



INDIAN SCHOOL AL WADI AL KABIR

Std. XI

Mathematics work sheet

Sets (Assertion & Reason)

ASSERTION-REASON BASED QUESTIONS

In the following questions a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- A) Both A and R are true and R is the correct explanation of A.
- B) Both A and R are true but R is not the correct explanation of A.
- C) A is true but R is false.
- D) A is false but R is true.

1.	(A) The collection of all-natural numbers less than 100 is a set. ( R ) A set is a well-defined collection of distinct objects.
2.	(A) The power set of $\{1, 2\}$ is $\{\emptyset, \{1\}, \{2\}, \{1, 2\}\}$ ( R ) The power set is the set of all subsets.
3.	(A) $A = \{a, b\}$ and $B = \{a, b, c\}$ then A is a subset of B. ( R ) All subsets are finite sets.
4.	(A) If W is the set of whole numbers and N is the set of natural numbers, then $W - N = \{ \}$ . ( R ) $A - B$ is the set of elements of A which are not in B.
5.	(A) If A is the set of letters of the word 'FOLLOW' and B is the set of letters of the word 'WOLF', then A and B are equal sets. ( R ) Two sets are equal if they have equal number of elements.
6.	(A) If $n(A) = 4$ and $n(B) = 3$ then $n(A \times B) = 4$ . ( R ) $n(A \times B) = n(A) \cdot n(B)$
7.	(A) $f(x) = x^2$ , $f: N$ to $N$ is a function. ( R ) All relations are functions.
8.	(A) $R = \{(1, 2), (3, 4), (4, 5), (5, 6), (6, 6)\}$ is a function. (R) The domain of a real valued function is a subset of real numbers.
9.	(A) $C(20, 13) + C(20, 14) - C(20, 6) - C(20, 7) = 0$ ( R ) $C(n, r) = C(n, n-r)$

10.	(A) $C(8, r) = 56$ and $P(8, r) = 336$ then $r = 3$ (R) $C(n, r) = \frac{P(n, r)}{r}$ .
11.	(A) If AM of two positive numbers is 12.5 and GM is 10 then the numbers are 20 and 5. (R) If a and b are two positive numbers $AM = a + b$ and $GM = ab$
12.	(A) If 27, x, 3 are in GP $x = 81$ . (R) If a, b, c are in GP, then $b^2 = ac$ .
13.	(A) If $2x - 1 < 5$ , then $x \in \{1, 2\}$ (R) Any solution of an inequality in one variable is a value of the variable which makes it a true statement.
14.	(A) If $S_n = n^2 + 2n$ , then common difference of the AP is 2. (R) In an AP $S_n = \frac{n}{2}[2a + (n - 1)d]$ .

ANSWER

1.	A	2.	A	3.	C	4.	D	5.	C	6.	D	7.	C
8.	B	9.	A	10.	C	11.	C.	12.	D	13.	D	14.	B

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