

**EDEXCEL • GCSE BIOLOGY 1B10**

# Foundation Tier — Paper 1

June 2025 exam series

**MARK SCHEME**

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# Mark Scheme (Results)

Summer 2025

Pearson Edexcel GCSE  
In Biology (1BI0)  
Paper 1F

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## General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Mark schemes have been developed so that the rubrics of each mark scheme reflects the characteristics of the skills within the AO being targeted and the requirements of the command word. So for example the command word 'Explain' requires an identification of a point and then reasoning/justification of the point. Explain questions can be asked across all AOs. The distinction comes whether the identification is via a judgment made to reach a conclusion, or, making a point through application of knowledge to reason/justify the point made through application of understanding. It is the combination and linkage of the marking points that is needed to gain full marks.

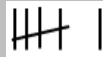
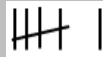
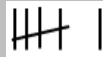
When marking questions with a 'describe' or 'explain' command word, the detailed marking guidance below should be consulted to ensure consistency of marking.

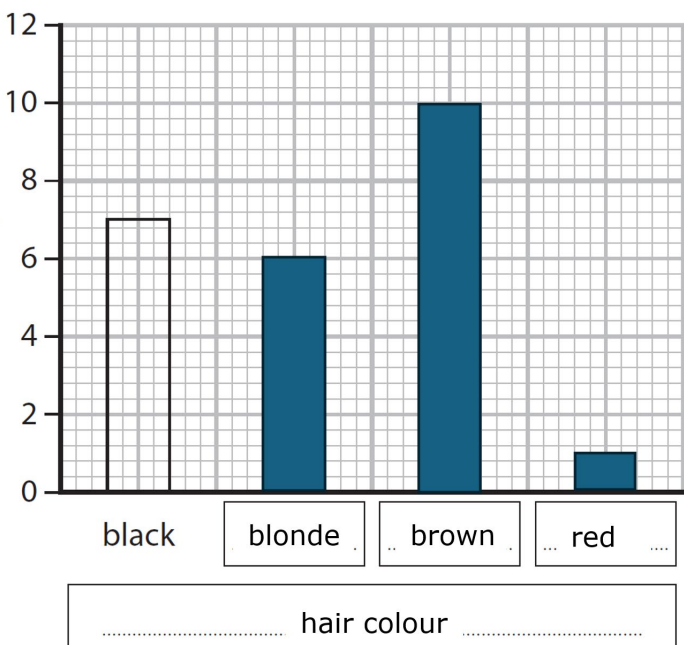
| Assessment Objective |           | Command Word                                                                                                                    |                                                                                                                                         |
|----------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Strand               | Element   | Describe                                                                                                                        | Explain                                                                                                                                 |
| AO1                  |           | An answer that combines the marking points to provide a logical description                                                     | An explanation that links identification of a point with reasoning/justification(s) as required                                         |
| AO2                  |           | An answer that combines the marking points to provide a logical description, showing application of knowledge and understanding | An explanation that links identification of a point (by applying knowledge) with reasoning/justification (application of understanding) |
| AO3                  | 1a and 1b | An answer that combines points of interpretation/evaluation to provide a logical description                                    |                                                                                                                                         |
| AO3                  | 2a and 2b |                                                                                                                                 | An explanation that combines identification via a judgment to reach a conclusion via justification/reasoning                            |
| AO3                  | 3a        | An answer that combines the marking points to provide a logical description of the plan/method/experiment                       |                                                                                                                                         |
| AO3                  | 3b        |                                                                                                                                 | An explanation that combines identifying an improvement of the experimental procedure with a linked justification/reasoning             |

## Biology 1BI0\_1F

| Question number | Answer                                                                                                                                                | Mark                                  |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 1(a)(i)         | <p>A variation</p> <p><b>The only correct answer is A</b></p> <p>B, C and D are incorrect because they do not describe differences in hair colour</p> | <p><b>(1)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer  | Additional guidance | Mark                                  |
|-----------------|---------|---------------------|---------------------------------------|
| 1(a)(ii)        | nucleus | accept mitochondria | <p><b>(1)</b></p> <p><b>A01 1</b></p> |

