



DELHI POLICE 2025
CONSTABLE HCM AWO/TPO DRIVER

यकीन बैच

MATHS



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Number System

(संख्या पद्धति)

Part -13



LIVE
STREAMING

31-01-2025 11:00 AM

$$\boxed{2 \times 5} \approx$$



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Number of Zeros

$$1 \times 2 \times 3 \times 4 \times 5 = 120$$

$$\begin{array}{r} 2 - 3 \\ 5 - 1 \end{array} \textcircled{1}$$

factorial
क्रमगुणित $\therefore 1 \times 2 \times 3 \times 4 \times 5 \times 6 = \textcircled{6!}$

$$8! = 1 \times 2 \times 3 \times 4 \times \dots \times 8$$

$$15! = 1 \times 2 \times 3 \times 4 \times \dots \times 15$$

$$1 \times 2 \times 3 \times 4 \times \dots \times 100 = 100!$$

$$\begin{array}{r} 100 \\ 5 \\ 20 \\ 4 \end{array}$$

24 zeroes

$$\textcircled{24} \rightarrow \textcircled{24}$$

$$2 \rightarrow \textcircled{97}$$

~~$$\begin{array}{r} 100 \\ 5 \\ 20 \\ 4 \\ 12 \\ 6 \\ 3 \end{array}$$~~

$$1 \times 2 \times 3 \times 4 \text{ ————— } 300$$

or

300!

300	60
4	12
8	2
12	
4	
	74

$$\underline{1 \times 2 \times 3 \text{ ————— } 7.8 \text{ or } 78!}$$

$$\begin{array}{r} 78 \\ 2 \overline{) 78} \\ \underline{4} \\ 48 \\ \underline{48} \\ 0 \end{array}$$

$$\begin{array}{r} 15 \\ 3 \overline{) 15} \\ \underline{9} \\ 6 \\ \underline{6} \\ 0 \end{array}$$

40 zeroes:

$$24 \times 25 \times 26 \times 27 \text{ --- } \begin{array}{r} \cancel{182} \cdot 36 \\ \underline{5} \\ 36 \\ \underline{5} \\ 7 \\ \underline{5} \end{array} \quad \begin{array}{r} 7 \\ \underline{1} \\ 44-4 \end{array}$$

①

$$\underline{1 \times 2 \times 3 \times 4 \dots 980 \text{ or } 980!}$$

$$\begin{array}{r} 980 \\ 5 \overline{) 196} \\ \underline{196} \\ 39 \\ 5 \overline{) 39} \\ \underline{35} \\ 4 \\ 5 \overline{) 4} \\ \underline{4} \\ 0 \end{array}$$

②

zeros

$$\underline{1 \times 2 \times 3 \times \dots 36 \times 37 \times 38 \times 39 \dots 837}$$

$$\begin{array}{r} 367 \\ 8 \overline{) 367} \\ \underline{32} \\ 47 \\ 8 \overline{) 47} \\ \underline{40} \\ 7 \end{array}$$

$$\begin{array}{r} 837 \\ 5 \overline{) 837} \\ \underline{418} \\ 419 \\ 5 \overline{) 419} \\ \underline{400} \\ 19 \\ 5 \overline{) 19} \\ \underline{15} \\ 4 \end{array}$$

③

$$\begin{array}{r} 1024 \\ 8 \overline{) 1024} \\ \underline{8} \\ 204 \\ 8 \overline{) 204} \\ \underline{16} \\ 40 \\ 8 \overline{) 40} \\ \underline{32} \\ 8 \\ 8 \overline{) 8} \\ \underline{8} \\ 0 \end{array}$$

$$1024!$$

$$\begin{array}{r} 207 \\ 8 \overline{) 207} \\ \underline{16} \\ 47 \\ 8 \overline{) 47} \\ \underline{40} \\ 7 \end{array}$$

$$207 - 8 = 199$$

$$\Rightarrow \begin{array}{c} \downarrow \downarrow \downarrow \downarrow \\ 2 \times 4 \times 6 \times 8 \\ \hline 2^4 [1 \times 2 \times 3 \times 4] = 16 \times 24 \\ = \boxed{384} \end{array}$$

$$\Rightarrow \begin{array}{c} 2+4+6+8 \\ \hline 2[1+2+3+4] = \\ \boxed{20} \end{array}$$

$$\Rightarrow 5 \times 10 \times 15 \times 20 \text{ ————— } 215$$

$$\underline{5} \cdot \underline{43} [1 \times 2 \times 3 \times 4 \text{ ————— } 43]$$

$\underline{43} 21$	$\underline{43} \quad 8$	$5 \quad 52$
$\underline{2}$	$\underline{4} \quad 1$	$2 - 39$
$\underline{21} 10$	$\underline{40} \quad 9$	$\textcircled{39}$
$\underline{2}$		$\textcircled{39}$
$\underline{10} 5$		
$\underline{2}$		
$\underline{5} 2$		
$\underline{2}$		
$\underline{2} \quad 1$		
$\underline{1} \quad 39$		

$$\# \quad 10 \times 20 \times 30 \times 40 \text{ ————— } 910$$

$$\leftarrow \underline{10^{91}} \left[\underbrace{1 \times 2 \times 3 \times 4 \text{ ————— } 91} \right]$$

$$\begin{array}{l} 10^1 = 10 \\ 10^2 = 100 \\ 10^3 = 1000 \\ 10^4 = 10000 \end{array}$$

$$\frac{91}{5} = 18$$

$$\frac{18}{5} = \frac{3}{21 + 91}$$

$$= 112$$





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15min
20min

2.5min

93. What will be the number of zeros in $1 \times 2 \times 3 \times 4 \times 5 \times \dots \times 161 \times 162 \times 163$?

$1 \times 2 \times 3 \times 4 \times 5 \times \dots \times 161 \times 162 \times 163$ में शून्यों की संख्या क्या होगी?

- (a) 39
- (b) 40
- (c) 38
- (d) 35