

# Higher

**GCSE**

**Combined Science Biology A Gateway Science**

**J250/08: Paper 8 (Higher Tier)**

General Certificate of Secondary Education

**Mark Scheme for June 2022**

OCR (Oxford Cambridge and RSA) is a leading UK awarding body, providing a wide range of qualifications to meet the needs of candidates of all ages and abilities. OCR qualifications include AS/A Levels, Diplomas, GCSEs, Cambridge Nationals, Cambridge Technicals, Functional Skills, Key Skills, Entry Level qualifications, NVQs and vocational qualifications in areas such as IT, business, languages, teaching/training, administration and secretarial skills.

It is also responsible for developing new specifications to meet national requirements and the needs of students and teachers. OCR is a not-for-profit organisation; any surplus made is invested back into the establishment to help towards the development of qualifications and support, which keep pace with the changing needs of today's society.

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

All examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes should be read in conjunction with the published question papers and the report on the examination.

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## MARKING INSTRUCTIONS

### PREPARATION FOR MARKING

#### RM ASSESSOR

1. Make sure that you have accessed and completed the relevant training packages for on-screen marking: *RM Assessor Assessor Online Training*; *OCR Essential Guide to Marking*.
2. Make sure that you have read and understood the mark scheme and the question paper for this unit. These are posted on the RM Cambridge Assessment Support Portal <http://www.rm.com/support/ca>
3. Log-in to RM Assessor and mark the **required number** of practice responses (“scripts”) and the **number of required** standardisation responses.

YOU MUST MARK 10 PRACTICE AND 10 STANDARDISATION RESPONSES BEFORE YOU CAN BE APPROVED TO MARK LIVE SCRIPTS.

### MARKING

1. Mark strictly to the mark scheme.
2. Marks awarded must relate directly to the marking criteria.
3. The schedule of dates is very important. It is essential that you meet the RM Assessor 50% and 100% (traditional 40% Batch 1 and 100% Batch 2) deadlines. If you experience problems, you must contact your Team Leader (Supervisor) without delay.
4. If you are in any doubt about applying the mark scheme, consult your Team Leader by telephone or the RM Assessor messaging system, or by email.
5. **Crossed Out Responses**  
Where a candidate has crossed out a response and provided a clear alternative then the crossed out response is not marked. Where no alternative response has been provided, examiners may give candidates the benefit of the doubt and mark the crossed out response where legible.

**Rubric Error Responses – Optional Questions**

Where candidates have a choice of question across a whole paper or a whole section and have provided more answers than required, then all responses are marked and the highest mark allowable within the rubric is given. Enter a mark for each question answered into RM assessor, which will select the highest mark from those awarded. *(The underlying assumption is that the candidate has penalised themselves by attempting more questions than necessary in the time allowed.)*

**Multiple Choice Question Responses**

When a multiple choice question has only a single, correct response and a candidate provides two responses (even if one of these responses is correct), then no mark should be awarded (as it is not possible to determine which was the first response selected by the candidate).

*When a question requires candidates to select more than one option/multiple options, then local marking arrangements need to ensure consistency of approach.*

**Contradictory Responses**

When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

**Short Answer Questions (requiring only a list by way of a response, usually worth only **one mark per response**)**

Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. *(The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)*

**Short Answer Questions (requiring a more developed response, worth **two or more marks**)**

If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space.)

**Longer Answer Questions (requiring a developed response)**

Where candidates have provided two (or more) responses to a medium or high tariff question which only required a single (developed) response and not crossed out the first response, then only the first response should be marked. Examiners will need to apply professional judgement as to whether the second (or a subsequent) response is a 'new start' or simply a poorly expressed continuation of the first response.

6. Always check the pages (and additional objects if present) at the end of the response in case any answers have been continued there. If the candidate has continued an answer there, then add a tick to confirm that the work has been seen.
7. Award No Response (NR) if:
  - there is nothing written in the answer space

Award Zero '0' if:

- anything is written in the answer space and is not worthy of credit (this includes text and symbols).

Team Leaders must confirm the correct use of the NR button with their markers before live marking commences and should check this when reviewing scripts.