| Question number                                                                     | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mark                                                                                |                                                                                       |  |  |       |        |       |     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |           |           |            |           |                   |
|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--|--|-------|--------|-------|-----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------|-----------|------------|-----------|-------------------|
| 1(b)(i)                                                                             | <p>tally for brown completed (1)<br/>total for brown completed (1)</p> <table><tr><th colspan="4">hair colour</th></tr><tr><th>black</th><th>blonde</th><th>brown</th><th>red</th></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>total = 7</td><td>total = 6</td><td>total = 10</td><td>total = 1</td></tr></table> | hair colour                                                                         |                                                                                       |  |  | black | blonde | brown | red |  |  |  |  | total = 7 | total = 6 | total = 10 | total = 1 | (2)<br><br>A03 1a |
| hair colour                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                     |                                                                                       |  |  |       |        |       |     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |           |           |            |           |                   |
| black                                                                               | blonde                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | brown                                                                               | red                                                                                   |  |  |       |        |       |     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |           |           |            |           |                   |
|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |  |  |       |        |       |     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |           |           |            |           |                   |
| total = 7                                                                           | total = 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | total = 10                                                                          | total = 1                                                                             |  |  |       |        |       |     |                                                                                     |                                                                                     |                                                                                     |                                                                                       |           |           |            |           |                   |

| Question number | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Additional guidance | Mark               |       |   |        |   |       |    |     |   |                                         |                               |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------|-------|---|--------|---|-------|----|-----|---|-----------------------------------------|-------------------------------|
| 1(b)(ii)        | <ul style="list-style-type: none"><li>bars for blonde, brown and red plotted (from Figure 2) (1)</li><li>labels for blonde, brown and red (1)</li><li>x-axis labelled (hair) colour (1)</li></ul> <div><div>number of students</div><table><thead><tr><th>hair colour</th><th>number of students</th></tr></thead><tbody><tr><td>black</td><td>7</td></tr><tr><td>blonde</td><td>6</td></tr><tr><td>brown</td><td>10</td></tr><tr><td>red</td><td>1</td></tr></tbody></table></div> | hair colour         | number of students | black | 7 | blonde | 6 | brown | 10 | red | 1 | accept plotting<br>+/- 1/2 small square | (3)<br><br>A02 1<br>A03<br>1a |
| hair colour     | number of students                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                    |       |   |        |   |       |    |     |   |                                         |                               |
| black           | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                    |       |   |        |   |       |    |     |   |                                         |                               |
| blonde          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                    |       |   |        |   |       |    |     |   |                                         |                               |
| brown           | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                    |       |   |        |   |       |    |     |   |                                         |                               |
| red             | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                    |       |   |        |   |       |    |     |   |                                         |                               |

**Total for Question 1 = 7 marks**

| Question number | Answer                                    | Mark             |
|-----------------|-------------------------------------------|------------------|
| 2(a)(i)         | acrosome<br><br>accept phonetic spellings | (1)<br><br>AO1 1 |

| Question number | Answer                                                                                                                                                                     | Mark             |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| 2(a)(ii)        | <p>part of the sperm cell</p> <p>function</p> <p>Do not award mark if more than one line drawn from box S<br/>Do not award mark if more than one line drawn from box T</p> | (2)<br><br>AO1 1 |

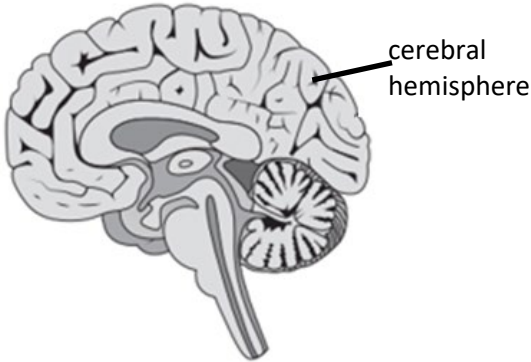
| Question number | Answer                            | Additional guidance | Mark                |
|-----------------|-----------------------------------|---------------------|---------------------|
| 2(b)            | chloroplast / cell wall / vacuole |                     | (1)<br><b>A02 1</b> |

| Question number | Answer                                                                                                                                                                                                            | Mark                |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 2(c)(i)         | <p>C polymer</p> <p><b>The only correct answer is C</b></p> <p>A is incorrect because DNA is not a monomer</p> <p>B is incorrect because DNA is not a protein</p> <p>D is incorrect because DNA is not starch</p> | (1)<br><b>A01 1</b> |

| Question number | Answer                                                                                                                                                                                                                        | Additional guidance                          | Mark                |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------|
| 2(c)(ii)        | <p>A description including two from:</p> <ul style="list-style-type: none"> <li>complementary bases (pairing) (1)</li> <li>A with T / C with G (1)</li> <li>joined by weak (bonds) (1)</li> <li>hydrogen bonds (1)</li> </ul> | <p>award 2 marks for weak hydrogen bonds</p> | (2)<br><b>A01 1</b> |

