**1**. a. 5 b. 8 c. 4 d. 7

**2**. a. 19 b. 342 c. 171 d. 161

**3**. a. 3 b. 5 c. 4 d. 6

**4**. a. 4 b. 6 c. 3 d. 7

**5.** a. 10 b. 7 c. 11 d. 9

**6**. Maximum value of 11Cr is equal to a. 216 b. 412 c. 462 d. 516

**7**. In how many ways the can the letter of the word PATNA be rearranged? a. 60 b. 120 c. 119 d. 59

**8**. In an office of 30 members on the New Year day, each person sends a greeting card to every other person on New Year’s Day. How many greeting cards are exchanged on that day? a. 890 b. 865 c. 435 d. 870

**9.** In how many ways can the letters of the word MANAGEMENT be rearranged so that the two A’s do not appear together? a. 10! - 2! b. 9! - 2! c. 10! - 9! d. None of these

**10.** How many five digit positive integers that are divisible by 3 can be formed using the digits 0, 1, 2, 3, 4 and 5, without any of the digits getting repeating? a. 625 b. 96 c. 216 d. 120

**11**. The number of diagonals of a polygon of n sides is “n” then n is equal to; a. 5 b. 4 c. 7 d. 6

**12**. In how many ways can the letters of the word EDUCATION be rearranged so that the relative position of the vowels and consonants remain the same as in the word EDUCATION? a. 9! /4 b. 4!\*5! c. 9! / (4!\*5!) d. None of these

**13**. How many numbers are there between 100 and 1000 such that at least one of their digits is 6? a. 252 b. 250 c. 251 d. 253

**14**. In how many ways can 15 people be seated around two round tables with seating capacities of 7 and 8 people?  
a. 15! / 8! b. 7! ×8! c. (15C8) ×6! ×7! d. 2× (15C7) ×6! ×7!

**15.** There are 2 brothers among a group of 20 persons. In how many ways can the group be arranged around a circle so that there is exactly one person between the two brothers? a. 2 × 17! b. 18! × 18 c. 19! × 18 d. 2 ×18!

**16**. A team of 8 students goes on an excursion, in two cars, of which one can seat 5 and the other only 4. In how many ways can they travel? a. 9 b. 126 c. 26 d. 3920

**17.** There are 6 boxes numbered 1, 2...6. Each box is to be filled up either with a red or a green ball in such a way that at least 1 box contains a green ball and the boxes containing green balls are consecutively numbered. The total number of ways in which this can be done is a. 5 b. 21 c. 33 d. 60

**18**. How many integers, greater than 999 but not greater than 4000, can be formed with the digits 0, 1, 2, 3 and 4, if repetition of digits is allowed? a. 376 b. 500 c. 375 d. 499

**19**. In how many rearrangements of the word AMAZED, is the letter 'E' positioned in between the 2 'A's (Not necessarily flanked)? a. 24 b. 72 c. 120 d. 240

**20**. A college has 10 basketball players. A 5-member team and a captain will be selected out of these 10 players. How many different selections can be made? a. 1260 b. 1560 c. 10C6 × 6! d. 10C5 × 6

**21**. In how many ways can the letters of the word ABACUS be rearranged such that the vowels always appear together a. 6! / 2! b. 3! × 3! c. 4! / 2! d. (4! ×3!) /2

**22**. How many words of 4 consonants and 3 vowels can be made from 12 consonants and 4 vowels, if all the letters are different? a. 16C7 × 7! b. 12C4 × 4C3 × 7! c. 12C3 × 4C4 d. 12C4 × 4C3

**23**. How many numbers of times will the digit ‘7' be written when listing the integers from 1 to 1000? a. 271 b. 300 c. 252 d. 304

**24**. What is the value of 1×1! + 2×2! + 3×3! + ............ n×n! a. n (n-1) (n-1)! b. (n+1)! / (n (n-1)) c. (n+1)! - n! d. (n+1)! - 1!

