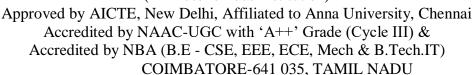


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Permutation and Combination Quactions with Answers

Questions with Answers						
1. In how many with that all the vowel A. 88322 ways	s occur togethe			JIDING' be arranged D. 144868 ways	such E.	
None of these						
Ans:						
A's and 2 I's) an	ad 7 consonants well as one letter = 40320/2 = 20 ppear twice, so /4 = 6 red number of words. We arranged the occur together the soccur together with the soccur together described in the soccur together with the soccur together described in the soccur together des	(i.e 2 G's and, the number 160 o vowels can ways in which to	nd each of P, R, r of letters become be arranged as the harmonic h	mes 8 which can be	(i.e. 2	
withtwo seats in	front and three omeone who kn	in the rear. lows driving	The people who can sit on the d	ated in a five seater cooknow driving don't driver's seat. Find the	sit	
_	• •	. 48	D. 36	E. None of these		
Ans:						
Number of people Number of ways The other person ways Total number of Number of ways Total number of Hence, correct at Hence, option D	of selecting dr who knows dr ways of seating of seating remall five can be all five can be	iver = 2C1 iving can be g the two per aining = 3!	$rsons = 2C1 \times 3$	the rear three seats in	13	
3. A boy is playing a Snake & Ladder game; he is on 91 and has to get to 100 to						

complete the game. There is a snake on 93 and 96. In how many ways he can complete

D. 18

E. 19

thegame, if he doesn't want to roll the dice more than three times.

C. 16

A. 20

B. 15



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Ans:

91 - 92 - 93 - 94 - 95 - 96 - 97 - 98 - 99 - 100

Total position advance needed = 100 - 91 = 9

One roll of dice can't complete the game.

If he completes in two roll of dice.

Possible dice throws are -(3&6), (4&5), (5&4), (6&3)

But (5&4) will bring the token on 96, so this is rejected.

If he completes the game in three roll of dices

First dice reading options are 1,3,4,6

After checking all option and rejecting those in which token reaches on 93 or 96

Possible dice throws are (1,2,6), (1,3,5), (1,5,3), (1,6,2);

(3,1,5),(3,3,3),(3,4,2),(3,5,1);

(4,2,3),(4,3,2),(4,4,1)

(6, 1, 2), (6, 2, 1)

Total number of ways = 16

Hence, option C is correct.

4. 8 members are to be selected from a group of 9 males and 7 females. In how many ways will the members with at most 3 females and at least 4 males be selected?

A. 6472 ways

B. 6286 ways

C. 6435 ways

D. 6225 ways E.

None of these

Ans:

Case I: 5 males and 3 females can be selected

Number of ways of selection = $9C5 \times 7C3 = 126 \times 35 = 4410$

Case II: 6 males and 2 females can be selected

Number of ways of selection = $9C6 \times 7C2 = 84 \times 21 = 1764$

Case III: 7 males and 1 female can be selected

Number of ways of selection = $9C7 \times 7C1 = 36 \times 7 = 252$

Case IV: 8 males can be selected

Number of ways of selection = 9C8 = 9

So, total number of ways of selecting the members = 4410 + 1764 + 252 + 9 = 6435 ways

Hence, option C is correct.

5. A chess board has rows and columns marked A to H and 1-8. Aman has a knight and arook which he has to place on the board such that the two pieces are not in same rowor column, what is total number of ways he can place the two pieces?

A. 3072

B. 3136

C. 6272

D. 6144

E. None of these

Ans:



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As shows in the image a knight and a rook has to be placed, but not in the same row or olumn.

Let us select any box out of 64 for placing knight, no of ways = 64C1Now, row 6 and column c can't be used to place rook. Remaining boxes = 64 - (8 + 7) = 49

The rook can be place in any of 49 boxes, no of ways = 49C1 Total number of possible ways = $49C1 \times 64C1 = 3136$ Hence, option B is correct.

6. How many three letter words can be formed using the letters of the word "PRACTICES"?

A. 56

B. 336

C. 216

D. 357

E. None of these

Ans:

Combinations of	Number of	Number of	Total number of
three different	combinations	permutations for	permutations
letter		each combination	
3 different letter		6	336
	8C3 = 56		
2 same letter (eg.	7C1 = 7	3	21
c.c.v)			
	357		

Hence, option D is correct.

7. Six students sitting in a row are given one toffee each from three types of toffees such that no two adjacent child gets same type of toffee. In how many ways can the toffees be distributed among the students?

A. 120

B. 24

C. 96

D. 48

E. None of these

Ans:

Let the students be S1,S2,S3,S4,S5,S6 and

A, B and C be three types of toffee

S1 can get any of the 3 from A, B, and C in 3 ways

S2 can get any of the 2, other than what A got in 2 ways

S3,S4,S5,S6 each can get different toffee in 2 ways

Total numbers of ways in which distribution can be done

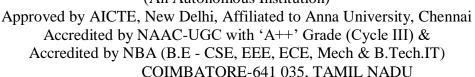
 $3 \times 2 \times 2 \times 2 \times 2 \times 2 = 96$

Hence, option C is correct.

8. In how many different ways can the letters of the word "Thoughts" be arranged in such a way that the vowels always come together?



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A. 2620 ways

B. 2420 ways

C. 2520 ways

D. 2320 ways

E. 2120 ways

Ans:

In the word "Thoughts", there are 2 vowels O and U and 6 consonants, 2T's, 2H, 1G and 1S.

Number of ways = $7! \times 2! / 2! \times 2!$

 \rightarrow 35 × 9 × 8 = 2520 ways.

Hence, option C is correct.

9. An objective test with all the questions mandatory to be answered can be attempted in 127 ways such that the student gets at least one question right. Find the number of ways in which he can answer 4 questions correctly.

A. 44

B. 35

C. 28

D. Can't be determined

E. None of these

Ans:

Any question can be answered in 2 ways (right or wrong) Let the number of questions be N

 $2^{N} - 1 = 127$

Therefore N = 7

Number of ways in answering 4 answers correctly = 7c4 = 35

Hence, option B is correct.

10. A postmaster wants to get delivered 6 letters at six different addresses. In the post office there are 2 postmen then in how many ways can the postmaster send the letters at different addresses through the postmen?

A. 6!2!

B. $6! \times 2!$

C. 64

D. 36

E. None of these

Ans:

Each letter can be delivered at the six different addresses in 2 different ways Hence, the required number of ways $= 2^6 = 64$ Hence, option C is correct.