LAKSHYA (JEE)

Relations and Functions

1. If $(x - 2, y + 5) = \left(-2, \dfrac{1}{3}\right)$ are two equal ordered pairs, then x is equal to:
   (A) 0   (B) 1
   (C) 2   (D) 4

2. If $A \times B = \{(a, x), (a, y), (b, x), (b, y)\}$, then A is equal to:
   (A) {a, x}   (B) {b, y}
   (C) {a, b}   (D) {b, x}

3. If $P = \{2, 3\}$, then $P \times P$ is equal to:
   (A) {(2, 3), (3, 2)}
   (B) {(2, 2), (3, 3)}
   (C) {(2, 2), (2, 3), (3, 2)}
   (D) {(2, 2), (2, 3), (3, 2), (3, 3)}

4. Let $A = \{2, 5, 7, 9\}$ and $B = \{a, b, c\}$, then $n(A \times B)$ is equal to
   (A) 4   (B) 3
   (C) 7   (D) 12

5. If $A = \{4, 8\}$ and $B = \{p, q, r\}$, then $A \times B$ is equal to
   (A) {(4, p), (8, q), (4, q)}
   (B) {(4, p), (4, r), (8, p), (8, r)}
   (C) {(4p, 8q), (4r, 8q)}
   (D) {(4, p), (4, q), (4, r), (8, p), (8, q), (8, r)}

6. If $A = \{2, 3, 7, 9\}$ and $n(A \times B) = 12$, then the number of elements in set B is
   (A) 4   (B) 3
   (C) 2   (D) 8

7. If $A \{5, 7, 8\}$ and $B = \{9, 11\}$, then
   (A) $(9, 5) \in A \times B$ (B) $(7, 8) \in A \times B$
   (C) $(5, 11) \in A \times B$ (D) $(9, 11) \in A \times B$

8. The relation R from A to B is given as $R = \{(5, 3), (2, 7), (8, 5)\}$. The range of R is
   (A) {5, 2, 8}   (B) {3, 7, 5}
   (C) {2, 3, 5, 7, 8}   (D) {2, 3, 5, 7}

9. If $A = \{-1, 1\}$, then $A \times A \times A$ is equal to
   (A) {(−1, 1), (1, −1)}
   (B) {(−1, −1), (1, 1)}
   (C) {(−, −1), (−1, 1), (1, −1), (1, 1)}
   (D) {(−1, −1, −1), (−1, −1, 1), (−1, 1, −1), (−1, 1, 1), (1, −1, −1), (1, − 1, 1), (1, 1, −1) (1, 1, 1)}

10. Let X be any non-empty set containing n elements, then the number of relations on X is
    (A) 2^{n^2} (B) 2^n
    (C) 2^{2n} (D) n^2

ANSWERS

1. (A)
2. (C)
3. (D)
4. (D)
5. (D)
6. (B)
7. (C)
8. (B)`
9. (D)
10. (A)

Note – If you have any query/issue

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