1. If *A*, *B* and *C* are any three sets, then *A* × (*B* ∪ *C*) is equal to

(a) (*A* × *B*) ∪ (*A* × *C*) (b) (*A* ∪ *B*) × (*A* ∪ *C*)

(c) (*A* × *B*) ∩ (*A* × *C*) (d) None of these

1. Let *A* = {1, 2, 3, 4, 5}; *B* = {2, 3, 6, 7}. Then the number of elements in (*A*  × *B*) ∩ (*B* × *A*) is

(a) 18 (b) 6

(c) 4 (d) 0

1. If *A* and *B* are two sets, then *A* × *B* = *B* × *A* iff

(a)  (b) 

(c)  (d) None of these

1. If (1, 3), (2, 5) and (3, 3) are three elements of *A* × *B* and the total number of elements in  is 6, then the remaining elements of  are

(a) (1, 5); (2, 3); (3, 5) (b) (5, 1); (3, 2); (5, 3)

(c) (1, 5); (2, 3); (5, 3) (d) None of these

1. *A* = {1, 2, 3} and *B* = {3, 8}, then (*A* ∪ *B*) × (*A* ∩ *B*) is

(a) {(3, 1), (3, 2), (3, 3), (3, 8)}

(b) {(1, 3), (2, 3), (3, 3), (8, 3)}

(c) {(1, 2), (2, 2), (3, 3), (8, 8)}

(d) {(8, 3), (8, 2), (8, 1), (8, 8)}

1. If *A* = {2, 3, 5}, *B* = {2, 5, 6}, then (*A* – *B*) × (*A* ∩ *B*) is

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

(c) {(3, 2), (3, 5)} (d) None of these

1. If , , , then 

(a) 288 (b)2

(c) 12 (d) 17

1. If ;  and *f* is a mapping such that , then  is

(a) {(*a*, 1), (3, *b*)}

(b) {(*a*, 2), (4, *b*)}

(c){(1, *a*), (1, *b*), (2, *a*), (2, *b*), (3, *a*), (3, *b*), (4, *a*), (4, *b*)}

(d) None of these

1. If two sets *A* and *B* are having 99 elements in common, then the number of elements common to each of the sets  and  are

(a)  (b) 

(c) 100 (d) 18

1. Let *A =* {1, 2, 3}. The total number of distinct relations that can be defined over *A*  is

(a)  (b) 6

(c) 8 (d) None of these

1. Let  and . Which of the following is/are relations from *X* to *Y*

(a) 

(b) 

(c) 

(d)All the above

1. The relation *R* defined on the set of natural numbers as {(*a*, *b*) : *a* differs from *b* by 3}, is given by

(a) {(1, 4, (2, 5), (3, 6),.....} (b) {(4, 1), (5, 2), (6, 3),.....}

(c) {(1, 3), (2, 6), (3, 9),..} (d) None of these

1. The relation *R* is defined on the set of natural numbers as {(*a*, *b*) : *a* = 2*b}*. Then  is given by

(a) {(2, 1), (4, 2), (6, 3).....} (b) {(1, 2), (2, 4), (3, 6)....}

(c)  is not defined (d) None of these

1. The relation “less than” in the set of natural numbers is

(a) Only symmetric (b) Only transitive

(c) Only reflexive (d) Equivalence relation

1. Let *A* = {*a, b, c*} and *B* = {1, 2}. Consider a relation *R*  defined from set *A* to set *B*. Then *R*  is equal to set

(a) *A* (b) *B*

(c) *A* × *B* (d) *B* × *A*

1. If *R* is a relation from a finite set *A* having *m* elements to a finite set *B* having *n* elements, then the number of relations from *A* to *B* is

(a)  (b) 

(c)  (d) 

1. Let *R* be a relation on *N* defined by . The domain of *R* is

(a) {2, 4, 8} (b) {2, 4, 6, 8}

(c) {2, 4, 6} (d) {1, 2, 3, 4}

1. *R* is a relation from {11, 12, 13} to {8, 10, 12} defined by . Then  is

(a) {(8, 11), (10, 13)} (b) {(11, 18), (13, 10)}

(c) {(10, 13), (8, 11)} (d) None of these

1. Let *A* = {1, 2, 3}, *B* = {1, 3, 5}. If relation *R* from *A* to *B* is given by *R* ={(1, 3), (2, 5), (3, 3)}. Then  is

(a) {(3, 3), (3, 1), (5, 2)} (b) {(1, 3), (2, 5), (3, 3)}

(c) {(1, 3), (5, 2)} (d) None of these

1. Let *A* = {1, 2, 3, 4} and *R* be a relation in *A* given by *R* = {(1, 1), (2, 2), (3, 3), (4, 4), (1, 2), (2, 1), (3, 1),(1,4) (1, 3)}.

Then *R* is

(a) Reflexive (b) Symmetric

(c) Transitive (d) An equivalence relation

1. Let *A* = {1, 2, 3, 4} and let *R*= {(2, 2), (3, 3), (4, 4), (1, 2)} be a relation on *A*. Then *R* is

(a) Reflexive (b) Symmetric

(c) Transitive (d) None of these

1. The void relation on a set *A* is

(a) Reflexive (b) Symmetric and transitive

(c) Reflexive and symmetric (d) Reflexive and transitive

1. The relation "congruence modulo *m*" is

(a) Reflexive only (b) Transitive only

(c) Symmetric only (d) An equivalence relation

1. Let *R* = {(1, 3), (4, 2), (2, 4), (2, 3), (3, 1)} be a relation on the set *A* = {1, 2, 3, 4}. The relation *R* is

(a) Reflexive (b) Transitive

(c)Not symmetric (d) A function

1. If *A* is the set of even natural numbers less than 8 and *B* is the set of prime numbers less than 7, then the number of relations from *A* to *B* is

(a)  (b) 

(c)  (d) 

1. If  then  is equal to

(a) 6 (b) 9

(c) 3 (d) 0

1. If *A* = {1, 2, 4}, *B* = {2, 4, 5}, *C* = {2, 5}, then (*A* – *B*) × (*B* – *C*) is

(a) {(1, 2), (1, 5), (2, 5)} (b) {(1, 4)}

(c) (1, 4) (d) None of these

1. Given two finite sets *A*  and *B*  such that *n*(*A*) = 2, *n*(*B*) = 3. Then total number of relations from *A* to *B* is

(a) 4 (b) 8

(c) 64 (d) None of these

1. A relation *R* is defined from {2, 3, 4, 5} to {3, 6, 7, 10} by  is relatively prime to *y*. Then domain of *R* is

(a) {2, 3, 5} (b) {3, 5}

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

1. If  then  is

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

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