

# Assignment

## EE23010: Probability and Random Processes

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Question: A box contains 3 orange balls, 3 green balls and 2 blue balls. Three balls are drawn at random from the box without replacement. The probability of drawing 2 green balls and one blue ball is

1)  $\frac{3}{28}$

2)  $\frac{2}{21}$

3)  $\frac{1}{28}$

4)  $\frac{167}{168}$

**Solution:**

Let,

$$N = O + G + B \quad (1)$$

$$n = o + g + b \quad (2)$$

where O,G,B and o,g,b represents the number of Orange, Green and Blue balls respectively within N, n. Then

$$\Pr(o, g, b) = \frac{{}^OC_o {}^GC_g {}^BC_b}{{}^{O+G+B}C_{o+g+b}} \quad (3)$$

So, Probability of 2 Green and 1 blue ball,

$$\Pr(0, 2, 1) = \frac{{}^3C_0 {}^3C_2 {}^2C_1}{{}^8C_3} \quad (4)$$

$$= \frac{3}{28} \quad (5)$$

∴ Option (1) is correct.