, j, n, o, a, f, c, g, k, h, p, l
- d, b, i, e, m, j, n, o, a, f, c, g, k, h, p, l
- none of these

6.

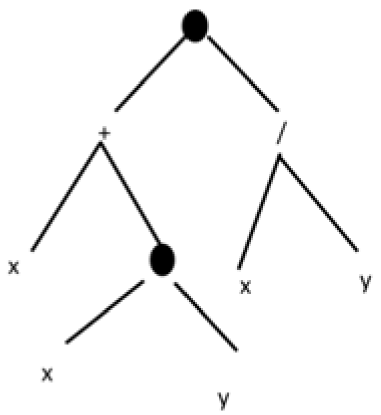
For  **the order in which a postorder traversal visit is**

- k, j, i, e, f, r, s, n, g, b, c, o, h, i, p, q, j, d, a
- s, n, g, b, c, o, h, i, p, q, j, d, a

k, l, m, e, f, r, s, n, g, b, c, o, h, i, p, q, j, d, a

None of these

7.

Using binary trees  the expression is

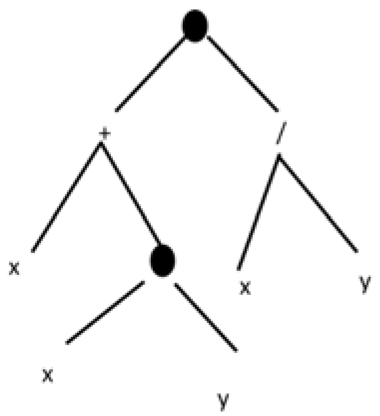
(x +xy) +(x/y)

(x +xy) -(x/y)

(x +xy) *(x/y)

(x +xy) \(x/y)

8.

Using binary trees  the expression is

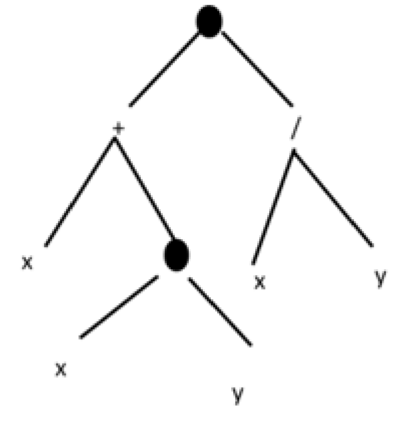
x - ((xy +x)/y) u

x * ((xy +x)/y) u

x \ ((xy +x)/y) u

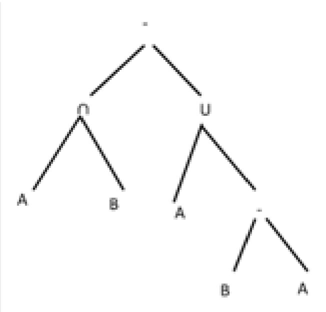
x + ((xy +x)/y) u

9.

Postfix notation of  is

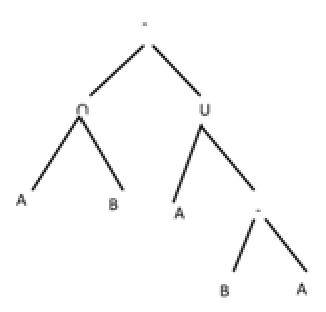
- ○ x x y * + x y / *
- ○ x x y * + x y / =
- ◉ x x y * + x y / +
- ○ x x y * + x y /)

10.

Using an ordered rooted tree . Can be writtenas the this

- ○ (A∩B) + (A∪ (B −A))
- ○ (A∩B) * (A∪ (B −A))
- ○ (A∩B) \ (A∪ (B −A))
- ◉ (A∩B) − (A∪ (B −A))

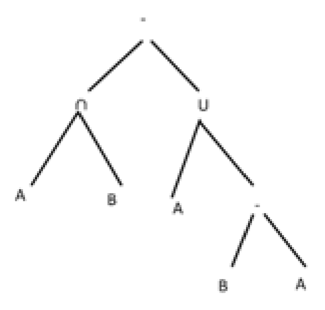
11.

Prefix notation of  is

- ◉) −∩AB∪A−BA
- ○) −∩BA∪A−BA
- ○) −∩CA∪A−BA

) −∩BC∪A−BA

12.

Postfix notation of 

is

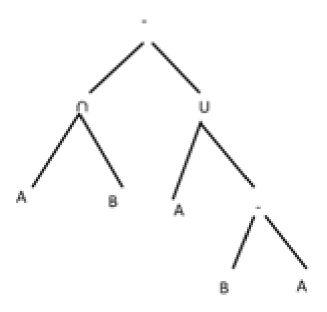
AB∩ABA−∪−

AB∩CAA−∪−

AB∩AFA−∪−

BC∩ABA−∪−

13.

Infix notation 

is

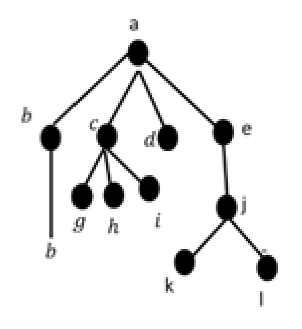
((A∩B) −(A∪(B−A)))

((A∩B) −(A∪(B−A)))

((F∩B) −(c∪(B−A)))

None of these

14.

The ordered rooted tree 

is such that

whose preorder traversal is b, a, f, c, g, h, i, d, e, j, k, l, where a has four children, c has three children, j has two children, b and e have one child each, and all other vertices are leaves

- [x] whose preorder traversal is a, b, f, c, g, h, i, d, e, j, k, l, where a has four children, c has three children, j has two children, b and e have one child each, and all other vertices are leaves
- [ ] whose preorder traversal is a, b, f, c, g, h, i, e, d, j, k, l, where a has four children, c has three children, j has two children, b and e have one child each, and all other vertices are leaves
- [ ] whose preorder traversal is a, b, f, c, g, h, i, d, e, j, l, k, where a has four children, c has three children, j has two children, b and e have one child each, and all other vertices are leaves