1)

					Throughout this question isw any cancelling or changing to other forms, after correct answer seen. Do not accept ratio or worded forms.
(a)	0.4, 0.1 oe			1	
(b) (i)	1			1	
(ii)	0.7	oe	ft	1**ft**	**ft** their first three probabilities
(c) (i)	0.04	oe		1	
(ii)	0.03	oe	ft	2**ft**	**M1** for their 0.1 × 0.3
(iii)	0.12	oe	ft	3**ft**	**ft** their 0.1, their 0.4 and their **(c)(i)** **M2** for their 0.4 × their 0.1 + their 0.1 × their 0.4 + 0.2 × 0.2 (or their **(c)(i)**) **or M1** for any two of these products added or two of each
(d)	0.147	oe	ft	2**ft**	**ft** their **(b)(ii)**. **M1** for their 0.7 × their 0.7 × (1 – their 0.7)

2)

(a)	B and $\frac{2}{5}$, $\frac{1}{4}$ oe			1	Allow any reasonable explanation, e.g. 2 out of 5 greater than 1 out of 4.
(b) (i)	$\frac{1}{3},\frac{3}{4},\frac{2}{5},\frac{3}{5}$			4	**B1 B1 B1 B1**
(ii)	$\frac{6}{12}$ oe	cao	www 2	2	$\frac{1}{2}$, 0.5 etc **M1** for $\frac{2}{3}\times$their$\frac{3}{4}$ i.e. product of correct branches on their tree
(iii)	$\frac{42}{60}$ oe	cao	www2	2	$\frac{7}{10}$, 0.7 etc **M1** for their **(ii)** + their$\frac{1}{3}\times$their$\frac{3}{5}$ from their tree
(c)	$\frac{2}{60}$ oe	cao	www2	2	$\frac{1}{30}$, 0.0333(3……..) etc **M1** for $\left(\frac{2}{3}\times\frac{1}{4}\times 0\right)+\frac{1}{3}\times\frac{2}{5}\times\frac{1}{4}$

3)

2 (a)	Monday $\frac{3}{5}$, $\frac{2}{5}$	1		
	Tuesday $\frac{4}{7}$, $\frac{3}{7}$	1		
	$\frac{5}{7}$, $\frac{2}{7}$	1		
(b)	**(i)** $\frac{12}{35}$ oe cao	2	M1 $\frac{3}{5}\times\frac{4}{7}$ ft their tree	
	(ii) $\frac{9}{35}$ oe cao	2	M1 $\frac{3}{5}\times\frac{3}{7}$ ft their tree	
	(iii) $\frac{19}{35}$ oe	2 **ft**	ft their **(b)(ii)** + $\frac{10}{35}$ ft their tree throughout **(iii)** M1 for $\frac{2}{5}\times\frac{5}{7}$ + their **(b)(ii)** or $1-\frac{3}{5}\times\frac{4}{7}-\frac{2}{5}\times\frac{2}{7}$	
(c)	$\frac{34}{35}$ oe cao	3	ft their tree throughout **(iv)** M2 for $1-\frac{2}{5}\times\frac{2}{7}\times\frac{1}{4}\left(=1-\frac{1}{35}\right)$ (M1 for $\frac{2}{5}\times\frac{2}{7}\times\frac{1}{4}\left(=\frac{1}{35}\right)$) or M2 for $\frac{3}{5}+\frac{2}{5}\times\frac{5}{7}+\frac{2}{5}\times\frac{2}{7}\times\frac{3}{4}$ (M1 for any two of these)	

4)

7 (a)	Correct tree diagram.	5	B1 for labels flower and not flower First pair B1 for $\frac{7}{10}$ and $\frac{3}{10}$ B1 for next three branches after flowers B1 for clear labels for colours B1 for $\frac{2}{3}$, $\frac{1}{4}$ and $\frac{1}{12}$ in correct places If three branches at ends of both branches of first pair, lose final B, unless probabilities of 0 indicated.
(b)	$\frac{33}{40}$ o.e. (0.825) cao	3	M2 for $1-\frac{7}{10}\times\frac{1}{4}$ (M1 for $\frac{7}{10}\times\frac{1}{4}$ or $\frac{7}{10}\times\left(1-\frac{1}{4}\right)$) oe or M2 for $\frac{3}{10}+\frac{7}{10}\times\frac{2}{3}+\frac{7}{10}\times$ their $\frac{1}{12}$ or $\frac{3}{10}+\frac{7}{10}\times\frac{3}{4}$ oe
(c)	7 cao	2	M1 for $120\times\frac{7}{10}\times$ their $\frac{1}{12}$

5)

9			Accept fraction, %, dec equivalents (3sf or better when not exact) throughout but not ratio or words isw incorrect cancelling/conversion to other forms
	(a) **(i)** $\frac{1}{4}$ oe	**1**	
	(ii) 25 cao	**1ft**	ft their $\frac{1}{4} \times 100$ to 3sf or better or rounding or truncating to integer Not 25/100
	(b) $\frac{2}{12}$ oe cao	**2**	**M1** for $\frac{2}{4} \times \frac{1}{3}$ 0.167, 16.7%
	(c) $\frac{7}{20}$ oe cao	**3**	**M2** for $\frac{1}{4} \times \frac{4}{5} + \frac{3}{4} \times \frac{1}{5}$ or **M1** for $\frac{1}{4} \times \frac{4}{5}$ or $\frac{3}{4} \times \frac{1}{5}$ After 0, **SC1** for 7 correct in list (condone UU in addition)
	(d) $\frac{6}{60}$ oe cao	**2**	**M1** for $\frac{3}{5} \times \frac{2}{4} \times \frac{1}{3} \times \left(\frac{2}{2}\right)$