② A basket contains 3 blue, 5 black and 3 red balls. If 3 balls are drawn at random what is the probability that all are black?

A) 2/11 B) 1/11 C) 3/11 D) 8/33

Ans:- Total no. of ball in basket = 3+5+3 = 11

No. of ways to draw 3 balls from 11 balls is given by = $n(n) = {}^{11}C_3 = \frac{11!}{3!(11-3)!}$

$= \frac{11!}{3! \times 8!}$

$= 165$

No. of ways to draw 3 black balls from 11 balls is given by = $n(n) = {}^{5}C_3 = \frac{5!}{3!(5-3)!}$

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

$= 10$

probability that 3 balls drawn at random are black is = $\frac{\text{No. of ways to draw 3 black ball}}{\text{No. of ways to draw 3 ball}}$

$= \frac{10}{165} = \frac{2}{33}$

$= 0.0606$

$= 6.06\%$