DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth **SUBJECT : MATHS**
DATE : **DPP NO. :3**

Topic :-PERMUTATIONS AND COMBINATIONS

1. The number of four-letter words that can be formed (the words need not be meaningful) using the letters of the word MEDITERRANEAN such that the first letter is E and the last letter is R, is
   a) $\frac{11!}{2!2!2!}$ b) 59 c) 56 d) $\frac{11!}{3!2!2!}$

2. A person goes for an examination in which there are four papers with a maximum of m marks from each paper. The number of ways in which one can get $2m$ marks, is
   a) $2m+1$ b) $\frac{1}{3}(m+1)(2m^2+m+1)$
   c) $\frac{1}{3}(m+1)(2m^2+4m+3)$ d) None of the above

3. A father with 8 children takes them 3 at a time to the zoological gardens, as often as he can without taking the same 3 children together more than once. The number of times he will go the garden, is
   a) 336 b) 112 c) 56 d) None of these

4. A question paper is divided into two parts A and B and each part contain 5 questions. The number of ways in which a candidate can answer 6 questions selecting at least two questions from each part is
   a) 80 b) 100 c) 200 d) None of these

5. Number if divisors of the form $(4n+2), n \geq 0$ of the integer 240 is
   a) 4 b) 8 c) 10 d) 3

6. The number of ways that 8 beads of different colours be strung as a necklace is
   a) 2520 b) 2880 c) 5040 d) 4320

7. The number of arrangements of the letters of the word BANANA in which the two N's do not appear adjacently, is
   a) 40 b) 60 c) 80 d) 100

8. The ten's digit in $1!+4!+7!+10!+12!+13!+15!+16!+17!$ is divisible by
   a) 4 b) 3! c) 5 d) 7

9. The number of ways in which a pack of 52 cards be divided equally amongst four players in order is
   a) ${}^{52}C_{13}$ b) ${}^{52}C_4$ c) $\frac{52!}{(13!)^4}$ d) $\frac{52!}{(13!)^4 4!}$

10. The sides AB, BC, CA of a triangle ABC have 3, 4 and 5 interior points respectively on them. The total number of triangles that can be constructed by using these points as vertices is
    a) 220 b) 204 c) 205 d) 195

11. ${}^{n}P_r = 3024$ and ${}^{n}C_r = 126$, then r is
a) 5 b) 4 c) 3 d) 2

12. The value of ${}^{35}C_8 + \sum_{r=1}^{7} {}^{42-r}C_7 + \sum_{s=1}^{5} {}^{47-s}C_{40-s}$, is
a) ${}^{46}C_7$ b) ${}^{46}C_8$ c) ${}^{47}C_7$ d) ${}^{47}C_8$

13. In Q.65, the number of ways in which A_1 and A_2 are next to each other is
a) 9 ! b) 2 (9 !) c) $\frac{1}{2}$(9 !) d) None of these

14. The number of arrangements which can be made using all the letters of the word $LAUGH$, if the vowels are adjacent, is
a) 10 b) 24 c) 48 d) 120

15. How many ways are three to arrange the letters in the word 'GARDEN' with the vowels in alphabetical order?
a) 120 b) 240 c) 360 d) 480

16. 7 relatives of a man comprise 4 ladies and 3 gentlemen his wife has also 7 relatives, 3 of them are ladies and 4 gentlemen. In how many ways can they invite a dinner party of 3 ladies and 3 gentlemen so that there are 3 of man's relative and 3 of the wife's relative?
a) 485 b) 500 c) 486 d) 102

17. There are n-points in a plane of which p points are collinear. How many lines can be formed from these points?
a) ${}^{n}C_2 - {}^{p}C_2 + 1$ b) ${}^{n}C_2 - {}^{p}C_2$ c) $n - {}^{p}C_2$ d) ${}^{n}C_2 - {}^{p}C_2 - 1$

18. How many numbers between 5000 and 10,000 can be formed using the digits 1,2,3,4,5,6,7,8,9, each digit appearing not more than once in each number?
a) $5 \times {}^{8}P_3$ b) $5 \times {}^{8}C_8$ c) $5 ! \times {}^{8}C_3$ d) $5 ! \times {}^{8}C_3$

19. The number of ways in which 20 one rupee coins can be distributed among 5 people such that each person, gets at least 3 rupees, is
a) 26 b) 63 c) 125 d) None of these

20. The maximum number of points of intersection of 6 circles is
a) 25 b) 24 c) 50 d) 30