**Total for Question 2 = 7 marks**

| Question number | Answer                                                                                                                                                    | Mark                                  |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 3(a)            | <p>A to control balance</p> <p><b>The only correct answer is A</b></p> <p>B, C and D are not correct as these are controlled by the medulla oblongata</p> | <p><b>(1)</b></p> <p><b>A01 1</b></p> |

| Question number | Answer                                                                                                                                                 | Additional guidance | Mark                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------|
| 3(b)(i)         | <p>a labelled line touching any part of the cerebral hemisphere</p>  |                     | <p><b>(1)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer                                                                                                                                                                                                                                   | Additional guidance  | Mark                           |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------------------|
| <b>3(b)(ii)</b> | Any two from:<br><br>memory / learning (1)<br><br>vision / hearing (1)<br><br>speech / language (1)<br><br>decision making / problem solving (1)<br><br>conscious thought (1)<br><br>muscle {control / function} (1)<br><br>language (1) | accept communication | <b>(2)</b><br><br><b>AO1 1</b> |

| Question number | Answer          | Additional guidance | Mark                           |
|-----------------|-----------------|---------------------|--------------------------------|
| <b>3(c)(i)</b>  | motor (neurone) |                     | <b>(1)</b><br><br><b>AO1 1</b> |

| Question number | Answer                                                                                                                                                                                                                                                                     | Additional guidance                                                                                     | Mark                           |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>3(c)(ii)</b> | An explanation linking two from: <ul style="list-style-type: none"> <li>• (the pupil) gets bigger / smaller (1)</li> <li>• (because) muscles (1)</li> <li>• (in the) iris (1)</li> <li>• contract / relax (1)</li> <li>• (so the iris) gets smaller/ bigger (1)</li> </ul> | accept dilate or constrict<br><br><br>reject suspensory ligaments<br><br><br>ignore dilate or constrict | <b>(2)</b><br><br><b>AO1 1</b> |

| Question number | Answer                                                                                         | Additional guidance        | Mark                |
|-----------------|------------------------------------------------------------------------------------------------|----------------------------|---------------------|
| 3(c)(iii)       | eyeball is <b>too</b> long / lens is <b>too</b> {thick / curved} / cornea is <b>too</b> curved | accept it can be inherited | (1)<br><b>A01 1</b> |

**Total for Question 3 = 8 marks**

| Question number | Answer                                                                                                                                                    | Mark                                  |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 4(a)(i)         | <p>B evolution</p> <p><b>The only correct answer is B</b></p> <p>A, C and D are not correct as they do not describe the changes in species over time.</p> | <p><b>(1)</b></p> <p><b>A01 1</b></p> |

| Question number | Answer              | Additional guidance                                  | Mark                                   |
|-----------------|---------------------|------------------------------------------------------|----------------------------------------|
| 4(a)(ii)        | 0.7 (million years) | accept answers in the range 0.6 to 0.8 million years | <p><b>(1)</b></p> <p><b>A03 1a</b></p> |

| Question number | Answer                                                                                                                                                                                                                    | Additional guidance                                                                                                          | Mark                                  |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 4(a)(iii)       | <p>An answer including two from:</p> <ul style="list-style-type: none"> <li>compare the fossils / fossil features to other fossils (of a known age) (1)</li> <li>radiometric dating (of surrounding rocks) (1)</li> </ul> | <p>accept depth in the rock layer / stratigraphy (1)</p> <p>accept (dating) the type of tools found with the fossils (1)</p> | <p><b>(2)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer                                            | Additional guidance                  | Mark                                  |
|-----------------|---------------------------------------------------|--------------------------------------|---------------------------------------|
| 4(b)(i)         | <p>characteristics (1)</p> <p>generations (1)</p> | answers must be in the correct order | <p><b>(2)</b></p> <p><b>A01 1</b></p> |

| Question number | Answer                                                                                           | Additional guidance                             | Mark                           |
|-----------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------|
| <b>4(b)(ii)</b> | Any one from:<br><br>size / taste / colour / {ripening time / storage time} / disease resistance | accept any other feature that could be improved | <b>(1)</b><br><br><b>AO2 1</b> |