8. The RM Assessor **comments box** is used by your team leader to explain the marking of the practice responses. Please refer to these comments when checking your practice responses. **Do not use the comments box for any other reason.**  
If you have any questions or comments for your team leader, use the phone, the RM Assessor messaging system, or e-mail.
9. *Assistant Examiners will send a brief report on the performance of candidates to their Team Leader (Supervisor) via email by the end of the marking period. The report should contain notes on particular strengths displayed as well as common errors or weaknesses. Constructive criticism of the question paper/mark scheme is also appreciated.*

For answers marked by levels of response: Not applicable in F501

- a. **To determine the level** – start at the highest level and work down until you reach the level that matches the answer
- b. **To determine the mark within the level**, consider the following

Descriptor	Award mark
On the borderline of this level and the one below	At bottom of level
Just enough achievement on balance for this level	Above bottom and either below middle or at middle of level (depending on number of marks available)
Meets the criteria but with some slight inconsistency	Above middle and either below top of level or at middle of level (depending on number of marks available)
Consistently meets the criteria for this level	At top of level

Read through the whole answer from start to finish, using the Level descriptors to help you decide whether it is a strong or weak answer. The indicative scientific content in the Guidance column indicates the expected parameters for candidates' answers, but be prepared to recognise and credit unexpected approaches where they show relevance. Using a 'best-fit' approach based on the skills and science content evidenced within the answer, first decide which set of level descriptors, Level 1, Level 2 or Level 3, best describes the overall quality of the answer.

Once the level is located, award the higher or lower mark:

**The higher mark** should be awarded where the level descriptor has been evidenced and all aspects of the communication statement (in italics) have been met.

**The lower mark** should be awarded where the level descriptor has been evidenced but aspects of the communication statement (in italics) are missing.















**In summary:**

**The skills and science content determines the level.**

**The communication statement determines the mark within a level.**

Level of response questions on this paper is **15(b)**.

## 11. Annotations available in RM Assessor

Annotation	Meaning
	Correct response
	Incorrect response
	Omission mark
	Benefit of doubt given
	Contradiction
	Rounding error
	Error in number of significant figures
	Error carried forward
	Level 1
	Level 2
	Level 3
	Benefit of doubt not given
	Noted but no credit given
	Ignore

12. Abbreviations, annotations and conventions used in the detailed Mark Scheme (to include abbreviations and subject-specific conventions).

<b>Annotation</b>	<b>Meaning</b>
/	alternative and acceptable answers for the same marking point
✓	Separates marking points
<b>DO NOT ALLOW</b>	Answers which are not worthy of credit
<b>IGNORE</b>	Statements which are irrelevant
<b>ALLOW</b>	Answers that can be accepted
( )	Words which are not essential to gain credit
—	Underlined words must be present in answer to score a mark
<b>ECF</b>	Error carried forward
<b>AW</b>	Alternative wording
<b>ORA</b>	Or reverse argument



### 13. Subject-specific Marking Instructions

#### INTRODUCTION

Your first task as an Examiner is to become thoroughly familiar with the material on which the examination depends. This material includes:

- the specification, especially the assessment objectives
- the question paper
- the mark scheme.

You should ensure that you have copies of these materials.

You should ensure also that you are familiar with the administrative procedures related to the marking process. These are set out in the OCR booklet **Instructions for Examiners**. If you are examining for the first time, please read carefully **Appendix 5 Introduction to Script Marking: Notes for New Examiners**.

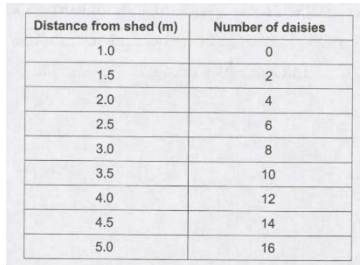
Please ask for help or guidance whenever you need it. Your first point of contact is your Team Leader.

The breakdown of Assessment Objectives for GCSE (9-1) in Biology/Combined Science A:

	<b>Assessment Objective</b>
<b>AO1</b>	<b>Demonstrate knowledge and understanding of scientific ideas and scientific techniques and procedures.</b>
AO1.1	Demonstrate knowledge and understanding of scientific ideas.
AO1.2	Demonstrate knowledge and understanding of scientific techniques and procedures.
<b>AO2</b>	<b>Apply knowledge and understanding of scientific ideas and scientific enquiry, techniques and procedures.</b>
AO2.1	Apply knowledge and understanding of scientific ideas.
AO2.2	Apply knowledge and understanding of scientific enquiry, techniques and procedures.
<b>AO3</b>	<b>Analyse information and ideas to interpret and evaluate, make judgements and draw conclusions and develop and improve experimental procedures.</b>
<b>AO3.1</b>	Analyse information and ideas to interpret and evaluate.
AO3.1a	Analyse information and ideas to interpret.
AO3.1b	Analyse information and ideas to evaluate.
<b>AO3.2</b>	Analyse information and ideas to make judgements and draw conclusions.
AO3.2a	Analyse information and ideas to make judgements.
AO3.2b	Analyse information and ideas to draw conclusions.
<b>AO3.3</b>	Analyse information and ideas to develop and improve experimental procedures.
AO3.3a	Analyse information and ideas to develop experimental procedures.
AO3.3b	Analyse information and ideas to improve experimental procedures.

