B.Tech II (CSE) Discrete Mathematics Quiz 1

*Required

Untitled section

Responses are limited to only one

If aN= { ax, for x in N}, then the intersection of 3N and 7N is equal to * 1 point

- [ ] None
- [x] 21N
- [ ] empty set
- [ ] 3N
- [ ] 7N

2. Let X be a family of sets and R be a relation in X, defined by 'A is disjoint from B'. Then, R is * 1 point

- [ ] reflexive
- [ ] transitive
- [x] symmetric
- [ ] antisymmetric

3. If R is reflexive,symmetric and transitive then the relation is said to be * 1 point

- [x] Equivalence relation
- [ ] Compatibility relation
- [ ] Binary relation
- [ ] Partial order relation

If 76% of students DM and 63% like Engg. Mathematics. What can be said about the percentage of persons who like both courses? * 1 point

- [ ] 14
- [ ] 49
- [x] 39
- [ ] 37

The inverse of the permutation (1 3 5)(2 4) is * 1 point

- [x] (5 3 1)(4 2)
- [ ] (1 2)(1 4)(3 2)(3 4)(5 2)(5 4)
- [x] (4 2)(5 3 1)
- [ ] (1 3 5)(2 4)
- [ ] (2 4)(1 3 5)

5. * 1 point

If R and S be the relations on a set A represented by the matrices $M_R = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 1 & 1 \\ 1 & 0 & 0 \end{bmatrix}$ and $M_s = \begin{bmatrix} 0 & 1 & 0 \\ 0 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$, find the matrix that represent $R \oplus S$.

- ( ) None of these
- ( ) Option 2 $\begin{bmatrix} 0 & 1 & 0 \\ 0 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$
- (•) Option 3 $\begin{bmatrix} 0 & 0 & 0 \\ 1 & 0 & 0 \\ 0 & 1 & 1 \end{bmatrix}$
- ( ) Option 1 $\begin{bmatrix} 0 & 1 & 0 \\ 1 & 1 & 1 \\ 1 & 0 & 0 \end{bmatrix}$

Consider Q={1, -1, i, -i, j, -j, k, -k} with binary operation * defined as x(-1)= (-1)x=-x, i*i=j*j=k*k=1, i*j=k, j*k=i, k*i=j, j*i=-k, k*j=-i, i*k=-j. Which of the following are true? * 1 point

- [x] (Q, *) is a group.
- [ ] (Q, *) is not a group.
- [ ] (Q, *) is abelian group.
- [x] (Q, *) is a cyclic group.

4. * 1 point

If A={1,2,3,4} × {1,2,3,4} and the relation R is defined on A by (a, b) R (c, d) if a+ b = c +d, then find the quotient set of A by R.

[(1,1), (1,2), (1,3), (1,4), (2,4), (3,4), (4,4)]

Option 2

[(1,1), (1,2), (1,3), (1,4), (3,3), (3,4), (4,4)]

Option 3

None of these

[(1,1), (1,2), (1,3), (1,4), (2,1), (2,2), (2,3)]

Option 1

1. The relation R defined on the set A = {1, 2, 3, 4, 5} by R = {(x, y) : | x^2-y^2| < 16} is given by * 1 point

{(1, 1), (2, 1), (3, 1), (4, 1), (2, 3)}

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

None of the above

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

If the binary operation * is defined on a set of ordered pairs of real number as (a, b)*(c, d)=(ad+bc, bd) then is it associative? (1, 2)*(3, 5)*(3, 4)=_____ * 1 point

yes , (32, 40)

No (72, 40)

yes (72, 40)

No (32,40)

none

Back Submit