PROBABILITY TREE

Pearson Edexcel – Monday 8 June 2020 - Paper 3 (Calculator) Higher Tier

1.

5	(a)	$\frac{1}{3},\frac{2}{3}$ $\frac{1}{3},\frac{2}{3},\frac{1}{3},\frac{2}{3}$	B2	six fully correct probabilities	Accept any equivalent fraction, decimal form 0.33(3...) and 0.66(6...) or 0.67 or percentage form 33(.3...)% and 66(.6...)% or 67%
			(B1	at least 2 correct probabilities)	
	(b)	$\frac{2}{9}$	M1	for $\frac{1}{3}\times\frac{2}{3}$ oe or ft probabilities from diagram	
			A1	for $\frac{2}{9}$ oe	Accept any equivalent fraction, decimal form 0.22(2...) or percentage form 22(.2...)%

Pearson Edexcel - Thursday 6 June 2019 - Paper 2 (Calculator) Higher Tier

2.

10	(a)	Diagram completed 0.85 0.15, 0.85, 0.15, 0.85	M1	for 1 – 0.15 (=0.85)	
			A1	fully correct diagram	
	(b)	0.2775	M1	for one correct product eg 0.15 × 0.15 (= 0.0225) or 0.15 × 0.85 (= 0.1275) or 0.85 × 0.85 (= 0.7225)	ft their diagram provided probabilities are less than 1
			M1	for a complete method eg "0.0225" + 2×"0.1275" **OR** 1 – "0.7225" oe	ft their diagram provided probabilities are less than 1
			A1	oe, eg $\frac{111}{400}$	

Pearson Edexcel - Thursday 7 June 2018 - Paper 2 (Calculator) Higher Tier

3.

15	(a)	0.55, 0.67, 0.33, 0.35, 0.65	B1	for 0.55 in correct position	Can be seen as fractions or percentages
			B1	for the branches for the second game correct	
	(b)	0.341	M1	for one correct product, eg 0.45 × "0.33" (=0.1485) **or** "0.55" × "0.35" (=0.1925) **or** 0.45 × "0.67" (=0.3015) **or** "0.55" × "0.65" (=0.3575)	Follow through acceptable for method marks from their tree in part (a) providing probabilities are less than 1. Accept fractional equivalents
			M1	for correct method eg (0.45 × "0.33") + ("0.55" × "0.35") **or** 1 – (0.45 × "0.67") – ("0.55" × "0.65")	
			A1	answer in range 0.34 – 0.341 oe	

Pearson Edexcel - Tuesday 12 June 2018 - Paper 3 (Calculator) Higher Tier

4.

4	Probabilities should sum to 1	C1	for stating that the probabilities should total 1 eg 0.25 should be 0.35	
	0.35 and 0.65 reversed	C1	for recognising that the 0.35 and 0.65 in the first branches for the 2nd throw should be reversed eg, "for the second throw, the probability it lands on 4 should be 0.65"	Can be shown on the diagram

Pearson Edexcel - Wednesday 8 November 2017 - Paper 3 (Calculator) Higher Tier

5.

12		48	M1	for 0.25×0.6 (= 0.15) or 0.75×0.4 (= 0.3)
			M1	for 0.25×0.6 (= 0.15) and 0.75×0.4 (= 0.3) or for 24 ÷ "0.15" (= 160)
			A1	cao

Pearson Edexcel - Thursday 8 June 2017 - Paper 2 (Calculator) Higher Tier

6.

12	(a)		comment	C1	for comment e.g. incorrect denominator for the 2nd student or probabilities for 2nd student do not add up to 1
	(b)		No (supported)	C1	for "no" with supporting evidence, e.g. probabilities should be multiplied together or 0.4 × 0.25

Pearson Edexcel - Specimen Papers Set 1 - Paper 2 (Calculator) Higher Tier

7.

11	(a)		0.49	M1	for 0.7 × 0.7
				A1	for 0.49 oe
	(b)		0.51	M1	for a correct process, eg. 1 – "0.49" or 0.7 × 0.3 + 0.3× 0.7 + 0.3 × 0.3
				A1	for 0.51 oe

Pearson Edexcel - Sample Paper 2 - (Calculator) Higher Tier

8.

