



Quantitative Aptitude

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QUANTITATIVE APTITUDE

PERMUTATIONS AND COMBINATIONS

- Q1** 4P_4 is evaluated as
 (A) 1 (B) 24
 (C) 0 (D) None of these
- Q2** How many 3 digit odd numbers can be formed using the digits 5, 6, 7, 8, 9, if the digits can be repeated?
 (A) 55 (B) 75
 (C) 65 (D) 85
- Q3** ${}^6P_r = 30$, then the value of r is
 (A) 3 (B) 2
 (C) 4 (D) none of these
- Q4** Riya wanted to buy one ball pen, one pencil and one eraser. If a shopkeeper has 10 varieties of ball pens, 6 varieties of pencils and 3 varieties of erasers, then in how many ways can she select these items?
 (A) 100 (B) 180
 (C) 240 (D) None of these
- Q5** There are 4 routes for journey from station X to station Y. In how many different ways can a man go from X to Y and return if for returning any of the route is taken?
 (A) 4 (B) 8
 (C) 16 (D) 24
- Q6** $7!$ is equal to
 (A) 5040 (B) 4050
 (C) 5050 (D) none of these
- Q7** The number ways in which 4 persons can occupy 9 vacant seats is
 (A) 6048 (B) 3024
 (C) 1512 (D) 4536
- Q8** A person can go from place 'A' to 'B' by 11 different modes of transport but is allowed to return back to 'A' by any mode other than the one earlier. The number of different ways, the entire journey can be complete is
 (A) 110 (B) 10^{10}
 (C) 9^5 (D) 10^9
- Q9** The number of parallelogram that can be formed by a set of 6 parallel lines intersected by the another set of 4 parallel lines is _____.
 (A) 360 (B) 90
 (C) 180 (D) 45
- Q10** There are 20 points in a plane area. How many triangles can be formed by these points if 5 points are collinear?
 (A) 550 (B) 560
 (C) 1130 (D) 1140
- Q11** Five bulbs of which three are defective are to be tried in two light-points in a dark room. In how many trails the room shall be lighted?
 (A) 10 (B) 7
 (C) 3 (D) none of these
- Q12** How many 3 digit odd numbers can be formed using the digits 5, 6, 7, 8, 9, if the digits can be repeated?
 (A) 55 (B) 75
 (C) 65 (D) 85
- Q13** Eight chairs are numbered from 1 to 8. Two women and three men are to be seated by allowing one chair for each. First, the women choose the chairs from the chairs numbered 1 to 4 and then men select the chairs from the



remaining. The number of possible arrangement is

- (A) 120 (B) 288
(C) 32 (D) 1440

Q14 In how many ways can 8 boys form a ring ?

- (A) $7! \div 2$ (B) $7!$
(C) $8!$ (D) $8! \div 2$

Q15 In how many ways can the letters of the word "ALGEBRA" be arranged without changing the relative order of the vowels?

- (A) 82
(B) 70
(C) 72
(D) None of these

Q16 Out of 10 consonants and 4 vowels, how many words can be formed each containing 6 consonants and 3 vowels?

- (A) $^{10}C_6 \times ^4C_3$
(B) $^{10}C_6 \times ^4C_3 \times 9!$
(C) $^{10}C_6 \times ^4C_3 \times 10!$
(D) None

Q17 If ${}^nC_{10} = {}^nC_{14}$, then the value of ${}^{25}C_n$ is

- (A) 24 (B) 25
(C) 1 (D) none of these

Q18 The number of arrangements of the word 'COMMERCE' is

- (A) $8!$
(B) $\frac{8!}{2! \times 2! \times 2!}$
(C) $5!$
(D) none of these

Q19 How many words can be formed with the letters of the word 'ORIENTAL' so that all letters are used but the first letter is a vowel?

- (A) 540 (B) 8460
(C) 20160 (D) 24060

Q20 If there are 30 points in a plane of which 5 points lies on the same line. Then the number of triangles can be formed is

- (A) 650 (B) 580
(C) 4050 (D) 4060

Q21 In how many ways can the word 'STRANGE' be arranged so that the vowels are never separated ?

- (A) $6! \times 2!$ (B) $7!$
(C) $7! \div 2!$ (D) None

Q22 3 persons go into a railway carriage having 8 seats. In how many ways can they occupy the seats?

