	ANSWER KEY XISC	
1	D	
2	A	
3	(i) $n(A) = n(A - B) + n(A \cap B)$ $= 14 + x + x$ $= 14 + 2x$ $N(B) = n(B - A) + n(A \cap B)$ $= 3x + x$ $= 4x$ but $n(A) = n(B)$ (Given) $14 + 2x = 4x$ $x = 7$ (ii) $n(A \cup B) = n(A - B) + n(B - A) + n(A \cap B)$ $= 14 + x + 3x + x$ $= 14 + 5x = 14 + 5 \times 7 = 49$	
4	$C - B = A$ $= (A \cup B) - B$ $= (A \cup B) \cap B'$ $= B' \cap (A \cup B)$ $= (B' \cap A) \cup (B' \cap B)$ $= (B' \cap A) \cup \phi$ $= B' \cap A$ $= A \cap B'$ $= A - B$ $= A$ (Proved) $[\because A \cap B = \phi]$	

	OR Let $x \in A \cup B$ $\Rightarrow x \in A$ or $x \in B$ $\Rightarrow x \in B$ $\{\because A \subset B\}$ $\Rightarrow A \cup B \subset B$ ...(1) We know that, $B \subset A \cup B$ {this is always true} ...(2) From (1) and (2) $A \cup B = B$ Now, suppose $y \in A$ $\Rightarrow y \in A \cup B$ $\Rightarrow y \in B$ $\{\because A \cup B = B\}$ $\Rightarrow A \subset B$ Therefore, $A \subset B \Leftrightarrow A \cup B = B$ Hence Proved	
5	**For** $Df, f(x)$ **must be real number** $\Rightarrow 3x^2 - 5$ **must be a real number** **Which is a real number for every** $x \in R$ $\Rightarrow Df = R$..........(i) $for\ Rf$: **let** $y = f(x) = 3x^2 - 5$ **We know that for all** $x \in R, x^2 \geq 0 \Rightarrow 3x^2 \geq 0$ $\Rightarrow 3x^2 - 5 \geq -5 \Rightarrow y \geq -5 \Rightarrow Rf = [-5, \infty]$ Funthes, as $-3 \in Df$, $f(-3)$ exists is and $f(-3)$ $= 3(-3)^2 - 5 = 22.$ As $43 \in Rf$ on putting $y = 43$ is (i) weget $3x^2$-5=43 $\Rightarrow 3x^2$=48 $\Rightarrow$ x^2=16 $\Rightarrow x = -4, 4.$ There fore -4 and 4 are number (is Df) **which are associated with the number** 43 **in** Rf	
6	**For** $Df, f(x)$ **must be a real number** $\Rightarrow \sqrt{x^2 - 4}$ **Must be a real number** $\Rightarrow x^2 - 4 \geq 0 \Rightarrow (x+2)(x-2) \geq 0$ $\Rightarrow$ **either** $x \leq -2$ or $x \geq 2$ $\Rightarrow D_F = (-\infty, -2] \cup [2, \infty).$	

	For R_F, **let** $y=\sqrt{x^2-4}$.........(i) **As square root of a real number is always non-negative,** $y \geq 0$ **On squaring (i), we get** $y^2 = x^2 - 4$ $\Rightarrow x^2 = y^2 + 4$ **but** $x^2 \geq 0$ **for all** $x \in D_F$ $\Rightarrow y^2 + 4 \geq 0 \Rightarrow y^2 \geq -4$, **which is true for all** $y \in R$. **also** $y \geq 0$ $\Rightarrow R_F = [0, \infty)$ **OR** **For Df ,** $f(x)$ **must be a real no.** $\Rightarrow \mid x+2 \mid \neq 0 \Rightarrow x+2 \neq 0 \Rightarrow x \neq -2$ $\therefore$ **Domain of** f **= set of all real numbers** $except -2\ i.e. Df = R - \{-2\}$ $for\ Rf$ $caseI\ \ if\ x+2>0\ then \mid x+2 \mid = x+2$ $\therefore f(x) = \frac{x+2}{\mid x+2 \mid} = 1$ $caseII\ if\ x+2<0, \mid x+2 \mid = -(x+2)$ $\therefore f(x) = \left(\frac{x+2}{-x+2}\right) = -1$ $\therefore Range\ of\ f = \{-1, 1\}$	
7	**Let A and B be two sets having m and n elements respectively** **no of subsets of A =** 2^m **no of subsets of B =** 2^n **According to question** $2^m = 56 + 2^n$ $2^m - 2^n = 56$	

	$2^n (2^{m-n} - 1) = 56$ $2^n (2^{m-n} - 1) = 2^3 (2^3 - 1)$ $2^n = 2^3$ $n = 3$ $m - n = 3$ $m - 3 = 3$ $m = 6$	