



### Exercise 1.6



#### Multiple choice questions

- If  $n(A \times B) = 6$  and  $A = \{1, 3\}$  then  $n(B)$  is  
(1) 1      (2) 2      (3) 3      (4) 6
- $A = \{a, b, p\}$ ,  $B = \{2, 3\}$ ,  $C = \{p, q, r, s\}$  then  $n[(A \cup C) \times B]$  is  
(1) 8      (2) 20      (3) 12      (4) 16
- If  $A = \{1, 2\}$ ,  $B = \{1, 2, 3, 4\}$ ,  $C = \{5, 6\}$  and  $D = \{5, 6, 7, 8\}$  then state which of the following statement is true.  
(1)  $(A \times C) \subset (B \times D)$       (2)  $(B \times D) \subset (A \times C)$   
(3)  $(A \times B) \subset (A \times D)$       (4)  $(D \times A) \subset (B \times A)$
- If there are 1024 relations from a set  $A = \{1, 2, 3, 4, 5\}$  to a set  $B$ , then the number of elements in  $B$  is  
(1) 3      (2) 2      (3) 4      (4) 8
- The range of the relation  $R = \{(x, x^2) \mid x \text{ is a prime number less than } 13\}$  is  
(1)  $\{2, 3, 5, 7\}$       (2)  $\{2, 3, 5, 7, 11\}$   
(3)  $\{4, 9, 25, 49, 121\}$       (4)  $\{1, 4, 9, 25, 49, 121\}$
- If the ordered pairs  $(a + 2, 4)$  and  $(5, 2a + b)$  are equal then  $(a, b)$  is  
(1)  $(2, -2)$       (2)  $(5, 1)$       (3)  $(2, 3)$       (4)  $(3, -2)$
- Let  $n(A) = m$  and  $n(B) = n$  then the total number of non-empty relations that can be defined from  $A$  to  $B$  is  
(1)  $m^n$       (2)  $n^m$       (3)  $2^{mn} - 1$       (4)  $2^{mn}$
- If  $\{(a, 8), (6, b)\}$  represents an identity function, then the value of  $a$  and  $b$  are respectively  
(1)  $(8, 6)$       (2)  $(8, 8)$       (3)  $(6, 8)$       (4)  $(6, 6)$