



DSSSB + SSC MTS

DSSSB PRT, TGT & PGT



दफ्तरी बैच

Part(A+B)

SCHOLAR BATCH

MATHS

Number Of Factors

(गुणनखण्डों की संख्या)

02



LIVE 27-03-2024 08:00 AM

$$100 \rightarrow 2^2 \times 5^2$$

1, 2, 4, 5, 10, 20, 25, 50, 100

✓ Total $\Rightarrow (2+1) \times (2+1) \Rightarrow 9$

✓ Even factor $\rightarrow 2 \times (2+1) \Rightarrow 6$

✓ Odd factor $\rightarrow (2+1) \Rightarrow 3$

No. of perfect square factor $\rightarrow 4$

पूर्ण वर्ग गुणनखण्ड $\rightarrow 1, 4, 25, 100$

No. of prime factor $\rightarrow 1+1 \Rightarrow 2$ (2, 5)
अभाज्य गुणनखण्ड $\rightarrow$

$$2^2 \times 5^2$$

$$\begin{array}{l} 1 \\ 2^0 \\ 2^1 \\ 2^2 \end{array} \quad \begin{array}{l} 5^0 \\ 5^1 \\ 5^2 \end{array}$$

$$\frac{4}{2} \times \frac{3}{2} \Rightarrow 4$$

1000 $\rightarrow$ 1, 2, 4, 5, 8, 10, 20, 25, 40, 50, 100, 200, 250, 500, 1000

$\rightarrow$ Total $\rightarrow (3+1) \times (3+1) \Rightarrow 16$

$\rightarrow$ Even $\rightarrow 3 \times (3+1) \Rightarrow 12$

$\rightarrow$ Odd $\rightarrow (3+1) \Rightarrow 4$

$\rightarrow$ Prime factor $\rightarrow 1+1 \Rightarrow 2$
 अभाज्य गुणनखण्ड

$\rightarrow$ No. of perfect square $\Rightarrow 4$ (1, 4, 25, 100)
 पूर्ण वर्ग गुणनखण्ड

$\rightarrow$ No. of perfect cube $\Rightarrow 4$ (1, 8, 125, 1000)
 पूर्ण घन गुणनखण्ड

125

$1^2 \Rightarrow 1$
 $1^3 \Rightarrow 1$

$\frac{2^3}{2^0} \times \frac{5^3}{5^0}$
 $\frac{2^3}{2} \times \frac{5^3}{5} \Rightarrow 4$

$$1500 \rightarrow 2^2 \times 3^1 \times 5^3$$

$$24 \checkmark \text{ Total} \rightarrow (2+1)(1+1)(3+1) \Rightarrow 24$$

$$16 \text{ Even} \rightarrow 2 \times (1+1)(3+1) \Rightarrow 16$$

$$8 \text{ Odd} \rightarrow (1+1)(3+1) \Rightarrow 8$$

$$3 \text{ prime} \rightarrow 3$$

$$4 \text{ perfect square} \rightarrow 4$$

$$2 \text{ perfect cube} \rightarrow 2$$

$$\begin{aligned} 1500 &\rightarrow 15 \times 100 \\ &\rightarrow 3 \times 5 \times 2^2 \times 5^2 \\ &\Rightarrow 2^2 \times 3 \times 5^3 \\ &\quad \begin{array}{ccc} 2^0 & 3^0 & 5^0 \\ \hline 1 & \times 1 & \times 125 \end{array} \end{aligned}$$

$$2^9 \times 7^2 \times 3^6 \times 5^5 \quad 2^0 \Rightarrow (1)$$

$$\text{Total} \rightarrow (9+1)(2+1)(6+1)(5+1) \Rightarrow 1260$$

$$\text{Even} \rightarrow 9 \times (2+1)(6+1)(5+1) \Rightarrow 1134$$

$$\text{Odd} \rightarrow (2+1)(6+1)(5+1) \Rightarrow 126$$

$$\text{prime} \rightarrow 4$$

$$\text{perfect square} \rightarrow 5 \times 2 \times 4 \times 3 \Rightarrow 120$$