12	(a)		0.4,0.6	B1	correctly placing probs for light A eg 0.4, 0.6
			0.3,0.7,0.8,0.2	B1	correctly placing probs for light B eg 0.3, 0.7, 0.8, 0.2
	(b)		B with correct	P1	(ft) eg 0.4 × 0.3 or 0.6 × 0.8 or 1−(0.28+0.12)
			probabilities	P1	both sets of correct probability calculations
				C1	Correct interpretation of results with correct comparable results

Pearson Edexcel - Thursday 26 May 2016 - Paper 1 (Non-Calculator) Higher Tier

9.

21	(a)		0.7 0.2 0.3 0.8 0.05 0.95	3	B1 for 0.2, 0.8 oe B1 for 0.7, 0.3 oe B1 for 0.05, 0.95 oe
	(b)		0.04	2	M1 for "0.8" × "0.05" A1 oe

Pearson Edexcel - Friday 7 November 2014 - Paper 2 (Calculator) Higher Tier

10.

19	(a)		0.3 0.3, 0.7, 0.3	2	B1 for 0.3 as first spin oe B1 for 0.3, 0.7, 0.3 in correct positions for second spin oe
	(b)		0.42	3	M1 for '0.3' × '0.7' or 0.7 × '0.3' (=0.21) M1 for '0.3' × '0.7 + 0.7 × '0.3 (OR M2 for $1 - 0.7^2 - 0.3^2$) A1 for 0.42 oe

Pearson Edexcel - Monday 9 June 2014 - Paper 1 (Non-Calculator) Higher Tier

11.

23	(a)		$\frac{3}{10}, \frac{6}{9}, \frac{3}{9}, \frac{7}{9}, \frac{2}{9}$	2	B1 for $\frac{3}{10}$ on LH yellow branch B1 for $\frac{6}{9}, \frac{3}{9}, \frac{7}{9}, \frac{2}{9}$ correct on tree diagram
	(b)		$\frac{48}{90}$	3	M1 for $\frac{7}{10} \times "\frac{3}{9}"$ or $"\frac{3}{10}" \times "\frac{7}{9}"$ or $"\frac{3}{10}" \times "\frac{2}{9}"$ M1 for $\frac{7}{10} \times "\frac{3}{9}" + "\frac{3}{10}" \times "\frac{7}{9}" + "\frac{3}{10}" \times "\frac{2}{9}"$ A1 for $\frac{48}{90}$ oe OR M1 for $\frac{7}{10} \times "\frac{6}{9}"$ M1 for $1 - \frac{7}{10} \times "\frac{6}{9}"$ A1 for $\frac{48}{90}$ oe

Pearson Edexcel - Monday 11 June 2012 - Paper 1 (Non-Calculator) Higher Tier

12.

19	(a)		0.6 0.7, 0.3, 0.7	2	B1 for 0.6 in correct position on tree diagram B1 for 0.7, 0.3, 0.7 in correct positions on tree diagram
	(b)	0.4 × 0.3 =	0.12	2	M1 for 0.4 × 0.3 oe **or** a complete alternative method ft from tree diagram A1 for 0.12 oe

Pearson Edexcel - Friday 2 March 2012 - Paper 3 (Non-Calculator) Higher Tier

13.

18	(a)	Correct probs.	Correct probs.	2	B1 $\frac{3}{8}$ on 1st branch B1 $\frac{3}{7}, \frac{5}{7}, \frac{2}{7}$ correctly placed
	(b)	RG, or GR $\frac{5}{8}\times\frac{3}{7}+\frac{3}{8}\times\frac{5}{7}$ **OR** A full sample space	$\frac{30}{56}$	3	M1 (ft from diag) for any one correct product M1 (ft from diag) for $'\frac{5}{8}\times\frac{3}{7}'+'\frac{3}{8}\times\frac{5}{7}'$ oe **or** $1-\left('\frac{5}{8}\times\frac{4}{7}'+'\frac{3}{8}\times\frac{2}{7}'\right)$ oe A1 $\frac{30}{56}$ oe **OR** M1 for a complete 8 by 8 or 8 by 7 table M1 for all RG and GR identified A1 $\frac{30}{56}$ oe **SC with replacement** M1 $\frac{5}{8}\times\frac{3}{8}$ M1 $\frac{5}{8}\times\frac{3}{8}+\frac{3}{8}\times\frac{5}{8}$ or $\frac{30}{64}$ A0 SC: If no working then B1 for $\frac{30}{64}$

