A box contains 15 green and 10 yellow balls. If 10 balls are randomly drawn, one-by-one, with replacement, then the variance of the number of green balls drawn is

A $\frac{12}{5}$

B 6

C 4

D $\frac{6}{25}$

Correct option is A)

We can see that the Probability of getting a green ball is $=$

$$\frac{\text{Favourable Events}}{\text{Total Number of balls}} = \frac{15}{25}$$

Similarly, probability of getting a Yellow ball $= \frac{10}{25}$

Let $p = \frac{15}{25}$ and $q = \frac{10}{25}$

As it follows binomial distribution, $n = 10$

$$\text{V ariance} = npq = 10 \times \frac{15}{25} \times \frac{10}{25}$$

$$= \frac{12}{5}$$