**Permutation and combination**

**1. How many numbers between 400 and 1000 can be made with the digits 2,3,4,5,6 and 0 ?**

a)60 b)70 c)40 d) 120

**2. How many even numbers of four digits can be formed with the digits 0,1,2,3,4 ,5 and 6; no digit being used more than once?**

a) 300 b) 140 c) 120 d) 420

**3. How many number of four digits greater than 2300 can be formed with the digits 0,1,2,3,4,5 and 6: no digit being repeated in any number?**

a) 480 b) 560 c) 660 d) 580

**4. In how many ways 3 prizes can be given away to 7 boys when each boy is eligible for any of the prizes.**

a) 243 b) 343 c) 433 d) 2187

**5. A telegraph has 5 arms and each arm is capable of 4 distinct positions, including the position of rest. What is the total number of signals that can be made?**

a) 1023 b) 1024 c) 3124 d) 3125

**6. How many numbers greater than 1000 but not greater than 4000 can be formed with the digits 0,1, 2, 3,4 repetition of digits being allowed.**

a) 357 b) 375 c) 135 d) None of these

**7. In how many ways can 8 I.A. and 6 I.Sc. students be seated in a row so that no two of the I. Sc. Students may sit together?**

a) b)

c) d) None of these

**8. In a class of 12 students, there are 4 girls. In how many different ways can they be arranged in a row such that no two of the three girls are consecutive?**

a) b)

c) d)

**9. In how many ways can 12 examination papers be arranged so that the best and the worst papers never come together.**

a)10 11 b) 12 11

c) 10 12 d)10

**10. There are 3 boys and 2 girls. In how many ways can they be seated in a row so that all the three boys do not sit together**.

a) 72 b)42 c)172 d)190

**11. In how many ways 3 boys and 3 girls can be seated in a row so that boys and girls are alternate?**

a) 9 b)36

c)72 d)Data indadequate

**12.** **In how many ways 10 boys and 9 girls can be seated in a row so that boys and girls are alternate?**

a) 10 b)

c)9 d)Data indadequate

**13. Find the number of ways in which 7 different beads can be arranged to form a necklace.**

a) b)

c) d) None of these

**14. In how many ways can the letters of the word ‘civilization’ be rearranged?**

a) b) – 1

c) -1 d) None of these

**15. In how many ways can the letter of the word ‘Director’ be arranged so that the three vowels are never together?**

a) 1800 b) 18000

c) 16000 d) 1600

**16. How many different letter arrangements can be made from the letters of the word RECOVER?**

a)1210 b)5040

c)1260 d)1200

**17. Find the no. of triangles formed by joining the vertices of a polygon of 12 sides.**

a) 120 b) 220 c)150 d) 200

**18. Find the no. of diagonals of a hexagon**.

a) 9 b)18 c)12 d)15

**19. There are 4 members in a delegation which is to be sent abroad. The total no. of members is 8. In how many ways can the selection be made so that a particular member is always (i)**

**Included (ii) excluded?**

a) 35, 35 b)35, 40

c)36, 32 d) None of these

**20. In an examination a minimum is to be secured in each of 3 subjects for a pass. In how many ways can a student fail?**

a)8 b)9

c)7 d) Data inadequate

**21. In an examination a minimum is to be secured in each of 6 subjects for a pass. In how many ways can a student fail?**

a)65 b) 63

c)64 d)Can’t be determined

**22. There are 7 questions in a question paper . In how many ways can a student solve one or more questions?**

a) 128 b)63 c)129 d)127

**23. From 5 officers and 7 jawans in how many ways can 4 be chosen to include exactly 2 officers?**

a) 210 b)120 c)200 d)105

**24.**  **From 6 officers and 10 jawans in how many ways can 5 be chosen to include exactly 1 officer?**

a) 1290 b)1160

c)1260 d)None of these

**25.**  **From 8 officers and 12 jawans in how many ways can 7 be chosen to include exactly 3 officers ?**

a) 27720 b)27270

c)26620 d)None of these

**26. In how many ways 12 different things can be divided in three sets each having 4 things.**

a) b)

c) d)

**27. In how many ways 15 different things can be divided equally among 5 persons?**

a b)

c) d)

**28**. **In how many ways 18 different things can be divided equally among 6 persons?**

a b)

c) d)

**29.** **In how many ways 20 different things can be divided equally among 4 persons?**

a b)

c) d) None of these

**30. 4 students appear in an examination. In how many ways can the result be announced?**

a)15 b)16

c)17 d)None of these

**31. 7 students appear in an examination. In how many ways can the result be announced?**

a) 126 b)127

c)129 d)128

**32. 4 matches are to be played in a chess tournament. In how many ways can their results be decided?**

a)81 b)16

c)27 d)64

**33. 5 matches are to be played in a chess tournament. In how many ways can their results be decided?**

a)343 b)243

c)128 d)None of these

**34. From 4 officers and 8 jawans in how many ways can be 6 chosen to include at least one officer.**

a)896 b)986

c)886 d)996

**35. In how many ways can 10 examination papers be arranged so that the best and the worst papers never come together.**

a)9 b)8

c)8 d)8