- (A) 8P_3 (B) 8C_3
(C) 8C_5 (D) None

Q23 How many numbers of seven digit numbers which can be formed from the digits 3, 4, 5, 6, 7, 8, 9 no digits being repeated are not divisible by 5?

- (A) 4320 (B) 4690
(C) 3900 (D) 3890

Q24 In how many ways can the letters of the word "DIRECTOR" be arranged so that the three vowels are never together?

- (A) 180 (B) 18,000
(C) 18,002 (D) None of these

Q25 Evaluate $5! - 4!$

- (A) 24 (B) 96
(C) 120 (D) None of these

Q26 Out of 6 boys & 4 girls, find the number of ways for selecting 5 members for a committee in which there are exactly two girls?

- (A) 120 (B) 1440
(C) 720 (D) 71

Q27 If ${}^nP_4 = 12 \times {}^nP_2$, then n is equal to



- (A) -1 (B) 6
(C) 5 (D) none of these
- Q28** If ${}^nP_6 = 20 \times {}^nP_4$ where P denotes number of permutations, then the value of n is
(A) 5 (B) 3
(C) 9 (D) 8
- Q29** A regular polygon has 44 diagonals then the number of sides are
(A) 8 (B) 9
(C) 10 (D) 11
- Q30** Find the number of even numbers greater than 100 that can be formed with the digits 0, 1, 2, 3?
(A) 10 (B) 15
(C) 20 (D) None of these
- Q31** There are 15 boys and 13 girls in a class. The teacher wants to select 1 boy and 1 girl for class representative. In how many ways can the teacher make the selection?
(A) 28 (B) 150
(C) 195 (D) None of these
- Q32** There are two tasks such that it can be completed independently in 4 and 6 ways respectively, then in how many ways either of the two tasks can be completed?
(A) 10 ways (B) 24 ways
(C) 36 ways (D) None of these
- Q33** How many permutations can be formed from the the letters of the word "DRAUGHT", if both vowels may not be separated?
- (A) 720 (B) 1440
(C) 140 (D) 1000
- Q34** Evaluate $\frac{10!}{7!}$
(A) 120 (B) 360
(C) 720 (D) None of these
- Q35** If you have 4 pairs of shoes and 2 pairs of socks, then in how many ways can you wear them?
(A) 2 (B) 4
(C) 8 (D) 16
- Q36** 0! is equal to
(A) 0
(B) 1
(C) infinity
(D) none of these
- Q37** Compute $\frac{7!}{5! \times 2!}$
(A) 21 (B) 60
(C) 120 (D) 5040
- Q38** $\frac{0! \times 5!}{2!}$ is equal to
(A) 0 (B) 60
(C) 120 (D) None of these
- Q39** In how many ways can 6 letters be posted in 5 letter boxes?
(A) 6 (B) 30
(C) 5^6 (D) 6^6
- Q40** Find the value of x for which $\frac{1}{6!} + \frac{1}{7!} = \frac{x}{8!}$.
(A) 4 (B) 8
(C) 16 (D) 64



Answer Key

Q1 (B)
Q2 (B)
Q3 (B)
Q4 (B)
Q5 (C)
Q6 (A)
Q7 (B)
Q8 (A)
Q9 (B)
Q10 (C)
Q11 (B)
Q12 (B)
Q13 (D)
Q14 (B)
Q15 (C)
Q16 (B)
Q17 (B)
Q18 (B)
Q19 (C)
Q20 (C)

Q21 (A)
Q22 (A)
Q23 (A)
Q24 (B)
Q25 (B)
Q26 (A)
Q27 (B)
Q28 (C)
Q29 (D)
Q30 (C)
Q31 (C)
Q32 (A)
Q33 (B)
Q34 (C)
Q35 (C)
Q36 (B)
Q37 (A)
Q38 (B)
Q39 (C)
Q40 (D)



Hints & Solutions

Q1 Text Solution:

We know that,

$${}^nP_r = \frac{n!}{(n-r)!}$$

$$\text{Thus, } {}^4P_4 = \frac{4!}{(4-4)!}$$

$$= \frac{4!}{0!}$$

$$= \frac{4!}{1}$$

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

$$= 24$$

Hence, option (B) is correct.

Q2 Text Solution:

Given digits: 5, 6, 7, 8, 9

⇒ Total digits = 5

To form 3 digit odd number, the unit place can be filled in 3 ways (5, 7, 9).