	R	R	R	R	R	G	G	G
R	–					X	X	X
R		–				X	X	X
R			–			X	X	X
R				–		X	X	X
R					–	X	X	X
G	X	X	X	X	X	–		
G	X	X	X	X	X		–	
G	X	X	X	X	X			–

Pearson Edexcel - Wednesday 9 November 2011 - Paper 3 (Non-Calculator) Higher Tier

14.

22	(a)	Probability tree diagram	$\frac{6}{10}, \frac{4}{10}$ $\frac{8}{11}, \frac{3}{11}, \frac{7}{11}, \frac{4}{11}$	2	B1 $\frac{6}{10}, \frac{4}{10}$ oe on first two branches B1 $\frac{8}{11}, \frac{3}{11}, \frac{7}{11}, \frac{4}{11}$ on remaining branches
	(b)	$\frac{6}{10}\times\frac{8}{11}+\frac{4}{10}\times\frac{4}{11}$ $=\frac{48}{110}+\frac{16}{110}$ $=\frac{64}{110}=\frac{32}{55}$	$\frac{64}{110}$	4	M3 $\frac{6}{10}\times\frac{8}{11}+\frac{4}{10}\times\frac{4}{11}$ oe (M2 $\frac{6}{10}\times\frac{8}{11}$ or $\frac{4}{10}\times\frac{4}{11}$ oe or $\frac{6}{10}\times$ their $\frac{8}{11}+\frac{4}{10}\times$ their $\frac{4}{11}$ oe) (M1 their $\frac{6}{10}\times$ their $\frac{8}{11}$ or their $\frac{4}{10}\times$ their $\frac{4}{11}$ oe provided each component < 1) A1 $\frac{64}{110}$ oe

Pearson Edexcel - Thursday 5 November 2009 - Paper 3 (Non-Calculator) Higher Tier

15.

19	(a)	$\frac{5}{7},\frac{2}{7};\frac{5}{7},\frac{2}{7}\frac{5}{7},\frac{2}{7}$		2	B1 for $\frac{5}{7},\frac{2}{7}$ on LH branch B1 for $\frac{5}{7},\frac{2}{7}\frac{5}{7},\frac{2}{7}$ on RH branch
	(b)	$\frac{5}{7}\times\frac{2}{7}+\frac{5}{7}\times\frac{2}{7}$ $=\frac{10}{49}+\frac{10}{49}=\frac{20}{49}$	$\frac{20}{49}$	3	M1 for "$\frac{5}{7}\times\frac{2}{7}$" alone M1 for addition of two products from correct braches eg "$\frac{5}{7}\times\frac{2}{7}+\frac{5}{7}\times\frac{2}{7}$" A1 $\frac{20}{49}$ oe Alternative: M2 for an attempt to evaluate $1-\frac{5}{7}\times\frac{5}{7}-\frac{2}{7}\times\frac{2}{7}$ A1 cao SC $\frac{5}{7}\times\frac{2}{6}+\frac{2}{7}\times\frac{5}{6}=\frac{20}{42}$ gets B2

OCR GSCE – Thursday 5 November 2020 – Paper 5 (Non-Calculator) Higher Tier

16.

