1. There are 20 buses from Pune to Mumbai and 15 buses to return. If a person wants to travel from Pune to Mumbai and back, how many options he has to board the buses?

2. How many teams of 4 people are possible from a group of 11 people?

3. 10 points lie on circumference of a circle. How many cyclic quadrilaterals can be drawn by using these points?

4. In a box, there are 5 black pens, 3 white pens and 4 red pens. In how many ways can 2 black pens, 2 white pens and 2 red pens can be chosen?

5. How many teams of 3 boys and 2 girls can be formed from 7 boys and 6 girls?

6. A question paper consists of 8 questions divided into two parts A and B. Each part contains four questions. A candidate is required to attempt total four questions. In how many ways can the candidate select the questions?

7. A question paper consists of 8 questions divided into two parts A and B. Each part contains four questions. A candidate is required to attempt total four questions such that he must attempt at least one question from each part. In how many ways can the candidate select the questions?

8. A question paper consists of 8 questions divided into two parts A and B. Each part contains four questions. A candidate is required to attempt total four questions such that he can attempt at most 2 questions from any part. In how many ways can the candidate select the questions?

9. A question paper consists of 10 questions divided into two parts A and B. Each part contains five questions. A candidate is required to attempt six questions in all of which at least 2 should be from part A and at least 2 from part B. In how many ways can the candidate select the questions?

10. A committee of 5 persons is to be formed from 6 men and 4 women. In how many ways can this be done such that at least 2 women are included?

11. A committee of 5 persons is to be formed from 6 men and 4 women. In how many ways can this be done such that at most 2 women are included?

12. There are 15 cricket players out of which 6 are bowlers and 2 are wicketkeepers. How many teams of 11 players can be formed such that it contains 4 bowlers and 1 wicketkeeper?

13. There are 15 cricket players out of which 6 are bowlers and 2 are wicketkeepers. How many teams of 11 players can be formed such that it contains at least 4 bowlers and 1 wicketkeeper?

14. How many handshakes are possible amongst 20 people if each one of them shakes hands with every other person?

15. How many lines are possible using 12 points if exactly 4 of them are collinear?

16. In how ways many 8 people can be seated in a row?

17. In how many ways 6 people can be seated in a row such that two particular persons always occupy extreme chairs?

18. How many photographs of 5 out of 7 family members can be taken such that a particular member is always included in the photo?

19. There are 8 chairs numbered 1 to 8. There are 8 people namely A, B, C, D and so on up to H. In how many ways these 8 people can be seated on 8 chairs such that B, C, D and F must sit on even numbered chairs?

20. In how many ways letters of the word CRUSHING can be arranged such that the arrangements start with R and end with I?

21. In how many ways letters of the word IMPROVE can be arranged such that vowels occupy odd places?

22. How many four digit numbers can be formed using digits 1 to 7 if repetition is not allowed?

23. How many five digit even numbers can be formed using the digits 2, 5, 6, 3, 1, 8 and 9 such that digits do not repeat?

24. How many numbers between 99 and 9999 are possible which start with 3?

25. How many arrangements of letters of the word FOREVER are possible?

26. How many arrangements of letters of the word MILLION start with L?

27. How many arrangements of letters of the word ADDRESS start with a consonant?

28. How many arrangements of letters of the word SOLITUDE contain all vowels together?

29. There are 4 CAs, 5 Engineers and 3 Artists. If all of them are to be seated in a row, how many arrangements contains all people from same field sitting together?

30. How many numbers can be formed using the digits 3, 5, 9, 2, 1, 3, 5, 2?

31. How many arrangements of letters of the word COLLEGE contain all vowels together?

32. How many arrangements of letters of the word LEADING contain all vowels together?

33. How many arrangements of letters of the word COMMITTEE contain no two vowels together?

34. In how many ways 4 boys and 3 girls can be seated in a row such that no two girls sit together?

35. How many integers, between 999 and 4001 can be formed with the digits 0, 1, 2, 3 and 4, if repetition of digits is allowed?

36. How many four digit numbers divisible by 4 are possible using first 5 natural numbers, if repetition of digits is not allowed?

37. How many four digit numbers divisible by 4 are possible using first 5 natural numbers, if repetition of digits is allowed?

38. When three fair dice are rolled simultaneously, in how many outcomes at least one of the dice will show 3?

39. There are 5 points on line segment AB and 6 points on line segment BC, excluding A, B and C. How many triangles are formed using these points excluding A, B and C?

40. Find the number of sides of a polygon which has 44 diagonals.