Since, the digits can be repeated, thus the tens and hundreds place can be filled in 5 ways each.

Therefore, the total required

$$\text{ways} = 5 \times 5 \times 3 = 75.$$

Q3 Text Solution:

$$\text{Given: } {}^6P_r = 30$$

$$\Rightarrow \frac{6!}{(6-r)!} = 30$$

$$\Rightarrow \frac{720}{(6-r)!} = 30$$

$$\Rightarrow \frac{720}{30} = (6-r)!$$

$$\Rightarrow (6-r)! = 24$$

It is possible only when $r = 2$ since

$$(6-r)! = (6-2)! = 4! = 24$$

Q4 Text Solution:

Given,

Number of ball pen = 10

Number of pencils = 6

Number of erasers = 3

Thus, by Fundamental Principle counting of multiplication,

Number of ways of selection of these items

$$= 10 \times 6 \times 3 = 180$$

Hence, the correct option is (B) i.e. 180.

Q5 Text Solution:

Given: Number of routes from station X to station Y = 4

Number of ways a man can go from station X to station Y = 4

Number of ways a man can return from station Y to station X = 4

Thus, by Fundamental Principle counting of multiplication,

Total number of ways from station X to Y and returning back to station X = $4 \times 4 = 16$

Hence, the correct option is (C) i.e. 16.

Q6 Text Solution:

We know that,

$$n! = n \times (n-1) \times (n-2) \times \dots \times 3 \times 2 \times 1$$

Thus,

$$7! = 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 = 5040$$

Hence, option (A) is correct.

Q7 Text Solution:

We know,

The number ways in which 4 persons can occupy 9 vacant seats = 9P_4

$$= \frac{9!}{(9-4)!}$$

$$= \frac{9!}{5!}$$

$$= 9 \times 8 \times 7 \times 6$$

$$= 3024$$

Q8 Text Solution:

Modes of transport while going A to B = 11

Modes of transport while going B to A = 10

Total ways = $11 \times 10 = 110$

Hence, the correct option is (A) i.e. 110.

Q9 Text Solution:

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According to the question,

A set of parallel lines has 2 lines,

Then, The number of parallelogram that can be formed by a set of 6 parallel lines intersected by the another set of 4 parallel lines will be given as,

$$\begin{aligned}
 &= {}^6C_2 \times {}^4C_2 \left[\because nC_r = \frac{n!}{r! \times (n-r)!} \right] \\
 &= \frac{6!}{2! \times 4!} \times \frac{4!}{2! \times 2!} \\
 &= 15 \times 6 \\
 &= 90 \text{ ways}
 \end{aligned}$$

Hence, the correct option is (B) i.e., 90.

Q10 Text Solution:

Given,

Total points = 20

No. of collinear points = 5

We know that, 3 points are required to form a triangle for which atleast 2 points should be non-collinear.

Thus, the required triangles = ${}^{20}C_3 - {}^5C_3$

$$\begin{aligned}
 &= \frac{20!}{3! \times 17!} - \frac{5!}{3! \times 2!} \\
 &= \frac{20 \times 19 \times 18}{3 \times 2} - \frac{5 \times 4}{2 \times 1}
 \end{aligned}$$

$$= 1140 - 10$$

$$= 1130$$

Therefore, 1130 triangles can be formed using the given points.

Hence, the correct option is (C).

Q11 Text Solution:

Given, Total bulbs = 5, defective bulbs = 3

Thus, number of working bulbs = 2

For the room to be lighted,

Case 1: One bulb tried is working and second is defective

$$\text{Number of cases} = {}^2C_1 \times {}^3C_1 = 6$$

Case 2: Both are working bulbs

$$\text{Number of cases} = {}^2C_2 = 1$$

Therefore, total number of trials are $6 + 1 = 7$.

Q12 Text Solution:

Given digits: 5, 6, 7, 8, 9

$$\Rightarrow \text{Total digits} = 5$$

To form 3 digit odd number, the unit place can be filled in 3 ways (5, 7, 9).

Since, the digits can be repeated, thus the tens and hundreds place can be filled in 5 ways each.

Therefore, the total required ways

$$= 5 \times 5 \times 3 = 75.$$

Q13 Text Solution:

Required number of ways:

$$\text{For women} = {}^4P_2 = \frac{4!}{2!} = 12$$

$$\text{For men} = {}^6P_3 = \frac{6!}{3!} = 120$$

Total number of possible arrangements

$$= 120 \times 12 = 1440$$

Hence, the correct option is (D).

