Ch-6

SETS

6(A)

i. $A_1 = \{x : 2x+3 = 11\}$

$\Rightarrow 2x+3 = 11$
$\Rightarrow 2x = 11-3$
$\Rightarrow 2x = 8$
$\Rightarrow x = \frac{8}{2} = 4$

So, $A_1 = \{4\}$ Ans.

ii. $A_2 = \{x : x^2 - 4x - 5 = 0\}$

$\Rightarrow x^2 - 4x - 5 = 0$
$\Rightarrow x^2 - 5x + x - 5 = 0$
$\Rightarrow x(x-5) + 1(x-5) = 0$
$\Rightarrow (x-5)(x+1) = 0$
$\Rightarrow$ either $x-5 = 0$ or $x+1 = 0$

$A_2 = \{5, -1\}$ Ans.

iii. $A_3 = \{x : x \in Z, -3 \leq x < 4\}$

$-3 \leq x < 4$
$x = -3, -2, -1, 0, 1, 2, 3$

So, $A_3 = \{-3, -2, -1, 0, 1, 2, 3\}$ Ans.

iv. $A_4 = \{x : x$ is a two digit number and sum of digit of x is $7\}$

$\therefore x = 16, 25, 34, 43, 52, 61, 70$

$A_4 = \{16, 25, 34, 43, 52, 61, 70\}$

v. $A_5 = \{x : x = 4n, n \in W$ and $n \leq 4\}$

$x = 4n$

When $n = 0$, $x = 4 \times 0$

$x = 0$

When $n = 1$, $x = 4 \times 1$

$x = 4$

When $n = 2$, $x = 4 \times 2$

$x = 8$

When $n = 3$, $x = 4 \times 3$

$x = 12$

$A_5 = \{0, 4, 8, 12\}$