Related Questions with Solutions

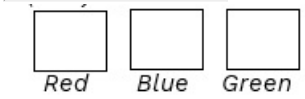
Questions

Quetion: 01

Tom has 15 ping-pong balls each uniquely numbered from 1 to 15. He also has a red box, a blue box, and a green box. Suppose
now that Tom has placed 5 ping-pong balls in each box. How many ways can he choose 5 balls from the three boxes so that he
chooses at least one from each box?

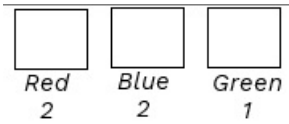
Solutions

Solution: 01



Balls and boxes are different.

Case I:

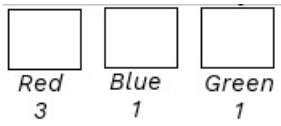


No. of ways $= {}^5C_2 \times {}^5C_2 \times {}^5C_1 = 500$

Now, arrangement of $2, 2, 1$ is $\frac{3!}{2!} = 3$

$\therefore$ Total number of ways = 500 × 3 = 1500

Case II:



No. of ways $= {}^5C_3 \times {}^5C_1 \times {}^5C_1 = 250$

Now, arrangement of $3, 1, 1$ is $\frac{3!}{2!} = 3$

$\therefore$ Total number of ways = 250 × 3 = 750

Hence, required number of ways = 1500 + 750
= 2250

Correct Options

Answer:01

Correct Answer: 2250