$$\text{perfect cube} \rightarrow 4 \times 1 \times 3 \times 2 \Rightarrow 24$$

$$2^7$$

$$2^8$$

$$2^9$$

$$2^9 \times 7^2 \times 3^6 \times 5^5$$

2^0	7^0	3^0	5^0
2^1	7^1	3^1	5^1
2^2	7^2	3^2	5^2
2^3	7^3	3^3	5^3
2^4	7^4	3^4	5^4
2^5	7^5	3^5	5^5
2^6	7^6	3^6	5^6

$$3600 \rightarrow 2^4 \times 3^2 \times 5^2$$

$$\text{Total} \rightarrow (4+1)(2+1)(2+1) \Rightarrow 45 \quad \checkmark$$

$$\text{Even} \rightarrow 4 \times (2+1)(2+1) \Rightarrow 36 \quad \checkmark$$

$$\text{Odd} \rightarrow (2+1)(2+1) \Rightarrow 9 \quad \checkmark$$

$$\text{prime} \rightarrow 3 \quad \checkmark$$

$$\text{perfect square} \rightarrow 3 \times 2 \times 2 \Rightarrow 12 \quad \checkmark$$

$$\text{perfect cube} \rightarrow 2 \times 1 \times 1 \Rightarrow 2 \quad \checkmark$$

$$3600 \Rightarrow 36 \times 100$$

$$\Rightarrow 2^2 \times 3^2 \times 2^2 \times 5^2$$

$$\Rightarrow 2^4 \times 3^2 \times 5^2$$

$$\begin{array}{ccc} \checkmark 2^0 & \checkmark 3^0 & \checkmark 5^0 \\ \checkmark 2^1 & \checkmark 3^1 & \checkmark 5^1 \\ \checkmark 2^2 & \checkmark 3^2 & \checkmark 5^2 \\ \checkmark 2^3 & & \\ \checkmark 2^4 & & \end{array}$$

1080 →

Total → $(3+1)(3+1)(1+1) \Rightarrow 32$

Even → $3(3+1)(1+1) \Rightarrow 24$

Odd → $(3+1)(1+1) \Rightarrow 8$

prime → 3

perfect Square → 4

perfect Cube → 4

1080 → 108 × 10

$54 \times 2 \times 2 \times 5$

$27 \times 2 \times 2 \times 2 \times 5$

$2^3 \times 3^3 \times 5^1$

$2^0 \quad 3^0 \quad 5^0$

$2^1 \quad 3^1 \quad 5^1$

$2^2 \quad 3^2 \quad 5^2$

$2^3 \quad 3^3 \quad 5^3$

$2 \times 2 \times 1$

100 के सभी सम गुणनखण्डों का योग = ?

$100 \rightarrow 2^2 \times 5^2$

$\Rightarrow (2^1 + 2^2)(5^0 + 5^1 + 5^2)$

$(2 + 4)(1 + 5 + 25)$

6×31

186

$$\begin{array}{r} 2 \\ 4 \\ 10 \\ 20 \\ 50 \\ 100 \\ \hline 186 \end{array}$$

600 के सभी सम गुणनखण्डों की संख्या = ?

$$600 \rightarrow 6 \times 100$$

$$\Rightarrow 2^1 \times 3 \times 2^2 \times 5^2$$

$$\Rightarrow 2^3 \times 3^1 \times 5^2$$

$$\Rightarrow (2^0 + 2^1 + 2^2 + 2^3) \times (3^0 + 3^1) \times (5^0 + 5^1 + 5^2)$$

$$(1 + 2 + 4 + 8) \times (1 + 3) \times (1 + 5 + 25)$$

$$14 \times 4 \times 31 = 14 \times 124$$

$$= 1736$$

5

600
300
200
150
120
100
75
50
25

600
300
200
150
120
100

$$\{(500)^2 \Rightarrow 1000 \text{ Hold}\}$$