8			For Monday, does not rain should be 1 – 0.55 **oe** For Tuesday, 0.25 is incorrectly placed on the does not rain branch **oe** A pair of branches is missing for Tuesday after does not rain on Monday **oe**	**3**	**B1** for each	After each correct statement isw eg 0.55 + 0.35 does not equal 1 Monday not rain should be 0.45 eg For Tuesday the probabilities are placed the wrong way around 0.25 should be on the rain branch eg There should be two more branches for Tuesday See AG

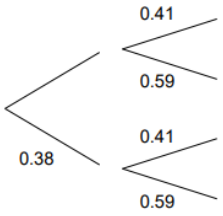
OCR GSCE – Thursday 6 June 2019 – Paper 5 (Non-Calculator) Higher Tier

17.

6	**(a)**		$\frac{3}{7}$, $\frac{3}{7}$, $\frac{4}{7}$, $\frac{3}{7}$ correctly placed	**2**	**M1** for 2 or 3 probabilities correctly placed	Accept equivalent fractions, decimals or %s (3 figures needed for dec or %)
	(b)		$\frac{16}{49}$ **oe**	**2**	**M1** for $\frac{4}{7}\times\frac{4}{7}$ **oe**	isw cancelling/conversion to other forms

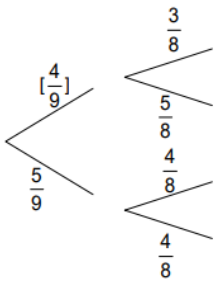
OCR GSCE – Monday 12 November 2018 – Paper 6 (Calculator) Higher Tier

18.

7	**(a)**		9	**2**	**M1** for 15 × 0.62, possibly soi by 9.3 If **0** scored, then **SC1** for 15 × 0.41 leading to 6 as final answer	Condone "9 or 10" as final answer for **2** marks if correct working is shown.
	(b)	**(i)**		**2**	**B1** for 0.38 and at least one 0.59 seen on correct branches	
		(ii)	0.5216 or $\frac{326}{625}$	**3**	**M2FT** for (0.62 × *their* 0.59) + (*their* 0.38 × 0.41) oe or **M1FT** for (0.62 × *their* 0.59) soi by 0.3658 oe or (*their* 0.38 × 0.41) soi by 0.1558 oe	Condone 0.52 or 0.522 as final answer provided nfww

OCR GSCE – Wednesday 8 November 2017 – Paper 6 (Calculator) Higher Tier

19.

11	**(a)**			**2**	**B1** for $\frac{5}{9}$ and at least one fraction with denominator 8 for second card	
	(b)		$\frac{5}{9}$ oe	**3**	**M2FT** for $\left(\frac{4}{9}\times\frac{5}{8}\right)+\left(\frac{5}{9}\times\frac{4}{8}\right)$ oe OR **M1FT** for $\left(\frac{4}{9}\times\frac{5}{8}\right)$ or $\left(\frac{5}{9}\times\frac{4}{8}\right)$ oe soi by $\frac{20}{72}$ oe	**FT** *their* probabilities from **(a)**

OCR GSCE – Thursday 25 May 2017 – Paper 4 (Calculator) Higher Tier

20.

13	**(a)**		[0].4, [0].3 and [0].8 oe in the correct places	**1**		Accept equivalent fractions or percentages with % sign in each part and **FT their tree diagram only if (a) scores 0 marks**
	(b)		[0].4 or $\frac{2}{5}$ oe	**1**	**FT** *their* tree diagram	accept 40%: condone $\frac{4}{1}$, penalise wrong form once eg 4 : 10, 4 in 10
	(c)		[0].7 or $\frac{7}{10}$ oe	**1**		accept 70%
	(d)		[0].08 or $\frac{2}{25}$ oe	**2**	FT *their* tree diagram for **2** marks **M1** for *their*[0].4 × [0].2	accept 8% and working may be in the tree
	(e)		[0].82 or $\frac{41}{50}$ oe	**3**	FT *their* tree diagram for **3** marks **M2** for 1 – [0].6 × *their* [0].3 or [0].6 × [0].7 + *their* [0].4 × *their* [0].8 + *their* [0].4 × [0].2 oe soi or **M1** for [0].6 × *their* [0].3 or two of [0].6 × [0].7, *their* [0].4 × *their* [0].8, *their* [0].4 × [0].2 oe soi	accept any correct method and working may be in tree implied by 1 - [0].18 implied by [0].42 + [0].32 + [0].08 implied by [0].18 implied by two of [0].42, [0].32, [0].08

AQA GSCE – Tuesday 21 May 2019 – Paper 1 (Non - Calculator) Higher Tier

21.