Q14 Text Solution:

To form a ring of 8 boys.

Fix the position of one boy, now arrange the 7 boys in 7! ways.

Hence, option (B) is correct.

Q15 Text Solution:

Given word: "ALGEBRA"

Total letters: 7

Since, the relative order of the vowels should not be changed thus

V C C V C C V

i.e., vowels (A, E, A) can arranged themselves in $\frac{3!}{2!}$ ways

Consonants (L, G, B, R) can be arranged themselves in 4! ways

Therefore, the total

$$\text{ways} = \frac{3!}{2!} \times 4! = 3 \times 24 = 72 \text{ ways.}$$

Q16 Text Solution:

Given,

Number of consonants = 10

Number of vowels = 4

Thus, selection of 6 consonants out of 10 can be



done in ${}^{10}C_6$ ways.

Now, selection 3 vowels out of 4 vowels can be done in 4C_3 ways. Since, there are 9 letters which can be arranged in $9!$ ways to form a word.

Therefore, the total number of words formed
 $= {}^{10}C_6 \times {}^4C_3 \times 9!$

Hence, option (B) is correct i.e.,

$${}^{10}C_6 \times {}^4C_3 \times 9!.$$

Q17 Text Solution:

Given: ${}^nC_{10} = {}^nC_{14}$

We know that,

$${}^nC_x = {}^nC_y \Rightarrow x = y \text{ or } x + y = n$$

Since, ${}^nC_{10} = {}^nC_{14}$

$$\Rightarrow 10 + 14 = n$$

$$\Rightarrow n = 24$$

Thus, ${}^{25}C_n = {}^{25}C_{24} = 25$

Therefore, the value of ${}^{25}C_n$ is 25.

Hence, option (B) is correct.

Q18 Text Solution:

The word given is 'COMMERCE'

Total number of letters in 'COMMERCE' is 8.

Number of 'C' = 2

Number of 'M' = 2

Number of 'E' = 2

Therefore number of arrangements $= \frac{8!}{2! \times 2! \times 2!}$

Q19 Text Solution:

Given word, ORIENTAL

Number of letters = 8

Number of vowels (O, I, E, A) = 4

Here, the first place can be filled in 4 ways

Thus, the remaining 7 places can be filled

$$= {}^7P_7 = \frac{7!}{0!} = 7!$$

Therefore, total ways $= 4 \times 7! = 20160..$

Q20 Text Solution:

Given,

Total points = 60

Number of points collinear = 5

We know, 3 points are needed to form a triangle.

Thus, the number of triangles that can be formed

$$= {}^{30}C_3 - {}^5C_3$$

$$= \frac{30!}{27! \times 3!} - \frac{5!}{2! \times 3!}$$

$$= \frac{30 \times 29 \times 28}{3 \times 2 \times 1} - \frac{5 \times 4 \times 3}{3 \times 2 \times 1}$$

$$= 4050$$

Q21 Text Solution:

The word 'STRANGE' consist of 7 words.

We need to arrange the letters so that vowels are never separated

There are 2 vowels in 'STRANGE' consider them as one.

So, we will have 6 letters it can be arranged in $6!$ ways.

And vowel can arrange themselves in $2!$ ways.

So, the total number of ways can the word 'STRANGE' be arranged so that the vowels are never separated $= 6! \times 2!$

Hence, option (A) is correct.

Q22 Text Solution:

Given: 3 person can go into a railway carriage having 8 seats.

They can occupy it in 8P_3 .

Hence, option (A) is correct.

Q23 Text Solution:

Given digits: 3, 4, 5, 6, 7, 8, 9

Total arrangements of digits $= 7!$

Now, numbers divisible by 5 $= 6!$ (keeping 5 fix at units place)

Thus, total number of 7-digits numbers not divisible by 5

$$= \text{Total arrangements} - \text{Numbers divisible by 5}$$

$$= 7! - 6!$$

$$= 5040 - 720$$

$$= 4320$$

Hence, the correct option is (A) i.e. 4320.

