Permutation

Type 1:- Regular Type

Que: - In how many different ways can the letters of the following words be arranged.

1. MOTHER
2. PUNE
3. APPLE
4. GOOGLE
5. GOGGLE
6. MISSILE

Type 2:- Vowels always come together

Que: - In how many different ways can the letters of the following words be arranged, in such a way that vowels always come together.

1. ENGLISH
2. MONDAY
3. SAMSUNG
4. DIGITAL
5. COMPUTER
6. SISTER

Type 3:- Consonants always come together

Que: - In how many different ways can the letters of the following words be arranged, in such a way that vowels always come together.

1. PENCIL
2. BANKING
3. OFFICER
4. PHYSICS
5. TUESDAY
6. GINGLE

Type 4:- Vowels do not come together

Que: - In how many different ways can the letters of the following words be arranged, in such a way that vowels do not come together.

1. BRAZIL
2. FATHER
3. WEDNESDAY
4. MOZZILLA
5. PASSION
6. MACHINE

Type 5:- Consonants do not come together

Que: - In how many different ways can the letters of the following words be arranged, in such a way that Consonant's do not come together.

1. SIGNATURE
2. EGYPT
3. LEADER
4. SUCCESS
5. SYSTEM
6. RUMOUR

Type 6:- No two vowels come together

Que:- In how many different ways can the letters of the following words be arranged, in such a way that no two vowels come together.

1. WINNER
2. PROFESSOR
3. TEACHER
4. FRIDAY
5. KERALA
6. ONLINE

Type 7:- Odd positions and Even positions

Que: - In how many different ways can the letters of the following words be arranged, in such a way that vowels always come on even positions.

1. DETAIL
2. DETAILS
3. MUMBAI
4. TRIANGLE
5. DAUGHTER
6. PALACE

Type 8:- Repetitions allowed or not allowed

1. PEN
2. BOOK
3. CRYSTEL
4. SQUARE
5. ERAZER
6. DIAGONAL

Type 9:- Miscellaneous

1. **PLAYGROUND**
   A. Find the different number of words which starts with 'Y'?
   B. Find the different number of words which starts with 'Y' and ends with 'G '?
   C. Find the different number of words which ends with vowel?
   D. Find the different number of words which starts vowel and ends with consonant?
   E. Find the different number of words where no two vowels come together?
   F. Find the different number of words where vowels occupy odd places?
2. **OPERATION**
   A. Find the different number of words which starts with vowel?
   B. Find the different number of words which starts and ends with same letter'?
   C. Find the different number of words which starts with 'O'?
   D. Find the different number of words which starts with consonant'?
   E. Find the different number of words vowels do not come together?
   F. Find the different number of words vowels occupy even places?

Type 10:- Number Based Questions

1. The numbers are given are as **2, 3, 5, 6, 7 and 9**. Answer the following questions given below.
   A. How many 2 digits numbers are formed?
   B. How many 3 digits numbers are formed?
   C. How many 4 digits numbers are formed?
   D. How many 6 digits numbers are formed?
   E. How many 3 digits numbers are formed which are divisible by 5?
   F. How many 3 digits numbers are formed which are divisible by 2?
   G. How many 4 digits numbers are formed which are less than 6000?

Combination

Que 1. A cricket team will chose from 15 players. Find the no of ways for selection.

Que 2. A committee consisting of 3 members which will choose from 3 men and 7 women. Find the no of ways for selection.

Que 3. Find the no of diagonals of a polygon with 8 sides.

Que 4. How many triangles can be form by joining the vertices of pentagon?

Que 5. In how many ways a committee consisting of 5 men and 6 women can be formed from 8 Men and 10 women?

Que 6. A group contains 8 men and 10 women

a) 3 members were chosen which contains 2 men and a women
b) 3 members were chosen which contains all were men or all were women
c) 3 members were chosen which contains at least 1 men

Que 7. A group contains 6 men and 5 women

a) 4 members were choose which contains 2 men and 2 women
b) 3 members were choose which contains all were men or all were women
c) 3 members were choose which contains at least 1 women
d) 3 members were choose which contains at most 2 women

Probability

$$\text{Probability} = \frac{\text{The number of wanted outcomes}}{\text{The number of possible outcomes}}$$

Que 1. A coin is tossed find the probability for getting a head'

Que 2. Two coins are tossed find the probability for getting at least two head.

Que 3. Two coins are tossed find the probability for getting exactly two heads.

Que 4. Three coins are tossed find the probability for getting at least two heads.

Que 5. A dice is thrown find the probability for getting multiple of two.