6(a)	$\frac{1}{6}$ on '1' and $\frac{1}{3}$ or $\frac{2}{6}$ on '2 or 3' and $\frac{1}{2}$ on each of 'Odd' and 'Even'	B2	oe fraction, decimal or percentage B1 $\frac{1}{6}$ on '1' and $\frac{1}{3}$ or $\frac{2}{6}$ on '2 or 3' or $\frac{1}{2}$ on each of 'Odd' and 'Even' or all correct unsimplified probabilities with one or more simplification errors eg $\frac{3}{6}$ on 'Odd' simplified to $\frac{1}{3}$

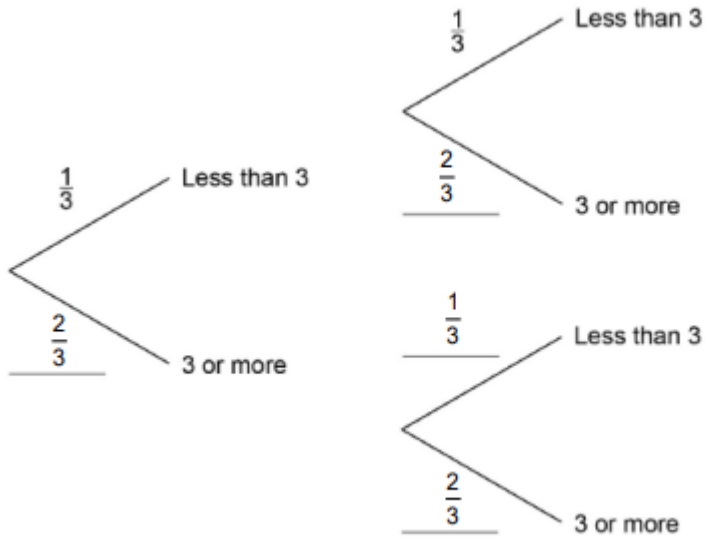
Additional Guidance	
Accept decimals or percentages rounded or truncated correctly to at least 2 significant figures	
Only withhold a mark for simplification errors if B2 would otherwise be awarded	
Ignore extra branches added	
Ignore attempts to work out combined probabilities to the right of the tree diagram	
If an answer line is blank, the student may have written their answer elsewhere on the branch	

6(b)	**Alternative method 1: P(1) + P(4, 5 or 6) × P(Odd)**		
	$\frac{1}{2}$ × their $\frac{1}{2}$ or $\frac{1}{4}$	M1	oe
	their $\frac{1}{4}$ + their $\frac{1}{6}$	M1dep	oe
	(P(win) =) $\frac{10}{24}$ or $\frac{5}{12}$	A1ft	oe ft their tree diagram
	Lose (and P(Lose) = $\frac{14}{24}$ or $\frac{7}{12}$ oe)	A1ft	ft correct decision for their $\frac{5}{12}$ (and their $\frac{7}{12}$) with M2 scored
	Alternative method 2: 1 – P(2 or 3) – P(4, 5 or 6) × P(Even)		
	$\frac{1}{2}$ × their $\frac{1}{2}$ or $\frac{1}{4}$	M1	oe
	their $\frac{1}{4}$ + their $\frac{1}{3}$ or P(lose) = $\frac{7}{12}$	M1dep	oe ft their tree diagram
	(P(win) =) $\frac{10}{24}$ or $\frac{5}{12}$	A1ft	oe ft their tree diagram
	Lose (and P(Lose) = $\frac{14}{24}$ or $\frac{7}{12}$ oe)	A1ft	ft correct decision for their $\frac{5}{12}$ (and their $\frac{7}{12}$) with M2 scored
	Additional Guidance is on the following page		

