Solutions :

1. Ans : (d)



Total = 375

1. Ans : (a)

The number of 5 letter words with atleast one letter is repeated

= Total number of 5 letter wordNumber of 5 letter words with all different letters



1. Ans : (c)





Req

1. Ans : (a)

Required 

1. Ans : (b)



1. Ans : (b)

Number of numbers that can be formed with the digits 3,4,5,6 is 4! = 24 (taking all at a time) Fixing 3 in unit place we will have 3! numbers. That is 3 appears in unit place in 6 numbers. Thus each of the digit appear in the unit place 3! = 6 times.

Sum of the digits in unit place = (3 + 4 + 5 + 6)6 = 108

1. Ans : (d)

7 boys can be arranged in a row in 7! ways. Now there are 8 possible places where girls can be placed. This can be done in ways

Required 

1. Ans : (b)



1. Ans : (c)

Use : 

1. Ans : (b)

Number of ways of arranging the letters D, L, N, N in the first positions is

The remains 5 letters can be arranged in ways

Required 

1. Ans : (a)



First place can be filled in 3 ways (using 1,2,3)

1. Ans : (b)

In between + signs, there are 7 places which can be filled in  ways

1. Ans : (a)

Six men can be seated in 5! ways. 5 women can be seated in the 6 gaps between the men is ways

1. Ans : (a)

Required 

1. Ans : (b)

The maximum value of  is  if n is even

1. Ans : (b)

   (verify)

1. Ans : (c)
2. Ans : (b)



1. Ans : (c)



1. Ans : (a)

There are 5 odd digits. Clearly one odd digit will repeat in a 6 digit numbers. This one odd digit can be selected in 5 ways.

Required 

1. Ans : (b)



1. Ans : (a)

First arrange the five boys and this can be done in 5! = 120 ways

Then arrange the 3 girls strictly among the 4 gaps provided by the boys , i.e ways

1. Ans : (b)

Required 

1. Ans : (a)
2. Ans : (d)

Required

1. Ans : (c)
2. Ans : (b)

First arrange the consonants and this can be done in 3! ways. Now arrange the 3 vowels in 4 places  ways

Required 

1. Ans : (d)

4 odd digits can occupy the 4 even places in ways

The 5 even digits can occupy the 5 odd places in ways

1. Ans : (d)

There are three multiple choice questions each has four possible answers. Therefore the total number of possible answers will be . Out of these possible answers only one will be correct and hence the number of ways in which a student can fail to get all correct answers is

1. Ans : (a)

First arrange the 6 red beads around a circle and this can be done in  ways. Between 6 red beads there are 6 spaces and the 4 pink beads can be placed in these spaces in  ways

Required 

1. Ans : (b)

Number of ways of selecting drivers 

Number of ways of selecting 2 seats from remaining 5 seats 

Total number of selection

1. Ans : (c)

Allotment of 4 volunteers in the first ward

Allotment of 5 volunteers in the second ward out of 16 persons 

Allotment of 8 volunteers in the third ward out of 11 persons 

Total allotment 

1. Ans : (d)

Number of 4 digit numbers 

Number of 5 digit numbers 

Number of 5 digit numbers 

1. Ans : (d)



1. Ans : (b)

First prize may be given to any one of the 4 boys in 4 ways.

similarly all

Required 

1. Ans : (d)



1. Ans : (a)

1. Ans : (d)

Number of 5 digit numbers (with repetition)digit numbers(without repetition)



1. Ans : (a)

A number is divisible by 3, if the sum of the digits is divisible by 3.

and

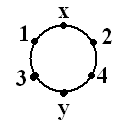
 

1. Ans : (b)

Atleast 3 men and 2 women : The number of ways

For 2 particular women to be always there the number of ways 

Required = Total - together

1. Ans : (d)

Let 1, 2, x be three boys and 3, 4, y be the three girls

Required 

1. Ans : (a)

The number of 3 digit numbers 

Total number of 3 digit numbers in which 5 does not occur 

Required 

1. Ans : (b)





1. Ans : (b)

1. Ans : (a)

Ways of distribution 

1. Ans : (a)

There are 9 horizontal and 9 vertical lines 

1. Ans : (d)



1. Ans : (c)
2. Ans : (d)

Maximum number of points 

1. Ans : (b)

Required number of ways 

1. Ans : (b)

Required number of ways is 

1. Ans : (c)

A number is divisible by 4, if ‘last two digits’ divisible by 4.

Then  or 24 or 32 or 52

Remaining places can be filled in each case in 3! ways.

Required 

1. Ans : (d)

There are 3E’s Fixing 2E’s at first and last places we are left with the letters NDEANOL. This can be arranged in ways

1. 544.bmpAns : (a)

In the following figure.

There are 4 bus routes from A to B and 3 routes from B to C. Therefore, there are ways to go from A to C. It is round trip so the man will travel back from C to A via B. It is restricted that man can not use same bus routes from C to B and B to A more than once. Thus, there are routes for return journey. Therefore, the required number of ways

1. Ans :(d)



Required  

1. Ans : (c)

R, D can be arranged in 6 ways such that two letters between R and D. Remaining 4 places can be arranged in 4! ways.

1. Ans : (b)

Number of ways of arranging the letters D, L, N, N in the first positions is

The remains 5 letters can be arranged in ways

Required 

1. Ans : (d)
2. Ans : (a)

Number of 3 digit number 

Number of 2 digit numbers 

Number of 1 digit number = 7

Total = 259

1. Ans : (b)

**Answer Key :**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1) d | 2) a | 3) c | 4) a | 5) b | 6) b | 7) d | 8) b | 9) c | 10) b |
| 11) a | 12) b | 13) a | 14) a | 15) b | 16) b | 17) c | 18) b | 19) c | 20) a |
| 21) b | 22) a | 23) b | 24) a | 25) d | 26) c | 27) b | 28) d | 29) d | 30) a |
| 31) b | 32) c | 33) d | 34) d | 35) b | 36) d | 37) a | 38)d | 39) a | 40) b |
| 41)d | 42) a | 43) b | 44) b | 45) a | 46) a | 47) d | 48) c | 49) d | 50) b |
| 51) b | 52) c | 53) d | 54) a | 55) d | 56) c | 57) c | 58) d | 59) a | 60) b |