**25**. How many ways can 4 prizes are given away to 3 boys, if each boy is eligible for all the prizes? a. 256 b. 12 c. 81 d. 64

**26**. Four dice are rolled simultaneously. What is the number of possible outcomes in which at least one of the die shows 6? a. 6! / 4! b. 625 c. 676 d. 671

**27**. There are 12 yes or no questions. How many ways can these are answered? a. 1024 b. 2048 c. 4096 d. 144

**28.** In an exam there are 5 multiple choice questions and each question has 3 choices. The number of ways in which a student can fail to get all answer correct is; a. 242 b. 243 c. 124 d. 5C3

**29**. A box contains 2 white balls, 3 black balls and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least one black ball is to be included in the draw? a. 32 b. 48 c. 64 d. 96

**30**. In how many ways can 6 men and 7 women be arranged in a row so that men and women sit alternately? a. 13! / (6! 7!) b. 6! 7! c. d. 1346

**31**. In how many ways can 9 beads be arranged in a necklace? a. 9! /2 b. 9! c. 8! 2! d. 8! /2!

**32**. There are 6 envelopes and 6 corresponding letters. These letters are placed in the envelopes randomly. In how many ways are exactly 5 letters placed into their corresponding envelopes? a. 0 b.1 c. 5 d.6

**33**. How many ways can a group of 4 men and 3 women be selected from a group containing 6 men and 7 women so that Miss .X refuses to be in the same group as Mr. Y? a. 375 b. 300 c. 350 d. 275

**34**. A number plate should have four digits. If the first digit is 3, the second digit is even natural number and the last two digits are in ascending order, and then find the total number of different number plates possible. a. 225 b. 144 c. 135 d. 180

**35**. If the letters of the word CHASM are rearranged to form 5 letter words such that none of the word repeat and the results arranged in ascending order as in a dictionary what is the rank of the word CHASM? a. 24 b. 31 c. 32 d. 30

**36**. How many ways can 10 letters be posted in 5 post boxes, if each of the post boxes can take more than 10 letters? a. b. c. 10P5 d. 10C5

**37**. How many alphabets need to be there in a language if one were to make 1 million distinct 3 digit initials using the alphabets of the language?

a. 26 b. 100 c. 50 d. 1000

**38.** There are 5 Rock songs, 6 Carnatic songs and 3 Indi pop songs. How many different albums can be formed using the above repertoire if the albums should contain at least 1 Rock song and 1 Carnatic song? a.15624 b. 16384 c. 6144 d. 240

**39**. In how many ways can 5 different toys be packed in 3 identical boxes such that no box is empty, if any of the boxes may hold all of the toys?

a. 20 b. 30 c. 25 d. 600

**40**. There are 4 qualifying examinations to enter into IIM’s; CAT, BAT, SAT and PAT. An IITian cannot go to IIM’s through BAT or SAT. A CA on the other hand, can go to the IIMs through the CAT, BAT and PAT but not through SAT. Further, there are 3 ways to become a CA (viz. Foundation, Inter, and Final). Find the ratio of number of ways in which an IITian can make it to IIM to the number of ways a CA can make it to the IIMs? a. 3:2 b. 2:3 c. 2:9 d. 9:2

**41**. There are 100 balls numbered They are arranged in all possible ways. How many arrangements should be there in which ball will always be before ball and the two of them will be adjacent to each other. a. 99! / 2! b. 99!\*2! c. 99! d. 100!\*2!

**42**. There is a number lock with four rings. How many attempts at the maximum would have to be made before getting the right number? a. 10000 b. 255 c. 9999 d. 256

**43**. The number of ways in which 12 different books can be divided equally among 4 boys is;

a. 363600 b. 181800 c. 399600 d. 369600

**44**. The total number of rectangles in a chess board is equal to; a. 1296 b. 1230 c. 204 d.784

**45**. The no: of Straight lines, Triangles formed by 10 points of which 5 are collinear is: a. (45, 10) b. (35, 110) c. (36, 120) d. (36, 110)

**46**. A fruit salad in a bowl has four pieces of apples and one piece each of mango, pineapple, papaya and banana. In how many ways can a spoonful of four pieces be selected if the spoon can hold four pieces of fruits? a. 17 b. 32 c. 24 d. 16

**47**. The sum of all the numbers formed by taking all the digits 1, 2, 3, 5 and 9 once is; a. 498760 b. 5333280 c. 4333670 d. 576760

**48**. How many four digit numbers divisible by 5 can be formed with the digits 0, 1, 2, 3, 4, 5, 6 and 6? a. 220 b. 249 c. 432 d. 216

**49**. In how many ways can a selection be made of 5 letters out of 5As, 4Bs, 3Cs, 2Ds, and 1E? a. 70 b. 71 c. 15C5 d. 89

**50**. In how many ways 9 identical balls be given to 3 children’s a. 55 b. 66 d. 77 d. 88

**51**. The number of ways of selecting 10 balls from unlimited number of blue, yellow, green and white balls is; a. 145 b. 169 c. 289 d. 286

**52**. There are 4 letters and 4 addressed envelopes. In ho w many ways can all go to the wrong envelope? a. 9 b. c. 7 d. 24

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