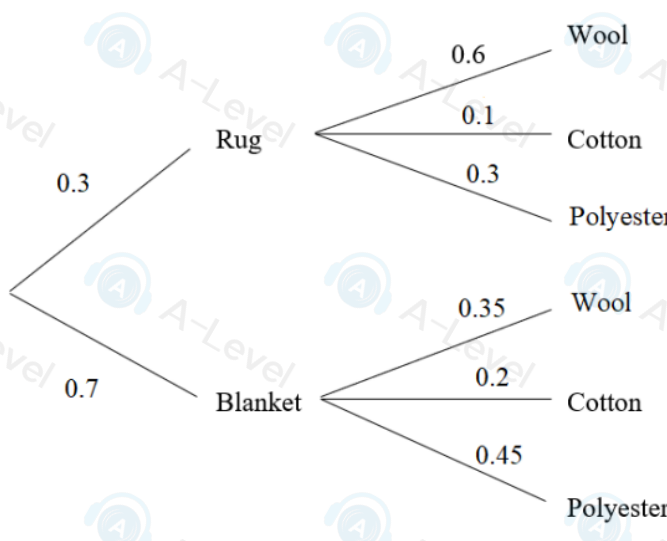


Question Number	Scheme	Marks
3 (a)	$1 - p, \frac{7}{8}$ and $\frac{9}{10}$ in the correct place on tree diagram	B1
		(1)
(b)	$\frac{1}{8}p + \frac{1}{10}(1-p) = 0.11$	M1 A1ft
	$p = \frac{2}{5}$	A1
		(3)
(c)	$\frac{2}{5} \times \frac{1}{8} = \frac{1}{20}$	M1 A1ft
		(2)
(d)	$P(Y12 R) = \frac{\frac{2}{5} \times \frac{7}{8}}{1 - 0.11}$ or $P(Y12 R) = \frac{\frac{2}{5} \times \frac{7}{8}}{\frac{2}{5} \times \frac{7}{8} + \frac{3}{5} \times \frac{9}{10}}$	M1
	$= \frac{35}{89}$	A1
		(2)
Notes		Total 8

Question	Scheme	Marks
6. (a)	$P(S) = 0.31 + p$, $P(D) = 0.35$, $P(S \cap D) = 0.14$ $(0.31 + p)(0.35) = 0.14$ oe $P(S) = 0.4$ or $0.31 + p = 0.4$ or $0.35p = 0.0315$ $p = \underline{0.09}$	M1 M1 A1 A1 (4)
(b)	$P(S \cup M \cup D) = 1$ so $q = 1 - (0.17 + 0.10 + 0.15 + 0.06 + 0.04) - p$ or $0.48 - p$ $q = \underline{0.39}$	M1 A1ft (2)
(c)(i)	$[P(D S \cap M) =] \frac{P(D \cap S \cap M)}{P(S \cap M)} = \frac{0.10}{0.27}$ $= \frac{10}{27}$ or awrt <u>0.370</u>	M1 A1
(ii)	$[P(D S' \cap M) =] \frac{P(D \cap S' \cap M)}{P(S' \cap M)} = \frac{0.15}{0.54}$ $= \frac{5}{18}$ or awrt <u>0.278</u>	M1 A1 (4)
(d)	27 order $S \cap M$ so expect $27 \times \frac{10}{27} D$ or 36 order $S' \cap M$ so expect $36 \times \frac{5}{18} D$ So expect <u>20 (desserts)</u>	M1 A1cao (2)
		[12]

Question Number	Scheme	Marks
5(a)(i)	$P(D) = \frac{200}{320} = \frac{5}{8}$ (or exact equivalent e.g. 0.625)	B1 (1)
(ii)	$P(D \cap X') = \frac{1}{2}$ oe	B1 (1)
(iii)	$P(D' \cup Z') = \frac{320 - 88}{320}; = \frac{29}{40} = 0.725$ o.e.	M1; A1 (2)
(b)	$P(Z D) = \frac{\frac{88}{320}}{\frac{200}{320}}; = \frac{88}{200}$ or $\frac{11}{25}$ or 0.44 oe	M1; A1 (2)
(c)	X and Y or X and Z or Y and Z (Allow X, Y etc)	B1 (1)
(d)	$P(D) \times P(X) = 0.625 \times 0.2$ or $\frac{5}{8} \times \frac{64}{320} = 0.125 = P(D \cap X)$ or $P(D X) = \frac{40}{64} = 0.625 = P(D)$ or $P(X D) = \frac{40}{200} = \frac{1}{5} = P(X) = \frac{24 + 40}{320}$ So yes they are independent	M1 A1 (2)
(e)(i)	A house that does not have a driveway but has exactly two cars	B1 (1)
(ii)	A house that has a driveway (with) fewer than two cars (oe)	B1 B1 (2)
		Total 12

Question Number	Scheme	Marks
3(a)		B1 B1
		(2)
(b) (i)	$P(W') = 0.3 \times (0.1 + 0.3) + 0.7 \times (0.2 + 0.45)$ or $P(W') = 1 - (0.3 \times 0.6 + 0.7 \times 0.35)$ $= \underline{\underline{0.575}}$	M1 A1
		(2)
(ii)	$P(B W') = \frac{P(B \cap W')}{P(W')} = \frac{0.7 \times (0.2 + 0.45)}{0.575}$	M1
	$= \frac{91}{115}$	A1
		(2)