MBA - Pro, 2025

Quantitative Aptitude

Basics of Number System and Series

DPP: 3

Q1 $N = 346 * 72$ (6-digit number) is completely divisible by 3 . The sum of possible natural number in place of $*$ is $=$

(A) 12 (B) 15
(C) 17 (D) 20

Q2 A number $75C285$ is divisible by 9 . Find the difference between maximum and minimum possible value of C.

(A) 5 (B) 7
(C) 9 (D) 11

Q3 The ratio between HCF and LCM of 12, 24 and 36 is :

(A) $\frac{1}{6}$ (B) $\frac{1}{3}$
(C) $\frac{2}{3}$ (D) $\frac{3}{4}$

Q4 Find the sum of cube of first 60 natural numbers?

(A) 2469780 (B) 1830^3
(C) 1830^2 (D) None of these

Q5 What is the HCF of $\frac{7}{16}, \frac{21}{32} \& \frac{35}{64}$?

(A) $\frac{7}{64}$ (B) $\frac{7}{32}$
(C) $\frac{35}{16}$ (D) $\frac{35}{64}$

Q6 What is the LCM of $\frac{12}{95}, \frac{60}{19} \& \frac{30}{57}$?

(A) $\frac{1}{2}$ (B) $\frac{12}{95}$
(C) $\frac{120}{57}$ (D) None of these

Q7 If the LCM of two numbers is 612 and their HCF is 6 and one number is 51 then find the second number ?

(A) 98 (B) 72
(C) 136 (D) 68

Q8 Find the number of factors of 540 .

(A) 24 (B) 36
(C) 42 (D) 48

Q9 Find the number of prime factors of 17017.

(A) 2 (B) 4
(C) 6 (D) 8

Q10 Find the sum of first 50 whole number.

(A) 1105 (B) 1200
(C) 1225 (D) 1250

Q11 Find the value of

$3^2 + 4^2 + 5^2 + \ldots\ldots\ldots\ldots\ldots + 22^2$.

(A) 3540 (B) 3790
(C) 3810 (D) None of these

Q12 If a number 17p6523 is divisible by 11, then find the value of p?

(A) 8 (B) 9
(C) 6 (D) 7

Q13 Find the HCF of P & Q.

if P = $12^3 \times 15^7 \times 7^3$ and Q = $4^8 \times 35^6 \times 27^2$

(A) $30^6 \times 7^{12}$
(B) $2^7 \times 3^6 \times 7^{3^2}$
(C) $30^6 \times 7^3$
(D) None of these

Q14 If the ratio of two numbers is 3:11 and their HCF is 7 then find the largest number?

(A) 28 (B) 56
(C) 21 (D) 77

Q15 Find the value of A+B.
Here, A = Total number of factor of 1728
and B = Number of prime factor of
$17^2 \times 3^5 \times 5^8$
(A) 53 (B) 31
(C) 93 (D) 36

Answer Key

Q1	B
Q2	C
Q3	A
Q4	C
Q5	A
Q6	D
Q7	B
Q8	A
Q9	B
Q10	C
Q11	B
Q12	C
Q13	C
Q14	D
Q15	B

Hints & Solutions

Note: scan the QR code to watch video solution

Q1 Text Solution:

Sum of the digits of N

$$= (3+4+6+*+7+2)$$
$$= 22+*$$

So, * can be $2, 5, 8$

(Sum of digits of a number should be divisible by 3)

Therefore, Sum $= (2+5+8) = 15$

Video Solution:

Q2 Text Solution:

For $75C285$ to be completely divisible by 9 , sum of their digits should be divisible by 9 .

So, $7+5+C+2+8+5 = 27+C$.

So, C can be either 0 or 9 .

Maximum value of $C = 9$

Minimum value of $C = 0$

difference $= 9-0 = 9$

Video Solution:

Q3 Text Solution:

HCF of 12,24 and $36 = 12$

And LCM of 12,24 and $36 = 12 \times 2 \times 3 = 72$

So, $\mathrm{HCF} : \mathrm{LCM}$ = 12 : 72 = 1 : 6

Required ratio = $\frac{1}{6}$ Ans

Video Solution:

Q4 Text Solution:

We knows first 60 natural numbers are-

1,2,3,...............,58,59,60.

required sum of cube of first 60 numbers

$1^3 + 2^3 + 3^3 + \ldots\ldots\ldots\ldots\ldots + 60^3$

n = 60

Sum of cube of n natural numbers =

$\left\{\frac{n(n+1)}{2}\right\}^2$

Sum of cube of 60 natural numbers =

$\left\{\frac{60(60+1)}{2}\right\}^2$

Sum of cube of 60 natural numbers =

$(30*61)^2 = (1830)^2$

Video Solution:

Q5 Text Solution:

in the case of fraction when we find HCF then we took HCF of all numerators and LCM of all the denominators.