Q24 Text Solution:

Given word: "DIRECTOR"



Total letters = 8

Total ways to arrange these 8 letters = $\frac{8!}{2!}$ (Since, R is repeating twice) ... (i)

Now, number of ways of arrangement when all three vowels are together:

Taking all three together as single unit (O, E, I), then

Total letters: 6 (D, R, C, T, R, (OEI))

Possible arrangement = $\frac{6!}{2!}$

since, vowels can also arrange themselves in 3! ways

Total ways = $\frac{6!}{2!} \times 3!$ (ii)

Now, number of ways such that the three vowels are never together

= Total ways - No. of ways when vowels are together

$$\begin{aligned} &= \frac{8!}{2!} - \frac{6!}{2!} \times 3! \\ &= 20160 - 2160 \\ &= 18000 \end{aligned}$$

Q25 Text Solution:

To evaluate: $5! - 4!$

$5!$ can be written as $5 \times 4!$

Thus, $5! - 4! = 5 \times 4! - 4!$

$$= 4!(5 - 1)$$

$$= 4! \times 4$$

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

$$= 96$$

Hence, the correct option is (B) i.e. 96.

Q26 Text Solution:

Given:

Number of boys = 6

Number of girls = 4

Since, 3 boys and 2 girls are to be selected, thus

Total possible ways = ${}^6C_3 \times {}^4C_2$

$$= \frac{6!}{(6-3)! \times 3!} \times \frac{4!}{(4-2)! \times 2!}$$

$$= 20 \times 6 = 120$$

Hence, the correct option is (A).

Q27 Text Solution:

We need to find n

Given : ${}^nP_4 = 12 \times {}^nP_2$

$$\Rightarrow \frac{n!}{(n-4)!} = 12 \times \frac{n!}{(n-2)!} \quad \therefore {}^nP_r = \frac{n!}{(n-r)!}$$

$$\Rightarrow \frac{n \times (n-1) \times (n-2) \times (n-3) \times (n-4)!}{(n-4)!} = 12$$

$$\times \frac{n \times (n-1) \times (n-2)!}{(n-2)!}$$

$$\Rightarrow (n-2) \times (n-3) = 12$$

$$\Rightarrow n^2 - 5n + 6 - 12 = 0$$

$$\Rightarrow n^2 - 5n - 6 = 0$$

$$\Rightarrow n^2 - 6n + n - 6 = 0$$

$$\Rightarrow n(n-6) + (n-6) = 0$$

$$\Rightarrow (n-6)(n+1) = 0$$

$$\Rightarrow n = 6 \text{ or } -1$$

$$\Rightarrow n = 6$$

Since ${}^nP_r = \frac{n!}{(n-r)!}$ and $n \geq r$

So, the value of n is 6

Hence, option (B) is correct, i.e. 6.

Q28 Text Solution:

Given: ${}^nP_6 = 20 \times {}^nP_4$

$$\Rightarrow \frac{n!}{(n-6)!} = 20 \times \frac{n!}{(n-4)!}$$

$$\Rightarrow (n-4)! = 20 \times (n-6)!$$

$$\Rightarrow (n-4) \times (n-5) = 20$$

$$\Rightarrow n^2 - 9n + 20 = 20$$

$$\Rightarrow n(n-9) = 0$$

$$\Rightarrow n - 9 = 0$$

$$\Rightarrow n = 9$$

or

Since, $(n-4) \times (n-5) = 20$

$$(n-4) \times (n-5) = 5 \times 4$$

On comparing, $(n-4) = 5$

$$\Rightarrow n = 9$$

Q29 Text Solution:

As we know,

Number of diagonals of a polygon with n sides is



given by the formula,

$${}^nC_2 = n$$

Given in the question, $n = 44$

Put the value of n and compute,

$$\Rightarrow 44 = \frac{n!}{2! \times (n-2)!} - n$$

$$\Rightarrow n^2 - 3n - 88 = 0$$

$$\Rightarrow n^2 - 11n + 8n - 88 = 0$$

$$\Rightarrow n(n - 11) + 8(n - 11) = 0$$

$$\Rightarrow (n + 8)(n - 11) = 0$$

$$\Rightarrow n + 8 = 0, n - 11 = 0$$

$$\Rightarrow n = -8, n = 11$$

As, n can't be negative,

Thus, $n = 11$

Hence, the correct option is (D).

Q30 Text Solution:

Given condition: Number should be greater than 100

Case I: Three digit number

Since, the number should be even number, thus Hundredth place can be filled in 2 ways (0 or 2).