Que 6. Two dice are thrown find the probability

a) The sum on the both the faces is equal to 4.
b) The sum on the both the faces is less than 2.
c) The sum on the both the faces is a prime no and less than 8
d) The sum on the both the faces is less than 13.
e) For getting doublet

Que 7.A card is drawn at random from a pack of 52 playing cards find the probability for getting

a) A Three of diamond
b) A Face card
c) A king
d) A king or a queen
e) A king or a black card

Que 8.Two cards are drawn at random from a pack of 52 playing cards find the probability for getting

a) A king and a queen
b) Both the cards are of the black color
c) Both the cards are either Kings or queens
d) A spade and a heart
e) Both are either red or both are red cards
f) A face card and a numbered card
g) A queen of club and A king of heart

Que 9.A Box contain 6 Black and 8 white balls

a) 1 Ball is drawn at random. Find the probability for white ball.
b) 2 Balls are drawn at random find the probability for getting a black and a white ball
c) 2 Balls are drawn at random find the probability that they are of the same color
d) 2 Balls are drawn at random find the probability that they are not of the same color
e) 3 Balls are drawn at random find the probability that all are either black balls or white balls
f) 3 Balls are drawn at random find the probability that 1 is a black ball and other 2 are white balls
g) 3 balls are drawn at random find the probability for at least 1 is black ball

Que 10.A box contains 20 electric bulbs out of which 4 are defective, 2 bulbs are choose at random from this box. Find the probability that at least one of these is defective.

Que 11. In class 30% of the students offered English 20% offered Hindi and 10% offered both. If a student is selected at random. What is the probability that he has offered English or Hindi?

Que 12 .A speaks truth in 75% cases and B in 80% in cases. In what % of the cases are they likely to contradict each other narrating the same incident?

Que 13. A man and his wife appear in a interview for 2 vacancies in the same post. The probability of husband selection is 1/7 and that of the wife's selection is 1/5. What is the probability of that only one of them is selected?

Memory based Questions:-

Que: A basket contains 3 Red and 4 green balls. If 4 balls are drawn at random from the basket what is the prob. That 2 are red and 2 are green? (**18/35)**

Que : A Basket contains 7 white and 3 black balls , 2 balls drawn at random one another without replacement, Find the probability that balls are drawn are black.

Que: An Urn contains 6 red, 4 blue, 2 green and 3 yellow balls.

- **a)** if 2 balls drawn at random what is the probability that both are red.(**1/7)**
- **b)** If 3 Balls drawn at random what is the probability that 2 are blue and 1 is yellow.(**18/455)**
- **c)** If 4 balls drawn at random what is the probability that at least 1 is blue.(**69/91)**
- **d)** If 2 Balls are picked at random what is probability. That either both are green or both are yellow.(**4/105**)
- **e)** If 4 Balls are picked at random what is the probability that 1 is green,2 are blue and 1 is red**.(24/455**)

Que: A Basket Contains 4 Red, 5 Blue, 3 Green Balls

- **a)** If 2 balls are drawn at random what is the probability that both are red.(**1/11)**
- **b)** If 3 balls are drawn at random what is the probability that at least 1 is blue.(**37/44)**
- **c)** If 3 balls are drawn at random what is the probability that either all are green all are red.(**1/44)**

Home Assignments

1. A bag contains 2 yellow, 3 green and 2 blue balls. Two balls are drawn at random. What is the probability that none of the balls drawn is blue?

2. 3 balls are drawn randomly from a bag contains 3 black, 5 red and 4 blue balls. What is the probability that the balls drawn contain balls of different colors?

3. A card is randomly drawn from a deck of 52 cards. What is the probability getting a five of Spade or Club?

4. John and Dani go for an interview for two vacancies. The probability for the selection of John is 1/3 and whereas the probability for the selection of Dani is 1/5. What is the probability that none of them are selected?

5. A letter is randomly taken from English alphabets. What is the probability that the letter selected is not a vowel?

6. A letter is chosen at random from the word 'ASSASSINATION'. What is the probability that it is a vowel?

7. Tickets numbered 1 to 20 are mixed up and then a ticket is drawn at random. What is the probability that the ticket drawn has a number which is a multiple of 3 or 5?

8. One ball is picked up randomly from a bag containing 8 yellow, 7 blue and 6 black balls. What is the probability that it is neither yellow nor black?

9. There are 10 prizes and 25 blanks in a lottery. If John has taken a lottery, what is the probability for him to get a prize?

10. Six dice are tossed together. What is the probability of getting the same face in all the dice?