For answers to Section A if an answer box is blank ALLOW correct indication of answer e.g. circled or underlined.

Question	Answer	Marks	AO element	Guidance
1	C ✓	1	1.1	
2	A ✓	1	1.1	
3	A ✓	1	1.1	
4	A ✓	1	2.1	
5	A ✓	1	2.1	
6	D ✓	1	1.1	
7	A ✓	1	1.1	
8	C ✓	1	1.1	
9	A ✓	1	1.2	
10	B ✓	1	2.1	

Question			Answer	Marks	AO element	Guidance																				
11	(a)	(i)	Quadrat ✓ Random ✓	2	2 x 1.1																					
		(ii)	<b>FIRST CHECK THE ANSWER ON ANSWER LINE</b> <b>If answer = 660 award 3 marks</b> 2.5 ✓ $\frac{11 \times 15}{2.5} \quad \checkmark$ 660 ✓	3	3 x 2.2	<b>ALLOW</b> 0.25 and 15 anywhere in answer for one mark <b>ALLOW</b> 11 anywhere in answer for one mark <b>ALLOW</b> $\frac{15 \times 11}{0.25}$ for 2 marks <b>ALLOW</b> 6600 for two marks																				
	(b)	(i)	Suitable scale on correctly chosen axes ✓  Both axes labelled including unit ✓  All points accurately plotted ✓  Suitable best straight line ✓	4	4 x 2.2	Minimum 50% of grid used Scale must be in ascending order / 0,0 not required x-axis distance from shed and y-axis number of daisies  x-axis: distance (from shed) m and y-axis: number of daisies  <table border="1"> <thead> <tr> <th>Distance from shed (m)</th> <th>Number of daisies</th> </tr> </thead> <tbody> <tr><td>1.0</td><td>0</td></tr> <tr><td>1.5</td><td>2</td></tr> <tr><td>2.0</td><td>4</td></tr> <tr><td>2.5</td><td>6</td></tr> <tr><td>3.0</td><td>8</td></tr> <tr><td>3.5</td><td>10</td></tr> <tr><td>4.0</td><td>12</td></tr> <tr><td>4.5</td><td>14</td></tr> <tr><td>5.0</td><td>16</td></tr> </tbody> </table> <b>ALLOW</b> +/- half a square for plotting  <b>IGNORE</b> any extrapolation of line <b>add ticks and crosses to right hand side of grid</b>	Distance from shed (m)	Number of daisies	1.0	0	1.5	2	2.0	4	2.5	6	3.0	8	3.5	10	4.0	12	4.5	14	5.0	16
Distance from shed (m)	Number of daisies																									
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4.0	12																									
4.5	14																									
5.0	16																									

Question		Answer	Marks	AO element	Guidance
	(ii)	4 ✓	1	2.2	<b>ALLOW</b> ecf from (b)(i)
	(iii)	<p><b>Any two from:</b></p> <p>Daisy growth is reduced ✓</p> <p>(shed) blocks/reduces light on lawn/daisies ✓</p> <p>Reduced photosynthesis / not able to photosynthesise ✓</p>	2	2 x 3.2b	<p><b>ALLOW</b> less/no daisies near the shed / ORA</p> <p><b>ALLOW</b> the daisies are in the shade</p> <p><b>ALLOW</b> more light further from the shed</p> <p><b>ALLOW</b> daisies need light to grow</p> <p><b>IGNORE</b> just Sun</p> <p><b>ALLOW</b> light is needed for photosynthesis</p>

