Combinations Ex 17.2 Q24

There are 5 boys and 4 girls.
The team consists of 3 boys and 3 girls.

Number of ways to from the leom

$$= {}^5C_3 \times {}^4C_3$$

$$= \frac{5!}{3!2!} \times \frac{4!}{3!}$$

$$= \frac{5 \times 4}{2} \times 4$$

$$= 40$$

Number of ways = 40

Combinations Ex 17.2 Q25

There are 6 red balls, 5 white balls and 5 blue balls.

Number of ways to select 9 balls consisting of 3 balls of each colour.

= (3 red out of 6 red) and
(3 white out of 5 white) and
(3 blue out of 5 blue balls)

$$= {}^6C_3 \times {}^5C_3 \times {}^5C_3$$

$$= \frac{6 \times 5 \times 4}{3 \times 2 \times 1} \times \frac{5 \times 4}{2} \times \frac{5 \times 4}{2}$$

$$= 2000$$

Required Number of ways = 2000

Combinations Ex 17.2 Q26

Out of 52 cards 4 are ace and
and 48 are Non-ace.

Number of ways to select 5 cards with exactly one ace.

= (one ace out of 4 ace) and
(4 non-ace out of 48 Non-ace)

$$= {}^4C_1 \times {}^{48}C_4$$

$$= 4 \times \frac{48 \times 47 \times 46 \times 45}{4 \times 3 \times 2 \times 1}$$

$$= 778320$$

Required Number of ways = 778320

Combinations Ex 17.2 Q27

There are total 5 bowlers and 12 batsman are available to select from.

Number of ways to select a team of 11 that includes exactly 4 bowlers.

= (7 batsman out of 12 batsman) and
(4 bowlers out of 5 bowlers)

$= {}^{12}C_7 \times {}^{5}C_4$

$= \frac{12 \times 11 \times 10 \times 9 \times 8}{5 \times 4 \times 3 \times 2 \times 1} \times 5$

$= 3960$

Required number of ways = 3960

Combinations Ex 17.2 Q28

Bag contains 5 black and 6 red balls.

Number of ways to select 2 black balls out of 5 black and 3 red balls out of 6 red balls.

$= {}^{5}C_2 \times {}^{6}C_3$

$= \frac{5 \times 4}{2} \times \frac{6 \times 5 \times 4}{3 \times 2}$

$= 200$

Required number of ways = 200

********** END **********