1: If hundreds place is filled with number 2, then the number of ways the other places can be filled:

Hundred place: 1 way (2)

Unit place: 2 ways (1, 3)

Tens place: 2 ways

Therefore, total ways $= 2 \times 2 \times 1 = 4$

2: If hundreds place is filled with number 0, then the number of ways the other places can be filled:

Hundred place: 1 way (0)

Unit place: 3 ways (1, 2, 3)

Tens place: 2 ways

Therefore, total ways $= 3 \times 2 = 6$

Case II: Three digit number

1: If thousands place is filled with number 2, then the number of ways the other places can be filled:

Total ways $= 2 \times 2 \times 1 \times 1 = 4$

2: If thousands place is filled with number 0, then the number of ways the other places can be filled:

Total ways $= 3 \times 2 \times 1 \times 1 = 6$

Hence, the total required

ways $= 4 + 6 + 4 + 6 = 20$ ways.

Q31 Text Solution:

Given,

Number of boys $= 15$

Number of girls $= 13$

Since, the teacher has to choose 1 boy and 1 girl for class representative, thus

Number of ways the selection can be made $= 15 \times 13 = 195$

Hence, the correct option is (C) i.e. 195.

Q32 Text Solution:

Given: First task can be completed in 4 ways and second tasks can be completed in 6 ways

Thus, by Fundamental Principle counting of addition,

Either of the tasks can be completed in 4 ways or 6 ways

Therefore, total number of ways $= 4 + 6 = 10$

Hence, the correct option is (A) i.e. 10 ways.

Q33 Text Solution:

Given word; DRAUGHT (7 Letters)

DRAUGHT has 5 consonants and 2 vowels

According to the question,

Consider 2 vowels as a single letter, now the total letters in the word DRAUGHT becomes 6

The above scenario can be arranged in $6!$ ways.

Both the vowels can arranged in $2!$ ways among themselves.

Total permutations $= 6! \times 2!$

$= 720 \times 2$

$= 1440$



Hence, the correct option is (B) i.e., 1440.

Q34 Text Solution:

$\frac{10!}{7!}$ can be written as
 $\frac{10 \times 9 \times 8 \times 7!}{7!}$

$$= 10 \times 9 \times 8$$

$$= 720$$

Hence, the correct option is (C) i.e. 720.

Q35 Text Solution:

Given: Pairs of shoes = 4 and pairs of socks = 2

By Fundamental Principle counting of multiplication,

$$\text{Required number of ways} = 4 \times 2 = 8$$

Hence, the correct option is (C) i.e. 8.

Q36 Text Solution:

We know that,

The value of $0!$.

Hence, option (B) is correct.

Q37 Text Solution:

$$\begin{aligned} & \frac{7!}{5! \times 2!} \\ &= \frac{7 \times 6 \times 5!}{5! \times 2!} \\ &= \frac{7 \times 6}{2!} \\ &= \frac{7 \times 6}{2 \times 1} \\ &= 7 \times 3 \\ &= 21 \end{aligned}$$

$$\text{Therefore, } \frac{7!}{5! \times 2!} = 21$$

Hence, the correct option is (A) i.e. 21.

Q38 Text Solution:

$$\text{To find: } \frac{0! \times 5!}{2!}$$

We know that,

$$0! = 1$$

$$\text{Thus, } \frac{0! \times 5!}{2!}$$

$$= \frac{1 \times 5 \times 4 \times 3 \times 2!}{2!}$$

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

$$= 60$$

Hence, the correct option is (B) i.e. 60.

Q39 Text Solution:

Given,

Number of letters = 6

Number of letter boxes = 5

Since, each of the letter can be posted in any one of the 5 letter boxes.

Thus, total number of ways in which all the 6 letters can be posted

$$= 5 \times 5 \times 5 \times 5 \times 5 \times 5 = 5^6$$

Hence, the correct option is (C) i.e. 5^6 .

Q40 Text Solution:

$$\text{Given: } \frac{1}{6!} + \frac{1}{7!} = \frac{x}{8!}$$

$$\Rightarrow x = \frac{8!}{6!} + \frac{8!}{7!}$$

$$\Rightarrow x = \frac{8 \times 7 \times 6!}{6!} + \frac{8 \times 7!}{7!}$$

$$\Rightarrow x = 8 \times 7 + 8$$

$$\Rightarrow x = 56 + 8 = 64$$

Therefore, the value of x is 64.

Hence, the correct option is (D) i.e. 64.



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