Question		Answer	Marks	AO element	Guidance
12	(a)	Biotic Abiotic Temperature Carbon dioxide ✓✓✓	3	3 x 1.1	All four correct = 3 marks Two or three correct = 2 marks One correct = 1 mark
	(b)	(i)	3	3 x 1.2	<b>ALLOW</b> sharp knife <b>IGNORE just</b> 'knife' <b>IGNORE</b> cut with a peeler <b>IGNORE</b> take a thin layer of nodule / one cell thick layer / peel a thin layer of nodule  <b>IGNORE</b> place it onto a cover slip  <b>ALLOW</b> add a dye or named stains e.g. iodine solution / methylene blue <b>ALLOW</b> description of a stain e.g. a solution that shows up the structures <b>IGNORE just</b> a solution/water/(universal) indicator/blue ink  <b>ALLOW</b> use coarse focus then fine focus  <b>ALLOW</b> e.g. cutting away from body when using scalpel / always move objective lens away from slide when looking down the eye piece / tap gently to remove air bubbles <b>IGNORE</b> push cover slip down to get rid of air bubbles
		(ii)	1	2.2	<b>ALLOW</b> SEM / TEM
		Electron (microscope) ✓			

Question		Answer	Marks	AO element	Guidance
					<b>IGNORE</b> electric/electronic
	(c)	<p><b>Any three from:</b></p> <p>Idea bacteria provide nitrates so Plants can make <u>more</u> amino acids ✓</p> <p>Idea that plants can make proteins (using the amino acids/nitrates) ✓</p> <p>Idea that bacteria receive carbohydrates/sugar/glucose made by the plant (from photosynthesis) ✓</p> <p>Mutualism relationship between them ✓</p>	3	3 x 1.1	<p><b>ALLOW</b> plants cannot use nitrogen to make nitrates/amino acids so rely on bacteria for nitrates</p> <p><b>IGNORE</b> bacteria convert nitrogen to nitrates</p> <p><b>IGNORE</b> plants use nitrates to make amino acids</p> <p><b>IGNORE</b> plants take in amino acids</p> <p><b>IGNORE</b> plants use amino acids in photosynthesis/ growth</p> <p><b>IGNORE</b> bacteria gets food/energy from plants</p> <p><b>ALLOW</b> symbiotic relationship / mutually beneficial relationship / description e.g. both organisms benefit / mutual relationship</p> <p><b>DO NOT ALLOW</b> bacteria are parasites</p>

Question			Answer	Marks	AO element	Guidance										
13	(a)	(i)	pH of acid rainwater ✓	1	1.2	<table border="1"> <tr> <td>Amount of light sunflowers receive</td> <td></td> </tr> <tr> <td>Height of sunflowers</td> <td></td> </tr> <tr> <td>Number of sunflowers</td> <td></td> </tr> <tr> <td>pH of acid rainwater</td> <td>✓</td> </tr> <tr> <td>Volume of rainwater added to sunflowers</td> <td></td> </tr> </table>	Amount of light sunflowers receive		Height of sunflowers		Number of sunflowers		pH of acid rainwater	✓	Volume of rainwater added to sunflowers	
Amount of light sunflowers receive																
Height of sunflowers																
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pH of acid rainwater	✓															
Volume of rainwater added to sunflowers																
		(ii)	Use a (digital) pH meter/probe ✓  Water with equal volumes of (rain)water ✓	2	2 x 3.3b	<p><b>ALLOW</b> acid for (rain)water  <b>ALLOW</b> use the same/equal amount of (rain)water  <b>ALLOW</b> use the same amount not similar amount  <b>ALLOW</b> example of same volume e.g. use 100cm<sup>3</sup> of (rain)water</p> <p><b>IGNORE</b> measure the amount of water added / use a specific/exact amount / put a lid on to stop evaporation</p> <p><b>IGNORE</b> repeats / do it for longer</p>										
		(iii)	(Acid rain) contains nitrogen oxide/nitric acid/nitrogen ✓	1	3.1b	<p><b>ALLOW</b> sulfuric acid does not contain nitrogen oxide/nitric acid/nitrogen</p> <p><b>IGNORE</b> other acids are involved / other gases form acid rain  <b>IGNORE</b> no oxygen/carbon dioxide/water</p>										
		(iv)	Add/test with nitric acid ✓	1	3.3a	<p><b>IGNORE</b> uses actual rainwater / add nitrogen / use nitrogen oxide</p>										
	(b)	(i)	pH 4.0 – 4.6 ✓	1	3.1a	<table border="1"> <tr> <td>pH 2.0 – 3.6</td> <td></td> </tr> <tr> <td>pH 3.0 – 3.6</td> <td></td> </tr> <tr> <td>pH 4.0 – 4.6</td> <td>✓</td> </tr> <tr> <td>pH 5.0 – 5.6</td> <td></td> </tr> </table>	pH 2.0 – 3.6		pH 3.0 – 3.6		pH 4.0 – 4.6	✓	pH 5.0 – 5.6			
pH 2.0 – 3.6																
pH 3.0 – 3.6																
pH 4.0 – 4.6	✓															
pH 5.0 – 5.6																