	Additional Guidance	
6(b) cont	Check the tree diagram for working	
	Any 'their' or ft probability must be > 0 and < 1 for marks to be awarded	
	For the second A1ft, the ft can be from an incorrect tree (which may score 4 marks) or an arithmetic error (which scores 3 marks, M1M1A0A1ft)	
	Accept equivalent fractions or decimals within calculations and equivalent fractions, decimals or percentages for final probabilities	
	Accept decimals or percentages rounded or truncated correctly to at least 2 significant figures	
	Condone $\frac{1}{2} \times$ their $\frac{1}{2}$ as part of a longer, incorrect multiplication eg $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{6}$	M1M0A0A0
	Condone decimals used within fractions eg P(Win) = $\frac{2.5}{6}$	at least M1M1A1
	For the method marks, condone incorrect mathematical notation eg $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4} + \frac{1}{6} = \ldots$	at least M1M1 (may go on to score 3 or 4 marks)
	For the second A1ft, if the student gives a value for P(Lose), their P(Win) + their P(Lose) must equal 1 However, allow a comparison to $\frac{1}{2}$ unless it is clearly an incorrect value for P(Lose)	

AQA GSCE – Thursday 7 June 2018 – Paper 2 (Calculator) Higher Tier

22.

	$\frac{1}{3}$ or $\frac{2}{6}$ or 0.33… or 33.(…)% on each top branch and $\frac{2}{3}$ or $\frac{4}{6}$ or 0.66… or 0.67 or 66.(…)% or 67% on each bottom branch	B1	accept any equivalent fraction, decimal or percentage
	Additional Guidance		
	Decimals must have at least 2 decimal places so do not accept 0.3 or 0.6 or 0.7		
	Only accept the percentages shown, do not accept 30% or 60%		
	Ignore working around the edge of the diagram		
11(a)			B1

11(b)	$\frac{1}{9}$ or 0.11… or 11.(…)%	B1	
	Additional Guidance		
	Ignore probability words such as 'unlikely' or 'evens'		
	Accept equivalent answers eg $\frac{2}{18}$, $\frac{3}{27}$, $0.\dot{1}$		
	Do not accept 0.1 or 10%		

11(c)	**Alternative method 1 Probabilities on branches in (a) all correct**		
	$\frac{1}{3} \times \frac{2}{3}$ or $\frac{2}{3} \times \frac{1}{3}$ or $\frac{2}{9}$	M1	oe accept 0.33… for $\frac{1}{3}$ accept 0.66… or 0.67 for $\frac{2}{3}$
	$\frac{4}{9}$ or 0.44… or 44.(…)%	A1	
	Alternative method 2 Probabilities on branches in (a) all correct		
	$1-(\frac{1}{3} \times \frac{1}{3})-(\frac{2}{3} \times \frac{2}{3})$	M1	oe accept 0.33… for $\frac{1}{3}$ accept 0.66… or 0.67 for $\frac{2}{3}$
	$\frac{4}{9}$ or 0.44… or 44.(…)%	A1	

Mark scheme continues on the next page

11(c) cont	**Alternative method 3 Probabilities on branches in (a) not all correct**		
	$\frac{1}{3}$ × their $\frac{2}{3}$ where their $\frac{2}{3}$ must be for 2nd dice 3 or more or their $\frac{2}{3}$ × their $\frac{1}{3}$ where their $\frac{2}{3}$ must be for 1st dice 3 or more and their $\frac{1}{3}$ must be for 2nd dice less than 3	M1	oe accept 0.33… for $\frac{1}{3}$ accept 0.66… or 0.67 for $\frac{2}{3}$ their fractions must be between 0 and 1
	$\frac{4}{9}$ or 0.44… or 44.(…)%	A1ft	ft their fractions
	Alternative method 4 Probabilities on branches in (a) not all correct		
	$1-(\frac{1}{3}\times\frac{1}{3})-$(their $\frac{2}{3}$ × their $\frac{2}{3}$) where their $\frac{2}{3}$ must be for 1st dice 3 or more and their $\frac{2}{3}$ must be for 2nd dice 3 or more	M1	accept 0.33… for $\frac{1}{3}$ accept 0.66… or 0.67 for $\frac{2}{3}$ their fractions must be between 0 and 1
	$\frac{4}{9}$ or 0.44… or 44.(…)%	A1ft	ft their fractions

