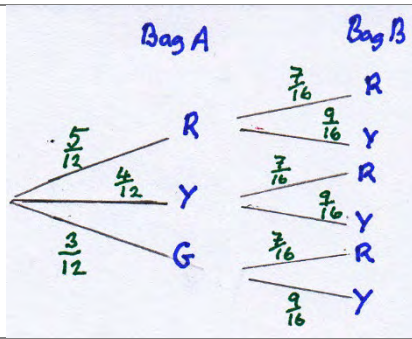


Question	Scheme	Marks	AOs
1(a)(i)	[Let $p =$ probability of yellow from bag B] $P(YY) = \frac{4}{12} \times p$	M1	1.1b
	$\left[\frac{4}{12} \times p = \frac{3}{16} \right]$ so $p = \frac{9}{16}$ (Allow 0.5625 and condone 0.563)	A1	1.1b
		(2)	
1(a)(ii)		B1	1.1b
		B1ft	1.1b
		(2)	
1(b)	e.g. $P(RY) + P(Y) + P(GY)$ or $1 - P(RR) - P(GR)$ or $P(\dots Y) + P(YR)$	M1	2.1
	$\frac{5}{12} \times \frac{9}{16} + \frac{4}{12} + \frac{3}{12} \times \frac{9}{16}$ or $1 - \left[\frac{5}{12} \times \frac{7}{16} + \frac{3}{12} \times \frac{7}{16} \right]$ or $\frac{9}{16} + \frac{1}{3} \times \frac{7}{16}$	A1ft	1.1b
	$= \frac{136}{192} = \frac{17}{24} = \underline{\underline{0.708\dot{3}}}$	A1	1.1b
		(3)	
1(c)	$[P(W X) =] \frac{P(W \cap X)}{P(X)}$ or $\frac{\frac{3}{12} \times \frac{9}{16}}{''(b)''}$	M1	1.1b
	$= \frac{27}{136}$	A1	1.1b
		(2)	

(9 marks)

Notes:

(a)(i)	M1	for a suitable expression (in their p) for the probability both are yellow.
	A1	for correct probability of yellow from B . Can be implied by values on tree diagram.
(a)(ii)	B1	for a correct 1 st column of tree diagram (probabilities from A)
	B1ft	(dep on M1 in (i)) for correct 2 nd column of tree diagram (ft their $\frac{9}{16}$ and $1 - \frac{9}{16}$)
(b)	M1	for selection of <u>all</u> correct cases (including the $1 -$ if required). Don't need $P(\dots$ may be implied by correct probability products seen (ft their tree diagram)
	A1ft	for a correct complete probability expression (ft their tree diagram) or awrt 0.708 Must see product pairs (for ft) <u>or</u> implied by correct values e.g. $\frac{15}{64} + \frac{7}{48} + \frac{3}{16} + \frac{9}{64}$ May see $1 - P(\bar{Y}\bar{Y})$ (M1) and $1 - \frac{2}{3} \times \frac{7}{16}$ (A1ft)
	A1	for an exact answer ...fraction needn't be simplified but decimal must have ... $\dot{3}$
(c)	M1	for a correct ratio of probabilities expression (in symbols) or ft their values seen
	A1	for an exact answer NB an answer of awrt 0.199 (0.198529411...) implies M1

Acc If scored 2nd A0 in (b) for 0.708 (or better) then allow A1 in (c) for awrt 0.199