Question			Answer	Marks	AO element	Guidance
14	(a)	(i)	Communicable diseases decreased ✓ Non-communicable diseases increased ✓	2	2 x 3.1a	<b>DO NOT ALLOW</b> increased / staying the same <b>DO NOT ALLOW</b> decreased / staying the same <b>IGNORE</b> comparisons between the two types
		(ii)	(Reduced communicable diseases suggest) improved sanitation / improved healthcare / improved water treatment / reduced poverty / less overcrowding ✓  (Increased non-communicable diseases suggest) more unhealthy eating / less exercise / increase in smoking / increase in alcohol (consumption) ✓	2	2 x 2.1	<b>ALLOW</b> better hygiene / improved medication <b>ALLOW</b> vaccination programmes introduced <b>IGNORE</b> cleaner country / improved living conditions  <b>ALLOW</b> ageing population reveals more non-communicable diseases / people are living longer so more likely to get a non-communicable disease <b>ALLOW</b> increase in high fat diet / increase in high sugar diet / increase in high salt diet / more junk food / increase in obesity  <b>IGNORE</b> just poor diet
	(b)		<b>FIRST CHECK THE ANSWER ON ANSWER LINE</b> <b>If answer = 15400 award 2 marks</b>  $\frac{28 \times 55\,000\,000}{100\,000} \quad \checkmark$  15400 / $1.54 \times 10^4$ ✓	2	2 x 2.2	<b>ALLOW</b> $\frac{28 \times 55 \text{ million}}{10^5}$ or 28 x 550  <b>ALLOW</b> for one mark 154/1540/154000/1540000 etc

Question		Answer	Marks	AO element	Guidance
	(c)	<p><b>Any two from:</b>            (Antibody) specific/complementary to antigen (on pathogen) ✓</p> <p>(Antibody) bind to antigen (on surface of pathogen) ✓</p> <p>Restricting pathogen movement around the body ✓</p> <p>(After antibodies bind to antigens) phagocytes then engulf the pathogen ✓</p>	2	2 x 1.1	<p><b>ALLOW</b> antibodies stick/cling/lock to antigens  <b>IGNORE</b> antibodies fight/destroy/engulf antigens  <b>IGNORE</b> antibodies bind to pathogens</p> <p><b>ALLOW</b> idea that pathogens become clumped together</p> <p><b>ALLOW</b> (after antibodies bind to antigens) white blood cells then engulf the pathogen  <b>ALLOW</b> ingest/digest for engulf</p> <p><b>IGNORE</b> kill/eat  <b>IGNORE</b> antibodies produce phagocytes / antibodies engulf the pathogen  <b>IGNORE</b> reference to memory cells</p>
	(d)	<p>Deactivated or weak form of pathogen / antigens ✓</p> <p>Antibodies made quicker if body is infected with same pathogen /            Memory cells will react to further infections ✓</p>	2	2 x 1.1	<p><b>ALLOW</b> dead pathogen / inactive pathogen /  <b>ALLOW</b> bacteria or virus for pathogen</p> <p><b>ALLOW</b> pathogen that has been made harmless  <b>but IGNORE</b> just 'harmless pathogens'</p> <p><b>IGNORE</b> small dose of the pathogen  <b>IGNORE</b> denatured pathogen / weak version of disease / antibodies /</p> <p><b>ALLOW</b> mention of memory cells in correct context e.g. 'memory cells are produced / memory cells remain in the body'  <b>IGNORE</b> pathogen is stored in memory cell / antibodies contain memory cells</p>

