

$$\sigma = \begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 6 & 3 & 4 & 5 & 2 & 7 & 1 & 9 & 8 \end{pmatrix}$$

$$\sigma = (167)(2345)(89)$$

$$\text{cyclic decomposition} = 3+4+2$$

We know

$\Rightarrow$ Same cyclic decomposition are conjugate to each other.

To find no. of element of cyclic decomposition - 3+4+2 is

$$= \frac{9!}{1^0 \cdot 2^1 \cdot 3^2 \cdot 4^1 \cdot (1)! \cdot (1)! \cdot (1)!}$$

$$= \frac{9 \times 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2}{2 \times 3 \times 4}$$

$$= \boxed{15120} \text{ Ans}$$