| Question number | Answer                                                                                                                                                                                                                                                                  | Additional guidance | Mark                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------|
| <b>4(c)(i)</b>  | Step one:<br>One from: <ul style="list-style-type: none"> <li>break cells open / cell {walls / membranes} burst (1)</li> <li>to release DNA (1)</li> </ul> Step two: <ul style="list-style-type: none"> <li>to separate the liquid / DNA from the solids (1)</li> </ul> |                     | <b>(2)</b><br><br><b>AO2 2</b> |

| Question number | Answer                                                      | Additional guidance | Mark                           |
|-----------------|-------------------------------------------------------------|---------------------|--------------------------------|
| <b>4(c)(ii)</b> | to precipitate the <b>DNA</b> / make the <b>DNA</b> visible |                     | <b>(1)</b><br><br><b>AO2 2</b> |

**Total for question 4 = 10 marks**

| Question number | Answer                                                                                                 | Additional guidance                                                                                                                                      | Mark                                      |
|-----------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| <b>5(a)(i)</b>  | <p>Identification</p> <p>3.75 or 4.5 (1)</p> <p>Evaluation</p> <p><math>(4.5 - 3.75) = 0.75</math></p> | <p>award full marks for the correct answer with no working</p> <p>accept any number between 3.7 and 3.8</p> <p>accept any number between 0.7 and 0.8</p> | <p><b>(2)</b></p> <p><b>A03 2a 2b</b></p> |

| Question number | Answer                                                                                                                                                                                                                                                                                                                                                                    | Additional guidance                                                                                                                                                  | Mark                                  |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>5(a)(ii)</b> | <p>An explanation linking two from:</p> <ul style="list-style-type: none"> <li>• (40 kg per hectare) produces the maximum yield (1)</li> <li>• so above 40 kg per hectare the crop yield stays the same / adding more fertiliser does not make a difference to yield (1)</li> <li>• so using more than 40 kg per hectare would {cost more / reduce profit} (1)</li> </ul> | <p>accept 40 kg per hectare is the optimum quantity</p> <p>accept fertiliser would be wasted</p> <p>accept more than 40 kg per hectare would damage the soil (1)</p> | <p><b>(2)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Additional guidance                           | Mark                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|---------------------------------------|
| <b>5(b)</b>     | <p>A description including four from:</p> <ul style="list-style-type: none"> <li>• virus attaches to {host / (bacterial) cell} / infects the (bacterial) cell (1)</li> <li>• virus DNA injected (into host cell) (1)</li> <li>• virus DNA copied / more virus DNA produced (1)</li> <li>• more viruses produced (1)</li> <li>• host cell bursts open (1)</li> <li>• (many) virus (particles) released (1)</li> <li>• <b>lytic</b> cycle (1)</li> </ul> | <p>accept new viruses</p> <p>accept lysis</p> | <p><b>(4)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer                                                                          | Additional guidance                       | Mark                                  |
|-----------------|---------------------------------------------------------------------------------|-------------------------------------------|---------------------------------------|
| <b>5(c)</b>     | <p>less food available / lower crop yield / (insects) {eat / destroy} crops</p> | <p>accept spread diseases to the crop</p> | <p><b>(1)</b></p> <p><b>A02 1</b></p> |

**Total for question 5 = 9 marks**

| Question number | Answer                                                                                                                                                                            | Mark                                  |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 6(a)(i)         | <p>B the distance the ruler falls</p> <p><b>The only correct answer is B</b></p> <p>A, C and D are not correct because they would not allow the reaction times to be compared</p> | <p><b>(1)</b></p> <p><b>A02 2</b></p> |

| Question number | Answer                                                                                                                                 | Mark                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 6(a)(ii)        | <p>C 13.4 cm</p> <p><b>The only correct answer is C</b></p> <p>A, B and D are not correct because they are not the calculated mean</p> | <p><b>(1)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer                                                                                                                                                                                                             | Mark                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 6(a)(iii)       | <p>An explanation linking:</p> <ul style="list-style-type: none"> <li>• (student) J (1)</li> <li>• because the ruler fell the longest distance before it was caught / 15 cm is the longest distance (1)</li> </ul> | <p><b>(2)</b></p> <p><b>A03 2a</b></p> <p><b>2b</b></p> |

