

Permutations & Combinations

MCQ

- 1 Number of arrangements of the word "DELHI" which start with H are :
(a)5! (b)3! (c)4! (d)6!
- 2 If $C(12, r) = C(12, m)$ then :
(a) $r = 12 + m$ (b) $m = 12 + r$ (c) $r + m = 12$ (d)none of these
- 3 Value of $P(12, 0)$ is :
(a)12! (b)0 (c)11! (d)1
- 4 Value of $C(16, 16)$ is equal to :
(a)1 (b)16! (c) $\frac{16!}{4!}$ (d)0
- 5 Number of different signals which can be generated using 5 different flags taking all at a time is :
(a)720 (b)120 (c)24 (d)625
- 6 $4! + 3!$ is equal to :
(a)7! (b)5! (c)30 (d)32
- 7 Number of diagonals in a regular octagon are :
(a)20 (b)28 (c)16 (d)32
- 8 Number of teams of 7 players each, which can be selected from 9 players are :
(a)72 (b)35 (c)48 (d)36
- 9 Total number of ways in which "WAYS" can be written are :
(a)22 (b)24 (c)30 (d)34
- 10 Arithmetic mean between 8 and 16 is :
(a)8 (b)12 (c)16 (d)24

2 & 4 Marks Questions

1. Find the number of ways in which the following words can be written so that vowels do not occur together
 - (i) MATHEMATICS
 - (ii) DAUGHTER
 - (iii) ALLAHABAD
 - (iv) MISSISSIPPI
 - (v) EQUATION
2. If $P(5, r) = 2P(6, r - 1)$ then find r .
3. Find the number of ways of choosing 4 cards from a pack of 52 cards . In how many of them
 - (i) 4 cards are of the same suit ?
 - (ii) two are red and two are black cards ?
4. Find n and r if $C(n, r - 1) : C(n, r) : C(n, r + 1) = 5 : 4 : 2$.
5. A group consists of 4 girls and 7 boys. In how many ways can a team of 5 members can be selected if the team has :
 - (i) no girl ?

- (ii) at least one boy and one girl ?
 - (iii) at least 3 girls ?
6. Find the number of ways of selecting 9 balls from 6 red, 5 white and 5 blue balls if each selection consists of 3 balls of each colour.
 7. Find the number of diagonals of 12 sided polygon.
 8. Find the number of handshakes in a party which consists of 50 persons.
 9. How many different selections of 4 books can be made from 10 different books if
 - (i) there is no restriction ?
 - (ii) two particular books are always selected ?
 - (iii) two particular books are never selected ?

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