Sr. No.	Questions	A	B	C	D
1	The set builder form of the set $\left\{1, \frac{1}{3}, \frac{1}{5}, \frac{1}{7}, \cdots\right\}$ is:	$\left\{x \mid x = \frac{1}{n}, n \in W\right\}$	$\left\{x \mid x = \frac{1}{2n+1}, n \in W\right\}$✓	$\left\{x \mid x = \frac{1}{n+1}, n \in W\right\}$	$\{x \mid x = 2n+1, n \in W\}$
2	If $A = \{\}$, then $P(A)$ is:	$\{\}$	$\{1\}$	$\{\{\ \}\}$✓	φ
3	If $U = \{1,2,3,4,5\}$, $A = \{1,2,3\}$ and $B = \{3,4,5\}$, then $U - (A \cap B)$ is:	$\{1,2,4,5\}$✓	$\{2,3\}$	$\{1,3,4,5\}$	$\{1,2,3\}$
4	If A and B are overlapping sets, then $n(A \cap B)$ is equal to:	$n(A)$	$n(B)$	$A \cap B$	$n(A) - n(A \cap B)$✓
5	If $A \subseteq B$ and $B - A \neq \varphi$, then $n(B - A)$ is equal to:	0	$n(B)$	$n(A)$	$n(B) - n(A)$✓
6	If $n(A \cup B) = 50$, $n(A) = 30$, and $n(B) = 35$, then $n(A \cap B)$ =:	23	15✓	9	40
7	If $A = \{1,2,3,4\}$ and $B = \{x,y,z\}$, then the Cartesian product of A and B contains exactly _____ elements.	13	12✓	10	6
8	If $f(x) = x^2 - 3x + 2$, then the value of $f(a+1)$ is equal to:	$a+1$	a^2+1	a^2+2a+1	a^2-a✓
9	Given that $f(x) = 3x + 1$, if $f(x) = 28$, then the value of x is:	9✓	27	3	18
10	Let $A = \{1,2,3\}$ and $B = \{a,b\}$; two non-empty sets and $f: A \to B$ be a function defined as $f = \{(1,a),(2,a),(3,b)\}$, then which of the following statements is true?	f *is injective*	f *is surjective*✓	f *is bijective*	f *is into only*

Solution of MCQs

1	Elements are odd reciprocals $\Rightarrow \frac{1}{2n+1}$
2	Power set of empty set $= \{\{\ \}\}$ or $\{\varphi\}$
3	$A \cap B = \{3\}, U - A \cap B = \{1,2,4,5\}$

4	$n(A \cap B) = n(A) - n(A \cap B)$ $Let \quad A = \{1.2\}$ $and \quad B = \{1\}$ $A \cap B = \{1\}$ $Now\ n(A \cap B) = n(A) - n(A \cap B)$ $1 = 2 - 1$ $1 = 1$
5	$B - A =$ elements only in B $\Rightarrow n(B) - n(A)$
6	$n(A \cup B) = 50, \quad n(A) = 30, \quad$ and $\quad n(B) = 35, \quad$ then $\quad n(A \cap B) = ?$ $n(A \cup B) = n(A) + n(B) - n(A \cap B)$ $50 = 30 + 35 - n(A \cap B)$ $n(A \cap B) = 30 + 35 - 50$ $n(A \cap B) = 15$
7	$4\ elements \times 3\ elements = 12$
8	$f(a+1) = ?$ $f(x) = x^2 - 3x + 2$ $f(a+1) = (a+1)^2 - 3(a+1) + 2$ $f(a+1) = (a)^2 + 2(a)(1) + (1)^2 - 3a - 3 + 2$ $f(a+1) = a^2 + 2a + 1 - 3a - 3 + 2$ $f(a+1) = a^2 - a$
9	$f(x) = 3x + 1 = 28 \Rightarrow 3x = 28 - 1 \Rightarrow x = 9$
10	Every element in B is mapped, so f is surjective.