MBA PIONEER 2024

QUANTITATIVE APTITUDE

DPP: 01

Number System

Q1 p is a number greater than 3 and divisible only by 1 and p. Then, $[(\mathrm{p}+1)(\mathrm{p}-1)]$ is always divisible by

(A) 36
(B) 24
(C) 48
(D) Can't be determined

Q2 Find the value of below expression : $\sum_{n=7}^{31}(n+2)$ if n is not divisible by lowest possible prime number.

(A) 273 (B) 257
(C) 247 (D) 243

Q3 Product of t (where $2 \leq \mathrm{t} \leq 100$) distinct positive integers result in an even number. Suppose k is the maximum possible number of even numbers taken to get the result an even number, whereas m is the maximum possible number of odd numbers to get the product an even number. Find the value of $(\mathrm{m}+\mathrm{k})$.

(A) 100 (B) 175
(C) 187 (D) 199

Q4 Which among the following is least?

$$\frac{17}{155}, \frac{41}{217}, \frac{7}{62}, \frac{53}{341}$$

(A) $\frac{17}{155}$
(B) $\frac{41}{217}$
(C) $\frac{7}{62}$
(D) $\frac{53}{341}$

Q5 Find the sum of the below mentioned series till 18^{th} term.

$$3^2-4^2+5^2-6^2+\ldots\ldots\ldots$$

(A) 107 (B) 207
(C) -207 (D) -107

Q6 $\frac{1}{5}$ th of bucket A capacity is lesser than $\frac{1}{2}$ of bucket B capacity by 8 litres. If total capacity of both the buckets is 72 litres, then find the capacity of bucket A (in litres)?

(A) 32 (B) 40
(C) 24 (D) 48

Q7 $\frac{1}{4}$ th of a number N is 36. N is $\frac{1}{5}$ th of a number Z. What is the value of $\frac{7}{10}$ th of Z ?

(A) 252 (B) 392
(C) 504 (D) 616

Q8 A six-digit number $6p966q$ is divisible by 11 . Then, the value of $(p+q)$ is :

(A) 0 (B) 4
(C) 15 (D) Both b and c

Q9 What is the value of $(k-r)$ if

$$3^3+4^3+5^3+\ldots\ldots+\mathrm{n}^3 = \frac{\mathrm{n}^4+\mathrm{n}^2+\mathrm{kn}^3-\mathrm{r}}{4} \ ?$$

(A) -4 (B) -7
(C) -9 (D) -11

Q10 Find the difference between the number of numbers from 1 to 100 , which are divisible by 2,3 and 4 and which are not divisible by 2, 3 and 4

(A) 72 (B) 76
(C) 80 (D) 84

Q11 Let p is a prime number. Find the sum of value of all such p if $\left(\mathrm{p}^3-1\right)$ result in a prime number.
(A) 0 (B) 2
(C) 7 (D) ∞

Q12
$$\frac{7+9+11+\ldots\ldots+1987}{997}=x$$
Find x.
(A) 994 (B) 997
(C) 991 (D) 983

Q13 Which among the following fractions is the greatest?
$\frac{3}{7}, \frac{7}{11}, \frac{43}{47}, \frac{67}{71}$
(A) $\frac{3}{7}$
(B) $\frac{7}{11}$
(C) $\frac{43}{47}$
(D) $\frac{67}{71}$

Q14 K is a natural number from which 2 is subtracted. L is a number reciprocal of above result. Which of the following options can always be correct?
(A) $-1 \leq (\mathrm{K}-2)^{\mathrm{L}} \leq \sqrt{2}$
(B) $-2 \leq (\mathrm{K}-2)^{\mathrm{L}} \leq 2$
(C) $-1 \leq (\mathrm{K}-2)^{\mathrm{L}} \leq \sqrt{3}$
(D) $-1 \leq (\mathrm{K}-2)^{\mathrm{L}} \leq 2$

