

## PERMUTATIONS AND COMBINATIONS

- In how many different ways can the letters of the word SMART be arranged?  
(a) 25                      (b) 60  
(c) 180                      (d) 200                      (e) None of these
- In how many different ways can the letters of the word CREATE be arranged?  
(a) 25                      (b) 36  
(c) 360                      (d) 720                      (e) None of these
- In how many different ways can the letters of the word ORRICES be arranged ?  
(a) 2520                      (b) 5040  
(c) 1850                      (d) 1680                      (e) None of these
- In how many different ways can the letters of the word BANANA be arranged?  
(a) 60                      (b) 120  
(c) 360                      (d) 720                      (e) None of these
- In how many different ways can the letters of the word WEDDING be arranged?  
(a) 2500                      (b) 2520  
(c) 5000                      (d) 5040                      (e) None of these
- In how many different ways can the letter of the word ENGINEERING be arranged?  
(a) 277200                      (b) 92400  
(c) 69300                      (d) 23100                      (e) None of these
- In how many different ways can the letters of the word ALLAHABAD be arranged ?  
(a) 3780                      (b) 1890  
(c) 7560                      (d) 2520                      (e) None of these
- In how many different ways can the letters of the word AUCTION be arranged in such a way that the vowels always come together?  
(a) 30                      (b) 48  
(c) 144                      (d) 576                      (e) None of these
- In how many different ways can the letters of the word SOFTWARE be arranged in such a way that the vowels always come together?  
(a) 120                      (b) 360  
(c) 1440                      (d) 13440                      (e) None of these
- In how many different ways can the letters of the word BANKING be arranged in such a way that the vowels always come together?  
(a) 120                      (b) 240  
(c) 360                      (d) 540                      (e) None of these
- In how many different ways can the letters of the word CAPITAL be arranged so that the vowels always come together?  
(a) 120                      (b) 360  
(c) 720                      (d) 840                      (e) None of these

- 12.** In how many different ways can the letters of the word CORPORATION be arranged so that the vowels always come together?  
 (a) 810 (b) 1440  
 (c) 2880 (d) 50400 (e) 5760
- 13.** Out of 5 men and 2 women, a committee of three members is to be formed so that it has 1 woman and 2 men. In how many different ways can it be done?  
 (a) 10 (b) 20  
 (c) 23 (d) 30 (e) None of these
- 14.** Out of 5 women and 4 men, a committee of three members is to be formed in such a way that at least one member is a woman. In how many different ways can it be done?  
 (a) 76 (b) 80  
 (c) 84 (d) 96 (e) None of these
- 15.** A committee of 5 members is to be formed out of 3 trainees, 4 professors and 6 research associates. In how many different ways can this be done, if the committee should have 4 professors and 1 research associate or all 3 trainees and 2 professors?  
 (a) 12 (b) 13  
 (c) 24 (d) 52 (e) None of these
- 16.** A committee of 5 members is to be formed out of 3 trainees, 4 professors and 6 research associates. In how many different ways can this be done if the committee should have 2 trainees and 3 research associates?  
 (a) 15 (b) 45  
 (c) 60 (d) 9 (e) None of these
- 17.** A committee of 5 members is to be formed by selecting out of 4 men and 5 women. In how many different ways the committee can be formed if it should have 2 men and 3 women?  
 (a) 16 (b) 36  
 (c) 45 (d) 60 (e) None of these
- 18.** A committee of 5 members is to be formed by selecting out of 4 men and 5 women. In how many different ways the committee can be formed if it should have at least 1 men?  
 (a) 115 (b) 120  
 (c) 125 (d) 140 (e) None of these
- 19.** In how many ways a committee consisting of 5 men and 6 women can be formed from 8 men and 10 women?  
 (a) 266 (b) 5040  
 (c) 11760 (d) 86400 (e) None of these
- 20.** A select group of 4 is to be formed from 8 men and 6 women in such a way that the group must have at least 1 woman. In how many different ways can it be done?  
 (a) 364 (b) 728  
 (c) 931 (d) 1001 (e) None of these
- 21.** A box contains 2 white, 3 black and 4 red balls. In how many ways can 3 balls be drawn from the box, if at least 1 black ball is to be included in the draw?  
 (a) 32 (b) 48  
 (c) 64 (d) 96 (e) None of these
- 22.** In how many ways can a group of 5 men and 2 women be made out of a total of 7 men and 3 women?  
 (a) 45 (b) 63  
 (c) 90 (d) 126 (e) None of these