

Answer 81.

$$(x^2 - 2x + k)x^4 - 6x^3 + 16x^2 - 25x + 10 \div (x^2 - 4x + 8 - k)$$

$$\overline{(-9 + 2k)x + 10 - 8k + k^2}$$

Now given remainder = $x + a$

$$\therefore x + a = (-9 + 2k)x + 10 - 8k + k^2$$

Comparing coefficients of x on both sides

$$1 = -9 + 2k$$

$$\text{or } 2k = 10$$

$$\text{or } k = 5$$

Comparing constants on both sides

$$10 - 8k + k^2 = a$$

$$10 - 8 \times 5 + 5^2 = a$$

$$\text{or } a = -5$$

Also visit