Related Questions with Solutions

Questions

Quetion: 01

In the expansion of $\left(x^4 - \dfrac{1}{x^3} \right)^{15}$ the coefficient of x^{39} is

A. 1365
B. – 1365
C. 455
D. – 455

Solutions

Solution: 01

General term in $\left(x^4 - \dfrac{1}{x^3} \right)^{15}$ is

$$T_{r+1} = {}^{15}C_r \left(X^4\right)^{15-r} \left(-\dfrac{1}{x^3}\right)^r = {}^{15}C_r X^{60-7r}(-1)^r$$

If x^{39} occurs in T_{r+1}, then $60 - 7r = 39$

$\Rightarrow \quad r = 3$

So, coefficient of $x^{39} = {}^{15}C_3[-1]^3 = -455$

Correct Options

Answer:01
Correct Options: D