DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth **SUBJECT : MATHS**
DATE : **DPP NO. :1**

Topic :-PERMUTATIONS AND COMBINATIONS

1. Let $A = \{x_1, x_2, x_3, x_4, x_5, x_6\}$, $B = \{y_1, y_2, y_3, y_4, y_5, y_6\}$.Then the number of one –one mapping from A to B such that $f(x_i) \neq y_v i = 1, 2, 3, 4, 5, 6$ is
   a) 720 b) 265 c) 360 d) 145

2. A man invites a party to $(m + n)$ friends to dinner and places m at one round table and n at another. The number of ways of arranging the guests is
   a) $\frac{(m+n)!}{m!n!}$ b) $\frac{(m+n)!}{(m-1)!(n-1)!}$ c) $(m-1)!\,(n-1)!$ d) None of these

3. The number of ways in which seven persons can be arranged at a round table, if two particular persons may not sit together is
   a) 480 b) 120 c) 80 d) None of these

4. If ${}^{2n+1}P_{n-1} : {}^{2n-1}P_n : 3 : 5$, then the value of n is equal to
   a) 4 b) 3 c) 2 d) 1

5. The number of ways in which a committee can be formed of 5 members from 6 men and 4 women if the committee has at least one woman, is
   a) 186 b) 246 c) 252 d) 244

6. In how many ways can 5 books be selected out of 10 books, if two specific books are never selected?
   a) 56 b) 65 c) 58 d) None of these

7. The number of parallelograms that can be formed from a set of four parallel lines intersecting another set of three parallel lines, is
   a) 6 b) 18 c) 12 d) 9

8. There is a set of m parallel lines intersecting a set of another n parallel lines in a plane. The number of parallelograms formed, is
   a) ${}^{m-1}C_2 . {}^{n-1}C_2$ b) ${}^{m}C_2 . {}^{n}C_2$ c) ${}^{m-1}C_2 . {}^{n}C_2$ d) ${}^{m}C_2 . {}^{n-1}C_2$

9. The value of ${}^{50}C_4 + \sum_{r=1}^{6} {}^{56-r}C_3$ is
   a) ${}^{56}C_4$ b) ${}^{56}C_3$ c) ${}^{55}C_3$ d) ${}^{55}C_4$

10. The number of numbers of 4 digits which are not divisible by 5, are
    a) 7200 b) 3600 c) 14400 d) 1800

11. 4 buses runs between Bhopal and Gwalior. If a man goes from Gwalior to Bhopal by a bus and comes back to Gwalior by another bus, then the total possible ways are
    a) 12 b) 16 c) 4 d) 8

12. The total number of different combinations of letters which can be made from the letters of the word MISSISSIPPI is

a) 150 b) 148 c) 149 d) None of these

13. Six points in a plane be joined in all possible ways by indefinite straight lines and if no two of them be coincident or parallel, and no three pass through the same point (with the exception of the original 6 points). The number of distinct points or intersection is equal to

a) 105 b) 45 c) 51 d) None of these

14. The total numbers of ways of dividing 15 things into groups of 8,4 and 3 respectively is

a) $\frac{15\,!}{8\,!4\,!(3\,!)^2}$ b) $\frac{15\,!}{8\,!4\,!3\,!}$ c) $\frac{15\,!}{8\,!4\,!}$ d) None of these

15. In a circus there are ten cages for accommodating ten animals. Out of these four cages are so small that five out of 10 animals cannot enter into them. In how many ways will it be possible to accommodate ten animals in these ten cages?

a) 66400 b) 86400 c) 96400 d) None of these

16. Let T_n denote the number of triangles which can be formed using the vertices of a regular polygon of n sides. If $T_{n+1} - T_n = 21$, then n equals

a) 5 b) 7 c) 6 d) 4

17. At an electron, a voter may vote for any number of candidates not greater than the number to be elected. There are 10 candidates and 4 are to be elected. If a voter votes for at least one candidate, then the number of ways in which he can vote, is

a) 6210 b) 385 c) 1110 d) 5040

18. All possible two factors products are formed from numbers 1, 2, 3, 4,...,200. The number of factors out of the total obtained which are multiples of 5, is

a) 5040 b) 7180 c) 8150 d) None of these

19. If the total number of m elements subsets of the set $A = \{a_1, a_2, a_3, \ldots a_n\}$ is λ times the number of 3 elements subsets containing a_4,then$m$ is

a) $(m-1)\lambda$b) $m\lambda$c) $(m+1)\lambda$d) 0

20. The number of natural numbers less than 1000, in which no two digits are replaced, is

a) 738 b) 792 c) 837 d) 720