

IEM KOLKATA
PERMUTATIONS AND COMBINATIONS

Instructor: Akash Bhattacharya

Q1) Mohan has 3 trousers and 2 shirts. How many different pairs of a shirt and trouser can he dress up with?

Q2) Shabnam has 2 school bags, 3 tiffin boxes and 2 water bottles. In how many ways can she carry these items?

Q3) A hall has 12 gates. In how many ways, can a man enter the hall through one gate and come out through a different gate?

- (a) 100 (b) 121 (c) 132 (d) 144

Q4) There are 25 students in a class with 15 boys and 10 girls. The class teacher selects either a boy or a girl for CR post of the class. In how many ways, the class teacher can make this selection?

- (a) 15 (b) 25 (c) 20 (d) 30

Q5) During a summer vacation, of 20 friends from a hostel, each wrote a letter to each of all others .The total numbers of letters written was?

- (a) 20 (b) 400 (c) 200 (d) 380

Q6) How many numbers of four digits can be formed with the digits 1,2,3,4 and 5?
(Repetition of digits is not allowed)

- (a) 110 (b) 120 (c) 140 (d) None

Q7) Find the number of permutations of the letters of the word **ALLAHABAD**?

Q8) In how many different ways can the letters of the word '**LEADING**' be arranged in such a way that the vowels always come together?

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

Q9) Find the number of different 8-letter arrangements that can be made from the letters of the word '**DAUGHTER**' so that

- (i) all vowels occur together (ii) all vowels do not occur together

Q10) In how many ways, 3 books can be given away to 7 boys, when each boy is eligible for any of the books?

- (a) 49 (b) 343 (c) 249 (d) None

Q11) How many words can be formed from the word **CHOCOLATE**, where the first letter starts with a vowel.