Q15 3 Mangoes, 2 Pineapple and 4 Papaya costs Rs. 468 whereas 4 Mangoes, 5 Pineapple and 3 Papaya costs Rs. 554. What is the cost of single piece of all?
(A) Rs. 148 (B) Rs. 147
(C) Rs. 146 (D) Rs. 145

Q16 $\left(a^4-a^3+a^2-1\right)\left(b^2-b-3\right)=K$. If $a, b \in N$ and a, b any odd number, then $K \in$ (Given $K \in Z^+$)
(A) Odd number
(B) Even number
(C) Either odd or even
(D) Can't be determined

Q17 $\frac{x^2}{3136}$ is an integer. What can be the minimum value of x, to fulfill this condition?
(A) 42 (B) 48
(C) 52 (D) 56

Q18 Aman while trying to find $\frac{6}{7}$ th of a number, mistakenly found $\frac{7}{6}$ th of the number. Later he realized that the difference between his answer and the correct answer is 104. Find the number on which he was working.
(A) 168 (B) 252
(C) 336 (D) 462

Q19 a is a number such that $a \in Z^+$. Reciprocal of a and a is added to get K. What is the sum of minimum and maximum possible values of K ?
(A) 0 (B) 1
(C) 2 (D) ∞

Q20 Let $\mathrm{M}=\left(\frac{-5}{6}\right)^3, \mathrm{N}=\left(\frac{-2}{3}\right)^2, \mathrm{O}=(0.5)^2$ and $\mathrm{P}=(-1.6)^2$, then what is the relationship between them?
(A) $\mathrm{P}>\mathrm{O}>\mathrm{N}>\mathrm{M}$
(B) $\mathrm{O}>\mathrm{N}>\mathrm{P}>\mathrm{M}$
(C) $\mathrm{P}>\mathrm{N}>\mathrm{O}>\mathrm{M}$
(D) $\mathrm{N}>\mathrm{P}>\mathrm{O}>\mathrm{M}$

Q21 $6^{12}+6^{14}+6^{16}+6^{18}$ is divisible by which one among the given?
(A) 41 (B) 37
(C) 1297 (D) Both b and c

Q22

Let P be the sum of cubes of first Q natural numbers. IF $Q < 40$ and P is divisible by 5 , then find the sum of all possible values of Q

(A) 300 (B) 312
(C) 200 (D) 212

Q23 Milan gave PMAT exam, in which for each correct question 3 marks is awarded and for each wrong 1 mark is deducted. If 0 marks is awarded for no attempt, then find the total number of question in PMAT exam such that he get 44 marks and number of attempt/no attempt for receiving each type of marks is equal.

(A) 52 (B) 57
(C) 60 (D) 66

Q24 $(P+N+W)^Z = 6561$ such that p is the least prime number, N is least natural number and W is least whole number. Find $\frac{\mathrm{Z}}{\mathrm{N+W}}$.

(A) 4 (B) 8
(C) 10 (D) 12

Q25 Find the sum of following.

$$5+10+17+26+\ldots\ldots+901$$

(A) 8483 (B) 9483
(C) 10483 (D) None of these

Q26 A number is written in such a way that it's first digit from left side is 1 , then 2 , then 3 and so on till 200. For ex. : $1234\ldots\ldots200$. Find the number of digits in this number.

(A) 312 (B) 412
(C) 492 (D) 592

Q27 M and K are two prime numbers where $\mathrm{M} > \mathrm{K}$. (M $-K$) is also a prime number and $M < 10$. Find the number of possible integral values of $\frac{M+K}{M-K}$.

(A) 2
(B) 3
(C) 4
(D) Inadequate data

Q28 If $a^3+3b^2-2a+7b=A$ positive even number, and $\mathrm{b} > 0$, then a and b are respectively.

