

Ex 3.4 Question 2

2 (iii) let digit at units place =  $x$   
digit at tens place =  $y$

$$\therefore \text{number} = 10y + x$$

acc to condition I

$$x + y = 9 \dots \textcircled{1}$$

acc. to condition II

$$9(10y + x) = 2(10x + y)$$

$$\Rightarrow 90y + 9x = 20x + 2y$$

$$\Rightarrow 9x - 20x + 90y - 2y = 0$$

$$\Rightarrow -11x + 88y = 0$$

( $\div -11$ )

$$x - 8y = 0 \dots \textcircled{ii}$$

$$\textcircled{i} - \textcircled{ii}$$

$$x + y = 9$$

$$x - 8y = 0$$

$$\begin{array}{r} - \quad + \\ \hline 9y = 9 \end{array}$$

$$\Rightarrow y = \frac{9}{9}$$

$$\Rightarrow y = 1$$

Sub  $\textcircled{i}$

$$x + 1 = 9$$

$$\Rightarrow x = 9 - 1 = 8$$

$$\therefore \text{No} = 10 \times 1 + 8 = 18$$

2 (iv)

let no. of Rs 50 notes =  $x$

no. of Rs 100 notes =  $y$

acc to condition I

$$50x + 100y = 2000$$

( $\div 50$ )

$$x + 2y = 40 \dots \textcircled{i}$$

acc. to condition II

$$x + y = 25 \dots \textcircled{ii}$$

$$\textcircled{i} - \textcircled{ii}$$

$$x + 2y = 40$$

$$x + y = 25$$

$$\begin{array}{r} - \quad - \\ \hline y = 15 \end{array}$$

Sub  $\textcircled{ii}$

$$x + 15 = 25$$

$$\Rightarrow x = 25 - 15 = 10$$

$\therefore$  no. of Rs 50 notes = 10  
no. of Rs 100 notes = 15