Multiple Choice Questions

This topic has been included in the CET syllabus for the first time for CET -2021

[MHT CET 2022]
(online shift)
(Memory Based Questions)

1. The total number of ways, of dividing 52 cards amongst 4 players, so that 3 players get 17 cards each and fourth player has just one card are

a) $\frac{52!}{17!}$ b) $\frac{52!}{(17!)^3}$ c) $\frac{52!}{17}$ d) $\frac{52!}{(17!)^2}$

2. A man P has 7 friends, 4 of them are ladies and 3 are men. His wife Q also has 7 friends, 3 of them are ladies and 4 are men. Assume P and Q have no common friends. Then the total number of ways in which P and Q together can throw a party inviting 3 ladies and 3 men so that 3 friends of each P and Q are in this party is

a) 468 b) 469 c) 484 d) 485

3. A bag contains 5 red marbles, 4 black marbles, and 3 white marbles. Then the number of ways in which 4 marbles can be drawn so that at most 2 of them are red is

a) 420 b) 210 c) 385 d) 406

4. Number of ways in which 6 men and 5 women can sit at a round table, if no two women sit together, are

a) $7! \times 5!$ b) $6! \times 5!$ c) 30 d) $5! \times 4!$

5. The number of different 9 digit numbers that can be formed, from the digits of the number 445577888 by rearranging its digits, so that the odd digits occupy even positions are

a) 60 b) 120 c) 180 d) 36

6. There are 6 periods on each working day of school. The number of ways one can arrange 5 subjects such that each is allowed at least one period is

a) 5 b) 725 c) 720 d) 1800

7. If a question paper consists of 11 questions divided into two sections I and II. Section I consists of 6 questions and section II consists of 5 questions, then in how many number of different ways can a student select 6 questions, taking at least 2 questions from each section.

a) 275 b) 350 c) 425 d) 225

8. The number of ways in which the letters of the word MACHINE can be arranged such that the vowels may occupy only odd positions is

a) 576 b) 625 c) 288 d) 1152

9. It is required to seat 5 men and 4 women in a row so that the men occupy odd places. Then the number of arrangements that are possible is

a) 2880 b) 1440 c) 144 d) 362880

10. In a certain examination, a candidate has to pass in each of the 5 subjects. Hence the number of ways he can fail is

a) 2^5 b) $2^5 - 1$ c) 5 d) 5!

[MHT-CET 2021]

11. All the letters of the word 'ABRACADABRA' are arranged in different possible ways then the number of such arrangementse in which the vowels are together is
a) 1200 b) 1240 c) 1220 d) 1260

12. If $\frac{n!}{2!(n-2)!}$ and $\frac{n!}{4!(n-4)!}$ are in the ratio 2 : 1 then n =
a) 6 b) 4 c) 5 d) 3

13. The number of ways in which 8 different pearls can be arranged to form a necklace is
a) 40320 b) 5040 c) 2520 d) 1260

14. For a set of five True or False questions, no student has written all answers correct and no two students have given the same sequence of answers. The maximum number of students in the class for this to be possible is
a) 30 b) 31 c) 32 d) 16

15. A polygon has 44 diagonals then the number of sides of the polygon are
a) 11 b) 12 c) 10 d) 13

16. A number can be formed using the digits 1, 2, 3, 4, 3, 2, 1 so that odd digits always occupy odd places in ..... ways.
a) 9 b) 18 c) 6 d) 3

17. Out of 7 consonants and 4 vowels, the number of words consisting of 3 consonants and 2 vowels are
a) 3300 b) 210 c) 120 d) 25200

18. If $11_{C_4} + 11_{C_5} + 12_{C_6} + 13_{C_7} = 14_{C_r}$, then the value of r is
a) 11 b) 14 c) 7 d) 3

19. The difference between the maximum values of 6_{C_r} and n_{C_r} is 16. Then n =
a) 3 b) 5 c) 2 d) 4

20. A committee of 5 is to be formed out of 6 men and 4 ladies. The number of ways this can be done, when at most 2 ladies are included is
a) 240 b) 186 c) 60 d) 120

[MHT-CET 2023]

21. If ${}^{(m+n)}P_2 = 56$ and ${}^{(m-n)}P_2 = 12$, then
a) $m = 6, n = 3$ b) $m = 3, n = 6$ c) $m = 6, n = 2$ d) $m = 2, n = 6$

22. The number of three digit numbers so formed from the digits 0, 1, 3, 5, 6, if repetition of the digits is not allowed is
a) 24 b) 48 c) 50 d) 100