(A) Odd, Even
(B) Even, Odd
(C) Odd, Odd
(D) None of these

Q29 Sum of reciprocals of two integers is $\frac{12}{35}$ and their product is 35 . Find the larger integer of these two

(A) 4 (B) 5
(C) 7 (D) 8

Q30 $3K+24$ is perfectly divisible by K. Find the sum of all such K if $K \in Z^+$.

(A) 60 (B) 36
(C) 24 (D) 16

Answer Key

Q1	(B)
Q2	(A)
Q3	(D)
Q4	(A)
Q5	(C)
Q6	(B)
Q7	(C)
Q8	(D)
Q9	(B)
Q10	(D)
Q11	(B)
Q12	(C)
Q13	(D)
Q14	(A)
Q15	(C)
Q16	(B)
Q17	(D)
Q18	(C)
Q19	(D)
Q20	(C)
Q21	(D)
Q22	(B)
Q23	(D)
Q24	(B)
Q25	(B)
Q26	(C)
Q27	(A)
Q28	(B)
Q29	(C)
Q30	(A)

Hints & Solutions

Q1 Text Solution:

p is divisible only by 1 and p.

This implies, p is a prime number.

Also, $\mathrm{p} > 3$

So, Prime number > 3

$$= 5, 7, 11, 13, 17, 19 \ldots.$$

Let's take $\mathrm{p} = 5$,

then $(5+1)(5-1) = 24$

Now if $\mathrm{p} = 7$,

then $(7+1)(7-1) = 48$

Again if $\mathrm{p} = 11$,

then $(11+1)(11-1) = 120$

and so on.

We can see a clear pattern, that

$24, 48, 120, \ldots..$ are divisible by 24 .

Ans. b

Q2 Text Solution:

Lowest possible prime number $= 2$ or n is not divisible by 2

So, n is an odd number, such that $7 \leq \mathrm{n} \leq 31$.

$$\begin{aligned}
&\text{So, } \textstyle\sum_{n=7}^{31}(\mathrm{n}+2) \\
&= [(7+2)+(9+2)+(11+2)+\ldots.. \\
&\qquad +(31+2)] \\
&= (9+11+13+\ldots\ldots+33) \\
&= (1+3+5+7+9+11+13+\ldots.+33) \\
&\qquad -(1+3+5+7) \\
&= \left(17^2-4^2\right)
\end{aligned}$$

(Sum of first n odd natural numbers $= \mathrm{n}^2$)

$= 273$

Ans. a

Q3 Text Solution:

To get the maximum possible number of even or odd numbers that can be taken, let's take $\mathrm{t} = 100$

Case 1 -Maximum number of even numbers.

If we take all the numbers distinct even numbers, for ex. $\rightarrow 2 \times 4 \times 6 \times 8 \times \ldots \times 200$.

$=$ An even number

The product we get is an even number.

So, maximum number $= 100 = \mathrm{k}$

Case 2 - Maximum number of odd numbers.

If we take 99 distinct odd numbers and 1 even number, we still get the product an even number.

For ex. $\rightarrow (1 \times 3 \times 5 \times 7 \times \ldots.197) \times 2$

So, maximum number $= 99 = \mathrm{m}$

Therefore, $(\mathrm{m}+\mathrm{k}) = 100 + 99 = 199$

Ans. d

Q4 Text Solution:

Let's make the denominator equal in each case.

LCM of $(155, 217, 62, 341)-$

$$\begin{aligned}
\mathrm{LCM} &= (31 \times 5 \times 7 \times 2 \times 11) \\
&= 23870
\end{aligned}$$

Now, $\frac{17}{155} = \frac{17\times154}{155\times154} = \frac{2618}{23870}$,

$\frac{41}{217} = \frac{41\times110}{217\times110} = \frac{4510}{23870}$,

$\frac{7}{62} = \frac{7\times385}{62\times385} = \frac{2695}{23870}$,

and $\frac{53}{341} = \frac{53\times70}{341\times70} = \frac{3710}{23870}$

Clearly, numerator of $\frac{17}{155}$ is the least among the given fractions.

