Exemplar Problem

Q. 76 Three persons A, B and C, fire at a target in turn, starting with A. Their probability of hitting the target are 0.4, 0.3 and 0.2, respectively. The probability of two hits is

(a) 0.024 (b) 0.188 (c) 0.336 (d) 0.452

Sol. *(b)* Here, $P(A) = 0.4, P(\bar{A}) = 0.6, P(B) = 0.3, P(\bar{B}) = 0.7,$
$P(C) = 0.2$ and $P(\bar{C}) = 0.8$

$\therefore$ Probability of two hits $= P_A \cdot P_B \cdot P_{\bar{C}} + P_A \cdot P_{\bar{B}} \cdot P_C + P_{\bar{A}} \cdot P_B \cdot P_C$
$= 0.4 \times 0.3 \times 0.8 + 0.4 \times 0.7 \times 0.2 + 0.6 \times 0.3 \times 0.2$
$= 0.096 + 0.056 + 0.036 = 0.188$