23. Teacher wants to arrange 5 students on platform such that boy B_1 occupies second position and the girls G_1 and G_2 are always adjacent to each other, then the number of such arrangements are
a) 8 b) 12 c) 16 d) 24

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24. Five students are selected from n students such that the ratio of number of ways in which 2 particular students are selected to the number of ways 2 particular students are not selected is 2 : 3. Then the value of n is
a) 5 b) 6 c) 11 d) 12

25. The value of $\frac{^{10}C_r}{^{11}C_r}$, when both the numerator and denominator are at their greatest values, is
a) $\frac{1}{11}$ b) $\frac{3}{11}$ c) $\frac{4}{11}$ d) $\frac{6}{11}$

26. If in a regular polygon, the number of diagonals are 54, then the number of sides of the polygon are
a) 12 b) 10 c) 9 d) 6

27. If T_n denotes the number of triangles which can be formed using the vertices of a regular polygon of n sides and $T_{n+1} - T_n = 21$, then $n =$
a) 4 b) 5 c) 6 d) 7

28. After a meeting, every participant shakes hands with every other participants. If number of handshakes are 45, then number of participants in meeting is
a) 12 b) 11 c) 13 d) 10

29. A linguistic club consists of 6 girls and 4 boys. A team of 4 members is to be selected from this group including the selection of a leader (from among these 4 members) for the team. If the team has to include atmost one boy, the number of ways of selecting the team is
a) 95 b) 190 c) 285 d) 380

30. A group consists of 8 boys and 5 girls, then the number of committees of 5 persons that can be formed, if committee consists of atleast 2 girls and atmost 2 boys, are
a) 320 b) 321 c) 330 d) 331

[MHT-CET 2024]

31. Let $\alpha = \frac{(4!)!}{(4!)^{3!}}$ and $\beta = \frac{(5!)!}{(5!)^{4!}}$. Then
a) $\alpha \in N$ and $\beta \notin N$ b) $\alpha \notin N$ and $\beta \in N$ c) $\alpha \in N$ and $\beta \in N$ d) $\alpha \notin N$ and $\beta \notin N$

32. In a class of 300 students, every student reads 5 newspapers and every newspaper is read by 60 students. Then the number of newspapers is
a) atleast 30 b) atmost 20 c) exactly 10 d) exactly 25

33. A five digit number divisible by 3 is to be formed using the digits 0, 1, 2, 3, 4, 5 without repetition, then the total number of ways this can be done is
a) 96 b) 120 c) 216 d) 240

34. Number of even numbers so formed using digits 2, 3, 7, 8 so that the number is less than 1000, is
a) 2 b) 8 c) 32 d) 42

35. If all the words with or without meaning made using all the letters of the word NAGPUR are arranged as in a dictionary, then the word at 315th position in this arrangement is
a) NRAGUP b) NRAGPU c) NRAPGU d) NRAPUG

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49. A committee of 11 members is to be formed from 8 males and 5 females. If m is the number of ways the committee is formed with atleast 6 males and n is the number of ways the committee is formed with atleast 3 females, then
a) $m = n = 68$ b) $m = n = 78$ c) $m + n = 68$ d) $m - n = 8$

50. Consider a group of 5 boys and 7 girls. The number of different teams, consisting of 2 boys and 3 girls that can be formed from this group if there are two specific girls A and B, who refuses to be the members of the same team, is
a) 200 b) 300 c) 350 d) 500

51. There are 3 sections in a question paper and each section contains 5 questions. A candidate has to answer a total of 5 questions, choosing atleast one question from each section. Then the number of ways in which the candidate can choose questions, is
a) 750 b) 1500 c) 2255 d) 2250

[MHT-CET 2025]

52. The number of ways in which 6 boys and 5 girls can sit at a round table, if no two girls are to sit together, is
a) 518400 b) 14400 c) 86400 d) 17280

53. There are 6 boys and 4 girls. Arrange their seating arrangement on a round table such that 2 boys and 1 girl cannot sit together.
a) 120 b) 8640 c) 21600 d) 43200

54. How many ways are there to pick 5 letters from English alphabets such that M is the middle of the letters (repetition not allowed) ?
a) ${}^{26}C_5 \cdot 5!$ b) ${}^{25}C_4 \cdot 4!$ c) ${}^{26}C_4 \cdot 4!$ d) ${}^{25}C_5 \cdot 5!$

[JEE Main 2025]

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