So, Ans. a

Q5 Text Solution:

Let $S^{18} = 3^2 - 4^2 + 5^2 - 6^2 + \ldots\ldots\ldots$

or

S^{18}

$= (1^2 - 2^2 + 3^2 - 4^2 + 5^2 - 6^2 + \ldots\ldots\ldots)$

$- (1^2 -$

2^2)

(For $1^2 - 2^2 + 3^2 - 4^2 + \ldots\ldots$, Sum $= \frac{-n(n+1)}{2}$ if n is even)

Here, $n = (18 + 2)$,

or $S_{18} = \left[\frac{-20\times(20+1)}{2}\right] + 3$

$= (-10 \times 21) + 3$

$= -207$

Ans. c

Q6 Text Solution:

Let, the capacity of bucket B = y litres

Then, bucket A capacity $= (72 - y)$ litres Now, according to the question :

$$\frac{1}{2}y - \frac{1}{5}(72 - y) = 8$$
$$\Rightarrow \frac{y}{2} - \frac{72}{5} + \frac{y}{5} = 8$$
$$\Rightarrow \frac{5y+2y}{10} = 8 + \frac{72}{5}$$
$$\Rightarrow \frac{7y}{10} = \frac{112}{5}$$
$$\Rightarrow y = (2 \times 16) = 32$$

This means, capacity of bucket $B = 32$ litres

and hence capacity of bucket

$A = (72 - 32) = 40$ litres.

Ans. b

Q7 Text Solution:

Given, $N = \left(\frac{1}{5} \times Z\right) = \frac{Z}{5}$

And $\frac{1}{4}$ of $\frac{Z}{5} = 36$

$$\Rightarrow Z = (36 \times 20) = 720$$
$$\text{So, } \frac{7}{10} \times 720 = (7 \times 72)$$
$$= 504$$

Ans. c

Q8 Text Solution:

For numbers to be divisible by 11 , (Odd places sum) - (Even places sum) Should be divisible by 11 or here, $(6 + 9 + 6) - (p + 6 + q)$

$$= 21 - 6 - (p + q)$$
$$= 15 - (p + q)$$

Either $p + q = 15$ or $p + q = 4$ if result is ≥ 0.

Both option b and c satisfy.

Ans, d

Q9 Text Solution:

$$\text{Let } S_n = 3^3 + 4^3 + 5^3 + \ldots\ldots + n^3$$
$$= (1^3 + 2^3 + 3^3 + 4^3 + \ldots\ldots + n^3) - (1^3 + 2^3)$$
$$= \left[\frac{n(n+1)}{2}\right]^2 - 9$$
$$= \frac{(n^2+n)^2}{4} - 9$$
$$= \frac{n^4 + n^2 + 2n^3 - 9}{4}$$

So, $k = 2$ and $r = 9$ or

$(k - r) = (2 - 9) = -7$

Ans. b

Q10 Text Solution:

Number of numbers divisible by 2,3 and 4 is of the form $12\,K$, where $K \in Z^+$

Such numbers from 1 to 100 $= 12, 24$,36,48,60,72,84, 96

Number of such numbers $= 8$

Now, $100 - 8 = 92$ numbers are not divisible by 2 , 3 and 4 at the same time.

Therefore, difference $= (92 - 8) = 84$

Ans. d

Q11 Text Solution:

Given, p = prime number

For $\mathrm{p}^3 - 1$ to be a prime number, $\mathrm{p}^3 - 1$ must be an odd number.

This is only possible, when p^3 is an even number.

At $\mathrm{p} = 2$ only, p^3 becomes an even number.