Question			Answer	Marks	AO element	Guidance																
15	(a)	(i)	<table border="1"> <thead> <tr> <th colspan="3">Risk Of Developing Breast Cancer</th> </tr> <tr> <th></th> <th>Increased risk</th> <th>Less risk</th> </tr> </thead> <tbody> <tr> <th>Heterozygous male</th> <td>✓</td> <td></td> </tr> <tr> <th>Homozygous recessive female</th> <td></td> <td>✓</td> </tr> </tbody> </table>	Risk Of Developing Breast Cancer				Increased risk	Less risk	Heterozygous male	✓		Homozygous recessive female		✓	1	1.2	<b>BOTH</b> ticks required for mark				
Risk Of Developing Breast Cancer																						
	Increased risk	Less risk																				
Heterozygous male	✓																					
Homozygous recessive female		✓																				
		(ii)	<p>Parents are male Bb and female bb ✓</p> <p>Offspring are Bb, Bb, bb, bb ✓</p> <p>50(%) ✓</p>	3	3 x 2.2	<p><b>NOTE</b> male and female must be labelled  <b>ALLOW</b> other letters used as long as clear  <b>ALLOW</b> all three marks from a Punnett square</p> <table border="1"> <tr> <td></td> <td></td> <td colspan="2">female/F/mum</td> </tr> <tr> <td></td> <td></td> <td>b</td> <td>b</td> </tr> <tr> <td>male/M /dad</td> <td>B</td> <td>Bb</td> <td>Bb</td> </tr> <tr> <td></td> <td>b</td> <td>bb</td> <td>bb</td> </tr> </table> <p><b>ALLOW</b> ECF on offspring for incorrect parents</p> <p><b>ALLOW</b> ECF from incorrect offspring  percentage must match their offspring</p> <p><b>NOTE</b> BRCA is dominant, i.e. Bb will be at risk  <b>NOTE</b> if more than one diagram (with no crossing out) or no diagram then max one mark for percentage of 50%  <b>IGNORE</b> answers as ratio or fraction</p>			female/F/mum				b	b	male/M /dad	B	Bb	Bb		b	bb	bb
		female/F/mum																				
		b	b																			
male/M /dad	B	Bb	Bb																			
	b	bb	bb																			

Question		Answer	Marks	AO element	Guidance
	(b)*	<p>Please refer to the marking instructions on page 5 of this mark scheme for guidance on how to mark this question.</p> <p><b>Level 3 (5–6 marks)</b>            Makes detailed judgement both ethical and practical  <b>AND</b>            Applies detailed understanding of what information risk factor tool provides about next five years and lifetime risks</p> <p><i>There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.</i></p> <p><b>Level 2 (3–4 marks)</b>            Attempts to make a judgment either ethical <b>or</b> practical  <b>AND</b>            Applies understanding of what information risk factor tool provides about next five years or lifetime risks  <b>OR</b>            Attempts to make a judgment both ethical <b>AND</b> practical</p> <p><i>There is a line of reasoning presented with some structure. The information presented is relevant and supported by some evidence.</i></p> <p><b>Level 1 (1–2 marks)</b>            attempts to make a judgment either ethical or practical  <b>OR</b>            applies understanding of what information risk factor tool provides about next five years or lifetime risks</p>	6	3 x 2.2  3 x 3.2a	<p><b>AO2.2 Apply knowledge and understanding of scientific enquiry, techniques and procedures to identify useful information provided by risk factor tool</b></p> <ul style="list-style-type: none"> <li>lifetime risk of developing breast cancer is greater than general population</li> <li>lifetime risk is above the 20% threshold</li> <li>risk in next five years is very low</li> </ul> <p><b>AO3.2a Analyse information and ideas to make judgements on ethical and practical issues</b></p> <p><b>Practical, for example:</b></p> <ul style="list-style-type: none"> <li>may choose to do more frequent screening</li> <li>could choose to get checked in less than five years</li> <li>makes her realise that it is important to go for screening</li> <li>chooses to get screened before the age of 50</li> <li>enables her to take precautions to lower the risk such as changing diet</li> <li>would encourage her to check herself more often</li> </ul> <p>as risk (in next five years) is low –</p> <ul style="list-style-type: none"> <li>decides can wait five years before next screening</li> <li>has time to decide if she wants take any actions (such as have breasts removed)</li> <li>decides doesn't need more regular screening or earlier screening</li> </ul>

Question	Answer	Marks	AO element	Guidance
	<p><i>There is an attempt at a logical structure with a line of reasoning. The information is in the most part relevant.</i></p> <p><b>0 marks</b> <i>No response or no response worthy of credit.</i></p>			<p><b>IGNORE</b> ideas about early treatment for cancer</p> <p><b>Ethical, for example:</b></p> <ul style="list-style-type: none"> <li>• just because she has a higher risk does not mean she will get breast cancer</li> <li>• may have breasts removed for no reason</li> <li>• risk of surgery / risk not removing all cancerous cells</li> <li>• increased cost of more regular screening or unnecessary surgery</li> <li>• mental issues of knowing you are more at risk</li> <li>• not comfortable or stressed about having mastectomy</li> <li>• issues linked to mastectomy such as breast feeding</li> <li>• maybe issues with silicone implants ( e.g. rejection)</li> <li>• consideration linked to passing on the gene</li> </ul> <p><b>IGNORE</b> religious beliefs unless qualified</p>

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