Mental Ability

Ganit Bodh Series

Self Evaluation Test -11 (Permutations & Combinations)

1. The number of ways in which the digits of the number of 125453752 can be rearranged such that no two 5's come together is

   a) $\frac{\lfloor 9}{\lfloor 3 \lfloor 2}$ b) $\frac{\lfloor 7}{\lfloor 3 \lfloor 2}$

   c) $\frac{^{7}C_{3} \lfloor 6}{\lfloor 2}$ d) none of these

2. Sum of all the odd divisors of 360 is
   a) 70 b) 78
   c) 80 d) 88

3. There are 6 balls of different colours and 3 boxes of different sizes. Each box can hold all the 6 balls. The balls are put in the boxes so that no box remains empty. The number of ways in which this can be done is
   a) 534 b) 543
   c) 540 d) 28

4. Number of divisors of $2^2 . 3^3 . 5^3 . 7^5$ of the form $4n + 1$, $n \in N$ is
   a) 46 b) 47
   c) 96 d) none of these

5. If the number of words of 4 letters formed with n different letters of an alphabet such that at least one letter is repeated in the word is 936,then n =
   a) 4 b) 5
   c) 6 d) none of these

6. A five digit number divisible by 6 is to be formed using the digits 0, 1, 2, 3, 4, 5 without repetition. The total number of ways in which this can be done is
   a) 180 b) 108
   c) 80 d) 810

7. The number of ways in which a mixed double game can be arranged from amongst 5 married couples if at least one husband and wife play in the same game is
   a) 200 b) 140
   c) 60 d) none of these

8. n boys and n girls sit along a line alternately in x ways and along a circle in y ways such that $x = 10y$ then the number of ways in which n boys can sit at a round table so that all shall not have same neighbours is
   a) 6 b) 120
   c) 12 d) 360

9. Number of positive unequal integral solutions of the equation $x + y + z = 6$ is

   a) $\lfloor 4$ b) $\lfloor 3$

   c) $\lfloor 5$ d) $2 \times \lfloor 4$

10. The number of n-digit numbers, no two consecutive digits being the same, is

    a) $\lfloor n$ b) $\lfloor 9$

    c) $9n$ d) n^9

11. On a railway there are 10 stations. The number of types of tickets required in order that it may be possible to book a passenger from every station to every other is

    a) $\frac{\lfloor 10}{\lfloor 2}$ b) $\lfloor 10 \lfloor 2$

    c) $\frac{\lfloor 10}{\lfloor 8}$ d) $\frac{\lfloor 10}{\lfloor 8 \lfloor 2}$

12. The total number of ways of selecting 10 balls out of an unlimited number of identical white, red and blue balls is equal to

    a) $^{12}C_2$ b) $^{12}C_3$

    c) $^{10}C_2$ d) $^{10}C_3$

13. There are 10 person among whom two are brothers. The total number of ways in which these persons can be seated around a round table so that exactly one person sit between the brothers, is equal to

    a) $(2!)(7!)$ b) $(2!)(8!)$

    c) $(3!)(7!)$ d) $(3!)(8!)$

14. A teacher takes 3 children from her class to the zoo at a time as often as she can, but she doesn't take the same set of three children more than once. She finds out that she goes to the zoo 84 times more than a particular child goes to the zoo. Total number of students in her class in equal to
    a) 12 b) 14
    c) 10 d) 11

15. A person predicts the outcome of 20 cricket matches of his home team. Each match can result either in a win, loss or tie for the home team. Total number of ways in which he can make the predictions so that exactly 10 predictions are correct, is equal to

    a) $^{20}C_{10} . 2^{10}$ b) $^{20}C_{10} . 3^{20}$

    c) $^{20}C_{10} . 3^{10}$ d) $^{20}C_{10} . 2^{20}$

16. Total number of ways in which 15 identical blankets can be distributed among 4 persons so that each of them gets atleast two blankets, equal to

    a) $^{10}C_3$ b) $^{9}C_3$

    c) $^{11}C_3$ d) none of these

17. A team of four students is to be selected from a total of 12 students. Total number of ways in which team can be selected such that two particular students refuse to be together and other two particular students wish to be together only, is equal to
    a) 220 b) 182
    c) 226 d) none of these