Therefore, sum of all such values $= 2$

Ans. b

Q12 Text Solution:

Let's first take the numerator part

$$\begin{aligned}&\text{Say } \mathrm{S_n} = 7 + 9 + 11 + \ldots\ldots + 1987\\&= (1 + 3 + 5 + 7 + 9 + \ldots\ldots + 1987)\\&\qquad - (1 + 3 + 5)\\&= (994)^2 - 9\\&= (994)^2 - (3)^2\\&= (994 + 3)(994 - 3)\\&= (997 \times 991)\end{aligned}$$

$$\text{So, } \frac{\mathrm{S_n}}{997} = \frac{997 \times 991}{997} = 991$$

$$\text{or } \mathrm{x} = 991$$

Ans. c

Q13 Text Solution:

LCM of $7, 11, 47$ and 71

$$7 \times 11 \times 47 \times 71 = 256949$$

So, $\frac{3}{7} = \frac{3 \times 36707}{7 \times 36707} = \frac{110121}{256949}$,

$$\frac{7}{11} = \frac{7 \times 23359}{11 \times 23359} = \frac{16573}{256949},$$

$$\frac{43}{47} = \frac{43 \times 5467}{47 \times 5467} = \frac{235081}{256949},$$

$$\text{and } \frac{67}{71} = \frac{67 \times 3619}{71 \times 3619} = \frac{242473}{256949}$$

Clearly numerator of last one is the largest.

So, Ans. d

Q14 Text Solution:

Given, $K - 2$ and

$$\frac{1}{\mathrm{K} - 2} = \mathrm{L}$$

If $K > 2$, then $(K - 2)^{\mathrm{L}}$ can be $\leq \sqrt{2}$

Ex. $\mathrm{K} = 3, (\mathrm{K} - 2)^{\mathrm{L}}$

$$= 1^1 = 1,$$

$$K = 4, (K - 2)^{\mathrm{L}} = 2^{\frac{1}{2}} = \sqrt{2}$$

$$\mathrm{K} = 5, (\mathrm{K} - 2)^{\mathrm{L}} = 3^{\frac{1}{3}} = \sqrt[3]{3},$$

and the value will keep decreasing.

If $\mathrm{K} = 1$, then $(\mathrm{K} - 2)^{\mathrm{L}} = (-1)^{\frac{1}{-1}}$

$$= (-1)^{-1}$$

$$= \frac{-1}{1} = -1$$

Option a satisfy.

Ans. a

Q15 Text Solution:

Say, price of each piece of mangoes, pineapple and papaya are M, P and K.

So, according to the question,

$$3\mathrm{M} + 2\mathrm{P} + 4\,\mathrm{K} = 468$$

and $4\mathrm{M} + 5\mathrm{P} + 3\,\mathrm{K} = 554$

Adding (i) and (ii), we get

$$7\mathrm{M} + 7\mathrm{P} + 7\,\mathrm{K} = 1022$$

or $\mathrm{M} + \mathrm{P} + \mathrm{K} = 146$

Ans. c

Q16 Text Solution:

As, a and b, both are odd numbers.

$$\text{So, } a^4 - a^3 + a^2 - 1$$
$$\text{Odd number} \rightarrow O$$
$$\text{Even number} \rightarrow E$$
$$= (O)^4 - (O)^3 + (O)^2 - O$$
$$= O - O + O - O$$
$$= E + E$$
$$= E$$
$$\text{and } b^2 + b - 3$$
$$= (O)^2 + (O) - 3$$
$$= O + O - O$$
$$= E - O$$
$$= O$$

Now, $(O \times E) = E$

Ans. b

Q17 Text Solution:

For $\frac{x^2}{3136}$ to be an integer,

$x^2 \geq 3136$

2	3136
2	1568
7	784
7	112
2	16
2	8
2	4
	2

As, $3136 = 2^6 \times 7^2$

So it is a perfect square

or $x \geq \sqrt{2^6 \times 7^2}$

or $x \geq 56$

Ans. d

Q18 Text Solution:

Let the number be N

So, according to the question,

$$\frac{7}{6}N - \frac{6}{7}N = 104$$
$$\Rightarrow \frac{49N - 36N}{42} = 104$$
$$\Rightarrow 13N = (104 \times 42)$$
$$\Rightarrow N = 336$$