HCF of $\frac{7}{16}, \frac{21}{32}$ & $\frac{35}{64}$ =

$$\frac{HCF\ of\ (7,21,35)}{LCM\ of\ (16,32.\ 64)} = \frac{7}{64}\text{Ans}$$

Video Solution:

Q6 Text Solution:

To find the LCM of frations we took HCF of all the numerators and LCM of all the denominators.

So,

LCM of $\frac{12}{95}, \frac{60}{19}$ & $\frac{30}{57}$

Now, $\frac{12}{95}, \frac{60}{19}$ & $\frac{10}{19}$ =

$$\frac{LCM\ of\ 12, 60\ \&\ 10}{HCF\ of\ 95, 19\ \&\ 19} = \frac{60}{19}\text{Ans.}$$

Video Solution:

Q7 Text Solution:

We knows,

HCF * LCM = first number * second number

Second Number =

$$\frac{\text{HCF} \times \text{LCM}}{\text{first number}} = \frac{6 \times 612}{51} = 72\ Ans$$

Video Solution:

Q8 Text Solution:

$$540 = 2^2 \times 3^3 \times 5$$

So, number of factors

$$= (2+1)(3+1)(1+1)$$
$$= (3 \times 4 \times 2) = 24$$

Video Solution:

Q9 Text Solution:

$$17017 = 7 \times 11 \times 13 \times 17$$

So, number of prime factors $= 4$

Video Solution:

Q10 Text Solution:

First 50 whole numbers $= 0, 1, 2, \ldots .49$

Their sum $= \frac{\text{n(n+1)}}{2} = \frac{49 \times (49+1)}{2}$

$$= \frac{49 \times 50}{2}$$
$$= 1225$$

Video Solution:

Q11 Text Solution:

We know that

$$1^2 + 2^2 + 3^2 + \ldots\ldots\ldots\ldots + n^2 = \frac{n(n+1)(2n+1)}{6}$$

Using the same

$$3^2 + 4^2 + 5^2 + \ldots\ldots\ldots + 22^2$$

$$= \left[\frac{22\times(22+1)\times(2\times22+1)}{6} - (1^2 + 2^2)\right]$$

$$= \left(\frac{22\times23\times45}{6} - 5\right)$$

$$= (11 \times 15 \times 23) - 5$$

$$= 3790$$

Video Solution:

Q12 Text Solution:

A number is divisible by 11 if the difference between the sum of digits at odd places and that at even places is zero or divisible by 11.

so,

17p6523,

(7+6+2) - (1+p+5+3) = 0

15 - (9+p) = 0

6 - p = 0

p = 6.

so if we put 6 at the place of p then number will be completely divisible by 11.

Video Solution:

Q13 Text Solution:

P = $12^3 \times 15^7 \times 7^3$

= $(4 \times 3)^3 \times (3 \times 5)^7 \times 7^3$

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

= $2^6 \times 3^{10} \times 5^7 \times 7^3$

Q = $4^8 \times 35^6 \times 27^2$

= $(2^2)^8 \times (5 \times 7)^6 \times (3^3)^2$

= $2^{16} \times 5^6 \times 7^6 \times 3^6$

HCF of P & Q = $2^6 \times 3^6 \times 5^6 \times 7^3$ = $30^6 \times 7^3$

Ans

Video Solution:

Q14 Text Solution:

a:b = 3:11

a = 3k and b = 11k

HCF of 3k and 11k will be = k

and HCF of both numbers is given 7 so,

k = 7

so, a = 3k = 3*7 = 21

and b = 11k = 11*7 = 77

so, largest number is 77 Ans,

Video Solution:

Q15 **Text Solution:**

to find A,

1728 = $2^6 \times 3^3$

A = (6+1)*(3+1) = 7*4 = 28

to find B,

$17^2 \times 3^5 \times 5^8$

B = there are three prime numbers (17, 3 & 5)

so, B = 3

now,

A + B = 28 + 3 = 31 Ans.

Video Solution:

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