| Question number | Answer                                                                                                                                                                                                                                                                                                                                   | Additional guidance                                                                                                                     | Mark                                   |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>6(a)(iv)</b> | <p>Any two from:</p> <ul style="list-style-type: none"> <li>the same ruler (1)</li> <li>distance between {the finger and thumb / hands} / height ruler is dropped from (1)</li> <li>catch ruler with same / dominant hand (1)</li> <li>no stimulant / depressant / drugs taken (1)</li> <li>same environmental conditions (1)</li> </ul> | <p>accept size / length / mass of ruler</p> <p>accept keeping named environmental conditions the same, e.g. noise, room temperature</p> | <p><b>(2)</b></p> <p><b>A03 3b</b></p> |

| Question number | Answer                                                                                                                                                                | Additional guidance                                                                                   | Mark                                  |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>6(b)(i)</b>  | <p>transmit (electrical) {impulses / messages / signals} from the CNS (1)</p> <p>OR</p> <p>transmit (electrical) {impulses / messages / signals} to effectors (1)</p> | <p>accept brain / spinal cord / relay neurone for CNS</p> <p>accept muscles / glands for effector</p> | <p><b>(1)</b></p> <p><b>A01 1</b></p> |

| Question number | Answer                                                                                                                                                                 | Additional guidance                                                                                    | Mark                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>6(b)(ii)</b> | <p>An explanation including two from:</p> <ul style="list-style-type: none"> <li>insulates the <b>axon</b> (1)</li> <li>so nerve impulses travel faster (1)</li> </ul> | <p>accept messages / signals for impulses</p> <p>accept ensures impulses move in one direction (1)</p> | <p><b>(2)</b></p> <p><b>AO1 1</b></p> |

| Question number  | Answer                                                                                                                                                                                                                                                                                                                     | Additional guidance                                                                                                                                                                                                                                                                                                           | Mark                                  |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <b>6(b)(iii)</b> | <p>A description including three from:</p> <ul style="list-style-type: none"> <li>• a chemical is released (1)</li> <li>• neurotransmitter (1)</li> <li>• (neurotransmitter / chemical) <b>diffuses</b> (1)</li> <li>• (across the) synapse (1)</li> <li>• (neurotransmitter / chemical) binds to receptors (1)</li> </ul> | <p>accept named neurotransmitter</p> <p>accept moves from a high concentration to a low concentration</p> <p>reject impulse diffuses across</p> <p>accept (across the) synaptic cleft</p> <p>(neurotransmitter / chemical) triggers an impulse / message / signal in the next neurone (1)</p> <p>by neurotransmission (1)</p> | <p><b>(3)</b></p> <p><b>AO1 1</b></p> |

**Total for Question 6 = 12 marks**

| Question number | Answer                                                                                                                                                                | Mark                                  |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 7(a)(i)         | <p>D an organism that causes disease</p> <p><b>The only correct answer is D</b></p> <p>A, B and C are incorrect because they are not organisms that cause disease</p> | <p><b>(1)</b></p> <p><b>AO1 1</b></p> |

| Question number | Answer                                                                                                                                                                                                                                                                                                                              | Additional guidance                                                                                                         | Mark                                  |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 7(a)(ii)        | <p>Any two from:</p> <ul style="list-style-type: none"> <li>less likely to become <b>ill</b> (with measles) / will have <b>antibodies</b> to protect them (from measles infections) (1)</li> <li>less likely to need medication / hospital treatment (1)</li> <li>disease less likely to spread through a population (1)</li> </ul> | <p>accept <b>memory</b> lymphocytes / cells are formed</p> <p>ignore children become immune</p> <p>accept herd immunity</p> | <p><b>(2)</b></p> <p><b>AO2 1</b></p> |

| Question number | Answer                                                                                                                       | Additional guidance | Mark                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------|
| 7(b)(i)         | <p>Any two from:</p> <ul style="list-style-type: none"> <li>mucus (1)</li> <li>cilia (1)</li> <li>skin / hair (1)</li> </ul> | accept ear wax      | <p><b>(2)</b></p> <p><b>AO1 1</b></p> |

| Question number | Answer              | Mark                                  |
|-----------------|---------------------|---------------------------------------|
| 7(b)(ii)        | (hydrochloric) acid | <p><b>(1)</b></p> <p><b>AO1 1</b></p> |