Ans. c

Q19 Text Solution:

and $a + \frac{1}{a} = K$

We know that if $a \in Z^+$,

then $a + \frac{1}{a} \geq 2$

So, minimum value of $K = 2$

and maximum value of $K = \infty$

As, if $a = \infty$,

then $\infty + \frac{1}{\infty} = \infty$

Therefore, $2 + \infty = \infty$

Ans. d

Q20 Text Solution:

$$M = \left(\frac{-5}{6}\right)^3 = \frac{-125}{216} \approx -0.57$$
$$N = \left(\frac{-2}{3}\right)^2 = \frac{4}{9} \approx 0.44$$
$$O = (0.5)^2 = \left(\frac{1}{2}\right)^2 = \frac{1}{4} = 0.25, \text{ and}$$
$$P = (-1.6)^2 = \left(\frac{-8}{5}\right)^2 = \frac{64}{25} = 2.56$$

Clearly, we can see that

$$P > N > O > M$$

Q21 Text Solution:

$6^{12} + 6^{14} + 6^{16} + 6^{18}$
$= 6^{12}(1 + 6^2 + 6^4 + 6^6)$
$= 6^{12}(1 + 36 + 1296 + 46656)$
$= 6^{12}(47989)$
$= 6^{12} \times (37 \times 1297)$
So, it is divisible by both 37 and 1297.
Ans. d

Q22 Text Solution:

Given,
$P = 1^3 + 2^3 + 3^3 + \ldots\ldots Q^3$ such that $Q < 40$

or $P = \left[\frac{Q(Q+1)}{2}\right]^2$

For P to be divisible by 5, either Q is divisible by 5 or Q + 1 is divisible by 5.
So, Q can be 4, 5, 9, 10, 14, 15, 19, 20, 24, 25, 29, 30, 34, 35, 39.

Therefore, $\Sigma Q = 312$
Ans. b

Q23 Text Solution:

Let the total number of questions in PMAT exam is x.
As there was equal bifurcation in each type $\rightarrow$ 0 type/ -1 type/+3 type
So, each type $= \frac{x}{3}$
According to the question,

$$0\left(\frac{x}{3}\right) + 3\left(\frac{x}{3}\right) - 1\left(\frac{x}{3}\right) = 44$$
$$\Rightarrow x - \frac{x}{3} = 44$$
$$\Rightarrow \frac{2x}{3} = 44$$
$$\Rightarrow x = 66$$

Ans. d

Q24 Text Solution:

$P = 2$ (Least prime number),
$N = 1$ (Least natural number)
and $W = 0$ (Least whole number)
So, $(2 + 1 + 0)^Z = 6561$
or $3^Z = 6561$
At $Z = 8$, above equation satisfy
So, $\frac{Z}{N+W} = \frac{8}{1+0} = 8$
Ans. b

Q25 Text Solution:

Let

$$S = 5 + 10 + 17 + 26 + \ldots\ldots + 901$$
$$\Rightarrow S = (4 + 1) + (9 + 1) + (16 + 1) + (25 + 1) + \ldots\ldots (900 + 1)$$
$$\Rightarrow S = (2^2 + 1) + (3^2 + 1) + (4^2 + 1) + (5^2 + 1) + (30^2 + 1)$$
$$\Rightarrow S = (2^2 + 3^2 + 4^2 + \ldots. + 30^2) + (1 + 1 + \ldots 29 \text{ times } 1)$$
$$\left(\text{As } 1^2 + 2^2 + 3^2 + n^2 = \frac{n(n+1)(2n+1)}{6}\right)$$
$$\Rightarrow S = \left[\frac{30 \times (30+1)[(2 \times 30)+1]}{6} - 1\right] + 29$$
$$= (5 \times 31 \times 61) + 28$$
$$= 9483$$

Ans. b

Q26 Text Solution:

