Permutation & Combination

Practice Exercise

1) How many 3 – digit numbers can be formed using the digits 1, 2, 3, 4, 5, 6, 7 and 8 such that the numbers are divisible by 2 (repetition of digits is not allowed)?

a) 96 b) 168 c) 196 d) 120

2) Find the 4-digited numbers can be formed by using digits 0 to 9 such that are numbers are ending with odd digit (repetition of digits is allowed).

a) 5000 b) 10000 c) 4500 d) 4^{10}

3) How many 4 – digit numbers can be formed using the digits 1, 2, 3, 4, 5 and 6 such that the numbers are greater than 4000 (repetition of digits is allowed)?

a) 648 b) 360 c) 120 d) 864

4) Find the 10 – digit numbers can be formed using the digits 1, 2, 3 and 4 such that the numbers are divisible by 4 (repetition of digits is allowed)?

a) 4×4^8 b) 3×4^8 c) 5×4^{10} d) 4^{10}

5) How many secured passwords can be formed having one letter of English alphabet and followed by a three-digit number, if repetition and case sensitive is not allowed?

a) 26000 b) 18720 c) 18620 d) 21060

6) How many secured One-time passwords (OTP) can be formed containing numeral from 0 to 9?

a) 1000 b) 8900 c) 9000 d) 10000

7) An e-mail password must contain three characters. The password has to contain one numeral from 0 to 9, one upper case and one lower case character from the English alphabet. How many distinct passwords are possible? ***[GATE 2018/EE]***

a) 26,000 b) 13,520 c) 40,560 d) 1,05,456

8) How many vehicle registration plate numbers can be formed with digits 1, 2, 3, 4, 5 (no digits being repeated) if it is given that registration number can have 1 to 5 digited number plates? ***[TCS]***

a) 205 b) 100 c) 325 d) 120

9) In how many different ways can a six letter word can be formed from the letters of the word 'TABLES' such that the word always starts with a vowel and ends with a consonant?

a) 120 b) 360 c) 24 d) 192

10) In how many different ways can the letters of the word 'LEADING' be arranged in such a way that the vowels always come together? [TCS]

a) 360 b) 480 c) 720 d) 5040

11) In how many ways can the letters of the word 'ERGONOMICS' be rearranged such that the vowels always appear together? [AMCAT, TCS]

a) 7 ! / 6 ! b) 6 ! / 2! c) 7! x 4 ! d) (7 ! x 4 !) / 2 !

12) In how many ways can the letters of the word 'MARTINO' be rearranged such that so that the position of the vowels are used by the vowels only and the position of the consonants are used by the consonants only? *[INFOSYS]*

a) 720 b) 4 ! / 3! c) 4! x 3 ! d) (4 ! x 3 !) / 2 !

13) In how many ways can an animal trainer arrange 5 lions and 4 tigers in a row so that no two lions are together? [AMCAT, TCS]

a) 2880 b) 720 c) 140 d) 1440

14) A coach has to form a team 'X' by selecting seven players from the players in three groups, A, B and C which consists of six, four and three players respectively. In how many ways can he form the team, if it is required to select at least two players from each group?

a) 735 b) 690 c) 825 d) 630

15) In CAT entrance examination paper there are 3 sections, each containing 5 questions. A candidate has to solve 4, choosing at least one from each section. The number of ways he can choose is? *[AMCAT]*

a) 720 b) 250 c) 455 d) 750

16) There were 19 students (S_1, S_2, S_3, ... S_{19}) attending a party, if S_5 wants to shakes a hand with the others, then in how many handshakes are possible?

a) 18 b) 210 c) 171 d) 20

17) In a party, Chris and wife invited 10 families where each guest family consists of 4 members. Find the number of handshakes such that no guest and host families shake hands among themselves.

a) 870 b) 800 c) 200 d) 700

18) In a metro railway system, every station sells tickets for every other station. Some new stations are added for which 46 sets of additional tickets were required. How many stations were there originally and how many new stations were added?

a) 5 original, 6 new b) 6 original, 5 new c) 11 original, 2 new d) 11 original, 3 new

19) In an examination 10 questions are to be answered choosing at least 4 from each section A and section B. If section A and section B consists of 6 questions. In how many ways can these 10 questions be answered? ***[TCS]***

a) 66 b) 18 c) 72 d) 132

20) In a party, the number of handshakes among the men is 55 in number where as the number of handshakes among the women is 28, if every man is shaking a hand with every other woman, then how many handshakes are possible?

a) 88 b) 171 c) 80 d) None

21) 11 points are marked on plane, where 4 points are marked on a straight line. How many lines can be constructed with vertices from among the above points?

a) 49 b) 55 c) 45 d) 50

22) How many diagonals are formed in a 9-sided polygon?

a) 45 b) 9 c) 25 d) 27

23) How many two-digit odd numbers can be composed from the nine digits 0, 1, 2, 3 …. 9?

a) 45 b) 40 c) 42 d) 36

24) Out of 5 boys and 5 girls, a group of 5 students has to be formed containing at least 3 boys. In how many ways can it be done? ***[AMCAT]***

a) 100 b) 120 c) 126 d) 125

25) There are 5 credit cards and 4 debit cards. Out of these 2 credit cards and 3 debit cards have to be chosen at random and arranged on a table. How many arrangements are possible?

a) 3600 b) 4800 c) 5040 d) 2880

Check the Answers

1	**B**	6	**D**	11	**D**	16	**A**	21	**D**
2	**C**	7	**C**	12	**C**	17	**B**	22	**D**
3	**A**	8	**C**	13	**A**	18	**C**	23	**A**
4	**A**	9	**D**	14	**D**	19	**A**	24	**C**
5	**B**	10	**C**	15	**D**	20	**A**	25	**B**