DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth **SUBJECT : MATHS**
DATE : **DPP NO. :6**

Topic :-PERMUTATIONS AND COMBINATIONS

1. In a club election the number of contestants is one more than the number of maximum candidates for which a voter can vote. If the total number of ways in which a voter can vote be 126, then the number of contestants is
   a) 4 b) 5 c) 6 d) 7

2. If ${}^nC_{n-r} + 3 \cdot {}^nC_{n-r+1} + 3 \cdot {}^nC_{n-r+2} + {}^nC_{n-r+3} = {}^xC_r$, then $x =$
   a) $n+1$ b) $n+2$ c) $n+3$ d) $n+4$

3. The number of 2×2 matrices having elements 0 and 1, is
   a) 8 b) 16 c) 4 d) None of these

4. If there are n number of seats and m number of people have to be seated, then how many ways are possible to do this$(m < n)$?
   a) ${}^nP_m$ b) ${}^nC_m$ c) ${}^nC_n \times (m-1)!$ d) ${}^{n-1}P_{m-1}$

5. All letters of the word EAMCET are arranged in all possible ways. The number of such arrangement in which no two vowels are adjacent to each other, is
   a) 360 b) 144 c) 72 d) 54

6. In how many ways 5 different beads can be arranged to form a necklace?
   a) 12 b) 120 c) 60 d) 24

7. The number of permutations by taking all letters and keeping the vowels of the word COMBINE in the odd places is
   a) 96 b) 144 c) 512 d) 576

8. Sixteen men compete with one another in running swimming and riding. How many prize lists could be made if there were altogether 6 prizes of different values, one for running, 2 for swimming and 3 for riding?
   a) $16 \times 15 \times 14$ b) $16^3 \times 15^2 \times 14$ c) $16^3 \times 15 \times 14^2$ d) $16^2 \times 15 \times 14$

9. In how many ways can 5 boys and 5 girls sit in a circle so that no two boys sit together?
   a) $5! \times 5!$ b) $4! \times 5!$ c) $\frac{5! \times 5!}{2}$ d) None of these

10. The number of diagonals that can be drawn in a polygon of 15 sides, is

a) 16 b) 60 c) 90 d) 80

11. The number of group that can be made from5 different green balls, 4 different blue balls and 3 different red balls, if at latest 1 green and 1 blue ball is to be included, is

a) 3700 b) 3720 c) 4340 d) None of these

12. The total number of words which can be formed out of the letters a,b,c,d,e,f taken 3 together, such that each word contains at least one vowel, is

a) 72 b) 48 c) 96 d) None of these

13. The number of ways in which $m+n(n \leq m+1)$ different things can be arranged in a row such that no two of the n things may be together is

a) $\frac{(m+n)!}{m!n!}$ b) $\frac{m!(m+1)!}{(m+n)!}$ c) $\frac{m!(m+1)!}{(m-n+1)!}$ d) None of these

14. Number of number greater than 1000 but not greater than 4000 which can be formed with the digits 0, 1, 2, 3, 4, are

a) 350 b) 375 c) 450 d) 576

15. The number of ways in which 8 different flowers can be strung to form a garland so that 4 particular flowers are never separated is

a) $4! \cdot 4!$ b) $\frac{8!}{4!}$ c) 288 d) None of these

16. The numbers of times the digits 3 will be written when listing the integers from 1 to 1000 is

a) 269 b) 300 c) 271 d) 302

17. The number of triangles which can be formed by using the vertices of a regular polygon of $(n+3)$ sides is 220. Then, n is equal to

a) 8 b) 9 c) 10 d) 11

18. The number of ways in which 5 ladies and 7 gentlemen can be seated in a round table so that no two ladies sit together, is

a) $\frac{7}{2}(720)^2$ b) $7(360)^2$ c) $7(720)^2$ d) 720

19. How many numbers lying between 999 and 10000 can be formed with the help of the digits 0, 2, 3, 6, 7, 8 when the digits are not be repeated?

a) 100 b) 200 c) 300 d) 400

20. The sum of the digits in the unit place of all numbers formed with the help of 3, 4, 5, 6 taken al, at a time, is

a) 18 b) 108 c) 432 d) 144