Additional guidance continues on the next page

11(c) cont	**Additional Guidance**	
	If probabilities on branches in (a) are all $\frac{1}{3}$	M0A0
	Decimals must have at least 2 decimal places so do not accept 0.3 or 0.6 or 0.7	
	Ignore any incorrect cancelling or change of form (fraction, decimal or percentage)	
	$\frac{1}{3}\times\frac{2}{3}\times\frac{2}{3}\times\frac{1}{3}$	M0A0
	$\frac{1}{3}\times\frac{2}{3}$ and $\frac{1}{3}\times\frac{1}{3}$ without selecting $\frac{1}{3}\times\frac{2}{3}$ is choice	M0

AQA GSCE – Wednesday 25 May 2017 – Paper 1 (Non - Calculator) Higher Tier

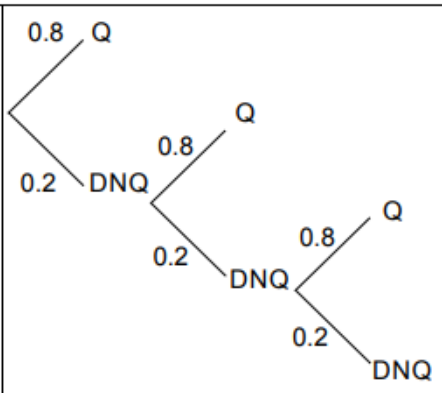
23.

16(a)	$\frac{2}{5}$ Even and $\frac{3}{5}$ Odd	B1	oe fractions, decimals or percentages
	Two branches from Even labelled Red $\frac{5}{6}$ Green $\frac{1}{6}$	B1	oe fractions, decimals or percentages Branches from Odd is B0 Allow equivalent labelling eg R and G Green and Not Green
	Additional Guidance		
	In decimals, allow for $\frac{5}{6}$ and $\frac{1}{6}$ 0.83 and 0.17 or 0.833 and 0.167 or 0.834 and 0.166 or 0.84 and 0.16 or better truncation or rounding (sum of pair must equal 1) In percentages, allow for $\frac{5}{6}$ and $\frac{1}{6}$ 83% and 17% or 83.3% and 16.7% or 83.4% and 16.6% or 84% and 16% or better truncation or rounding (sum of pair must equal 100%)		
	Ignore any attempts to combine probabilities to the right of the tree diagram		

16(b)	their $\frac{2}{5}$ × their $\frac{1}{6}$	M1	their P(Even) × their P(Green) ft from (a) if 0 < both probabilities < 1
	$\frac{2}{30}$ or $\frac{1}{15}$	A1ft	oe fraction or decimal ft from (a) if 0 < both probabilities < 1
	Additional Guidance		
	Allow 0.06 or 6% or better truncation or rounding or 0.07 or 7% for $\frac{2}{30}$		
	If the dice branches are not labelled there is no ft from (a)		
	If (a) has no attempt or an incorrect answer full marks can still be gained here for correct working (and answer)		
	Ignore further attempts to simplify or convert to a decimal or percentage after a correct fraction is seen eg $\frac{2}{30} = \frac{1}{10}$ or $\frac{4}{60} = 0.165$		M1A1

AQA GSCE – Sample Paper 1 (Non - Calculator) Higher Tier

24.

20(a)		B2	Q = Qualifies DNQ = Does not qualify B1 0.2 on DNQ branch or All branches included labelled correctly with Q and DNQ but probabilities not all correct

20(b)	**Alternative method 1**		
	their $0.2 \times$ their 0.8 or 0.16	M1	Look on tree diagram for working
	0.96	A1	
	Alternative method 2		
	$(\text{their } 0.2)^2$ or 0.04	M1	Look on tree diagram for working
	0.96	A1	