



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) $(6, 6)$