

Binomial Theorem - Class XI

Past Year JEE Questions

Questions

Question: 01

If the sum of the coefficients in the expansion of $(x + y)^n$ is 4096, then the greatest coefficient in the expansion is _____.

Solutions

Solution: 01

Answer

Correct Answer is **924**

Explanation

$$(x + y)^n \Rightarrow 2^n = 4096$$

$$2^{10} = 1024 \times 2$$

$$\Rightarrow 2^n = 2^{12}$$

$$2^{11} = 2048$$

$$n = 12$$

$$2^{12} = 4096$$

$${}^{12}C_6 = \frac{12 \times 11 \times 10 \times 9 \times 8 \times 7}{6 \times 5 \times 4 \times 3 \times 2 \times 1}$$

$$= 11 \times 3 \times 4 \times 7$$

$$= 924$$