1. If ${}^{n}P_3 = 60$, then the value of n is _____

(a) 3 (b) 10 (c) 5 (d) none

2. In how many ways can 12 different things be equally distributed among 4 groups?

(a) 15400 (b) 15000 (c) 14400 (d) none

3. If ${}^{n}P_5 : {}^{n}P_3 = 2:1$, then the value of n is _____

(a) 4 (b) 5 (c) 10 (d) none

4. A room has 10 doors. In how many ways can a man enter the room by one door and come out by a different door.

(a) 90 (b) 100 (c) 50 (d) none

5. A person has 8 places to see, but he has time only to visit 6 of them. In how many different ways can he arrange his schedule?

(a) 20000 (b) 20160 (c) 21160 (d) none

6. In how many ways can you invite one or more of your 6 friends to a party?

(a) 63 (b) 64 (c) 60 (d) none

7. From 17 consonants and 5 vowels, how many words of 3 consonants and 2 vowels can be made if all letters are different?

(a) 810000 (b) 816000 (c) 815000 (d) none

8. Three men and three women are candidates for two vacancies. A voter has to vote for two candidates. In how many ways can he cast his vote?

(a) 10 (b) 12 (c) 15 (d) none

9. In a party of 40 people, each shakes hand with others. How many handshakes took place?

(a) 780 (b) 700 (c) 880 (d) none

10. If ${}^{12}C_5 + 2\times{}^{12}C_4 + {}^{12}C_3 = {}^{14}C_x$ then the value of x is

(a) 5 (b) 9 (c) 5 or 9 (d) none

11. There are 7 men and 3 women. Find the number of ways in which a committee of 6 can be formed if there have to be at least 2 women in the committee.

(a) 140 (b) 130 (c) 105 (d) none

12. A man invites 6 friends to a party. In how many ways can they sit at a round table along with the host and his wife so that those two are always together?

(a) 1440 (b) 144 (c) 1445 (d) none

13. A committee of 3 is to be formed from 3 boys and 5 girls. The number of ways that the committee can be formed so that it contains at least one boy is

(a) 40 (b) 45 (c) 46 (d) None

14. The letters of the word CALCUTTA and AMERICA are arranged in all possible ways. The ratio of the number of these arrangements is _____

(a) 1:2 (b) 2:1 (c) 1:1 (d) 1.5:1

15. ${}^4P_4$ is equal to

(a) 1 (b) 0 (c) 24 (d) None of these

16. In _____ ways can 4 Americans and 4 British men be seated at a round table so that no two Americans are together.

(a) $4! \times 3!$ (b) ${}^4P_4$ (c) $3 \times {}^4P_4$ (d) ${}^4C_4$

17. If ${}^{18}C_n = {}^{18}C_{n+2}$ then the value of n is _____

(a) 0 (b) 12 (c) 8 (d) 6

18. Eleven students are participating in a race. In how many ways the first 5 prizes can be won?

(a) 44550 (b) 55440 (c) 120 (d) 90

19. Find the value of n if $(n + 1)! = 42(n - 1)!$

(a) 6 (b) -7 (c) 7 (d) both (a) and (b)

20. The letters of the words ALLAHABAD and INDIA are arranged in all possible ways. The ratio of the number of these arrangements is

(a) 9! : 5! (b) 126 : 1 (c) 1 : 1 (d) 2 : 5

21.