GS FOUNDATION (2023-24) WORKSHEET 09
&
CSAT FOUNDATION 1.0 (2023-24) WORKSHEET 10
COMBINATORICS

1. What is the number of anagrams possible for ‘CONSTITUTE’?
A. 10!
B. 604800
C. 7!/(7-3)!
D. 589200

2. In how many different ways can the letters of the word 'CORPORATION' be arranged so that the vowels always come together?
A. 810
B. 14400
C. 2880
D. 50400

3. Out of 7 consonants and 4 vowels, how many words of 3 consonants and 2 vowels can be formed?
A. 210
B. 1050
C. 25200
D. 21400

4. In a group of 6 boys and 4 girls, four children are to be selected. In how many different ways can they be selected such that at least one boy should be there?
A. 159
B. 194
C. 205
D. 209

5. 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

6. 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. 63
B. 90
C. 126
D. 45

7. Five people out of whom only two can drive are to be seated in a five-seater car with two seats in front and three in the rear. The people who know driving don't sit together. Only someone who knows driving can sit on the driver's seat. Find the number of ways the five people can be seated.

A. 40
B. 60
C. 48
D. 36

8. How many numbers are there in between 100 and 1000 such that exactly one of their digits is 3 if repetition is not allowed?

A. 100
B. 200
C. 300
D. 525

9. There are 45 games in total in a competition. Many teams took part in the competition and each of them must play one with the other teams. In total how many teams took part in the competition?

A. 5
B. 10
C. 15
D. 20

10. In how many ways can you select a diamond or a king from a pack of cards?

A. 16
B. 20
C. 24
D. 8

11. A circular table has 6 chairs, out of this 6, five are identical. In how many ways can the six people be arranged on these chairs?

A. 120
B. 720
C. 360
D. 60

12. There are three dice each of them having faces with a number from 1 to 6. These dices are rolled. Find the number of possible outcomes such that at least one of the dice shows the number 2.

A. 36
B. 91
C. 81
D. 116

13. Four letters are selected from the word “CAPAME” and are rearranged to form four letter words. How many words can be formed?
A. 120
B. 192
C. 180
D. 168

14. A boy is playing a Snake & Ladder game; he is on 91 and has to get to 100 to complete the game. There is a snake on 93 and 96. In how many ways he can complete the game, if he doesn’t want to roll the dice more than three times.
A. 20
B. 15
C. 16
D. 18

15. A chess board has rows and columns marked A to H and 1-8. Aman has a knight and a rook which he has to place on the board such that the two pieces are not in same row or column, what is total number of ways he can place the two pieces?
A. 3072
B. 3136
C. 6272
D. 6144

16. How many 3-digit numbers divisible by 3 can be formed from digits 0,2,4,5,6 if repetition of digits is not allowed?
A. 24
B. 20
C. 16
D. 12

17. How many factors of $36 \times 280 \times 98 \times 120 \times 108 \times 63$ are multiple of 84?
A. 716
B. 474
C. 981
D. 864

18. How many ways are there to sit 6 people A, B, C, D, E, F on 6 chairs if A and B don’t sit together?
A. 240
B. 360
C. 480
D. 600

Solutions:

1. B
2. D
3. C
4. D
5. C
6. A
7. D
8. B
9. B
10. A
11. B
12. C
13. B
14. C
15. B
16. C
17. D
18. C