Number of single digit number = 9 (From 1 to 9)
Number of double digit number = (99 – 10 + 1)
= 90 (From 10 to 99)
Number of triple digit number
= (200 – 100 + 1)
= 101 (From 100 to 200)
Total digits in this number
= (9 × 1) + (90 × 2) + (101 × 3)
= (9 + 180 + 303)
= 492
Ans. c

Q27 Text Solution:

Given, $\mathrm{M} < 10$
So, $\mathrm{M} = 2, 3, 5, 7$
and $\mathrm{K} = 2, 3, 5, 7$ but for $\mathrm{K} = 2, \mathrm{M}$ can't be 2 .
Now,
$\mathrm{M} - \mathrm{K} = (7-5), (5-3), (7-2), (5-2)$
These all are prime numbers.
So, Case $1 \rightarrow \frac{7+5}{7-5} = \frac{12}{2} = 6$ (Integer value),
Case $2 \rightarrow \frac{5+3}{5-3} = \frac{8}{2} = 4$ (Integer value),
Case $3 \rightarrow \frac{7+2}{7-2} = \frac{9}{5}$ (Not an integer value)
and Case $4 \rightarrow \frac{5+2}{5-2} = \frac{7}{3}$ (Not an integer value)
Ans. a

Q28 Text Solution:

Let's go by option,
(a) If a = Odd (O), b = Even (E)
Then, O^3 + 3 × E^2 – (2 × O) + (7 × E)
= O + E – E + E
= O + E + E
= O
Not possible
(b) If a = Even (E) and $b = Odd(O)$.

$$\text{Then, } (\mathrm{E})^3 + 3(\mathrm{O})^2 - (2 \times \mathrm{E}) + (7 \times \mathrm{O})$$
$$= \mathrm{E} + \mathrm{O} - \mathrm{E} + \mathrm{O}$$
$$= \mathrm{O} - \mathrm{E} + \mathrm{O}$$
$$= \mathrm{O} + \mathrm{O}$$
$$= \mathrm{E} \rightarrow \text{ Possible}$$

(c) If $\mathrm{a} = \mathrm{Odd(O)}$ and $\mathrm{b} = \mathrm{Odd(O)}$.

$$\text{then } (\mathrm{O})^3 + 3(\mathrm{O})^2 - (2 \times \mathrm{O}) + (7 \times \mathrm{O})$$
$$= \mathrm{O} + \mathrm{O} - \mathrm{E} + \mathrm{O}$$
$$= \mathrm{E} - \mathrm{E} + \mathrm{O}$$
$$= \mathrm{E} + \mathrm{O}$$
$$= \mathrm{O}$$

Not possible
So, Ans. b

Q29 Text Solution:

Let the two integers are p and n, where $\mathrm{p} > \mathrm{n}$.
Then, $\frac{1}{\mathrm{p}} + \frac{1}{\mathrm{n}} = \frac{12}{35}$
(Given)
or $\frac{(\mathrm{n}+\mathrm{p})}{\mathrm{pn}} = \frac{12}{35}$
Also $\mathrm{p} \times \mathrm{n} = 35$
So, $\mathrm{n} + \mathrm{p} = \frac{12}{35} \times (\mathrm{pn})$

$$= \frac{12}{35} \times 35$$
$$= 12$$

This means, $(n + p) = 12$
At $\mathrm{n} = 5$ and $\mathrm{p} = 7$, both the condition satisfy.
i.e. $5 \times 7 = 35$
Ans. c

Q30 Text Solution:

$$\frac{3\,\mathrm{K} + 24}{\mathrm{K}} = 3 + \frac{24}{\mathrm{K}}$$

As $K \in Z^+$
for 24 to be divisible by K, K can be
$1, 2, 3, 4, 6, 8$, 12 and 24
So, required sum
$= (1 + 2 + 3 + 4 + 6 + 8 + 12 + 24) = 60$
Ans. a