| Question number | Indicative content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Mark                                  |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 7(c)*           | <p>Advantages of biological control</p> <ul style="list-style-type: none"> <li>• fewer pests</li> <li>• so a higher crop yield</li> <li>• no chemical pesticides used</li> <li>• so no chemical residues in the environment</li> <li>• pest does not develop resistance to the predator</li> <li>• generally cheaper method of pest control</li> <li>• predators can be selective / specific to a pest species</li> <li>• so beneficial species not affected</li> <li>• predator population size can respond to changes in pest population size</li> </ul> <p>Disadvantages of biological control</p> <ul style="list-style-type: none"> <li>• the predator may not find / eat all the pests</li> <li>• so pest population might increase</li> <li>• the predator could eat {useful species / the crop plants}</li> <li>• so food chains could be affected</li> <li>• the predators could move away from the area</li> <li>• so more have to be purchased / they have to be reapplied</li> <li>• predators may take longer to control the pest (than chemical control)</li> </ul> | <p><b>(6)</b></p> <p><b>AO2 1</b></p> |

| Level   | Mark | Descriptor                                                                                                                                                                                                                                                                                                                                                    |
|---------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | 0    | No awardable content                                                                                                                                                                                                                                                                                                                                          |
| Level 1 | 1–2  | <ul style="list-style-type: none"> <li>• The explanation attempts to link and apply knowledge and understanding of scientific ideas, flawed or simplistic connections made between elements in the context of the question.</li> <li>• Lines of reasoning are unsupported or unclear. (AO2)</li> </ul>                                                        |
| Level 2 | 3–4  | <ul style="list-style-type: none"> <li>• The explanation is mostly supported through linkage and application of knowledge and understanding of scientific ideas, some logical connections made between elements in the context of the question.</li> <li>• Lines of reasoning mostly supported through the application of relevant evidence. (AO2)</li> </ul> |
| Level 3 | 5–6  | <ul style="list-style-type: none"> <li>• The explanation is supported throughout by linkage and application of knowledge and understanding of scientific ideas, logical connections made between elements in the context of the question.</li> <li>• Lines of reasoning are supported by sustained application of relevant evidence. (AO2)</li> </ul>         |

| Level   | Mark | Additional guidance                                                                                                                               | General additional guidance                                                                                                                                                                                                                                                      |
|---------|------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | 0    | No rewardable material                                                                                                                            | The level is determined by the areas of indicative content covered within the response.<br>The mark within the level is determined by the detail and/or use of biological terms within each explanation.                                                                         |
| Level 1 | 1–2  | Makes a simple statement about an advantage or a disadvantage of biological control.<br><br>States a consequence of the advantage or disadvantage | <u>Possible candidate responses</u> <ul style="list-style-type: none"> <li>• Ladybirds eat plant pests</li> <li>• Ladybirds eat plant pests and reduce crop damage</li> </ul>                                                                                                    |
| Level 2 | 3–4  | Makes a statement about an advantage and a disadvantage of biological control.<br><br>Explains a consequence of an advantage or a disadvantage    | <u>Possible candidate responses</u> <ul style="list-style-type: none"> <li>• Ladybirds will eat plant pests but ladybirds might also fly away from the crop.</li> <li>• Less pests to eat the crop so the yield will be higher.</li> </ul>                                       |
| Level 3 | 5–6  | Makes statements about advantages and disadvantages of biological control.<br><br>Explains a consequence of an advantage or a disadvantage        | <u>Possible candidate responses</u> <ul style="list-style-type: none"> <li>• Ladybirds will eat plant pests so no pesticides needed. Ladybirds might also fly away from the crop or eat the crops.</li> <li>• Less pests to eat the crop so the yield will be higher.</li> </ul> |

**Total for Question 7 = 12 marks**

| Question number | Answer                                                                                                                      | Mark                                  |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 8(a)(i)         | <p>A bacteria</p> <p><b>The only correct answer is A</b></p> <p>B, C and D are incorrect as they do not cause chlamydia</p> | <p><b>(1)</b></p> <p><b>AO1 1</b></p> |

| Question number | Answer         | Additional guidance | Mark                                  |
|-----------------|----------------|---------------------|---------------------------------------|
| 8(a)(ii)        | 40 000 (cases) |                     | <p><b>(1)</b></p> <p><b>AO2 1</b></p> |

| Question number | Answer                                                                                                                                                                                                                                                                                                                                                           | Additional guidance                                                                                                         | Mark                                  |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 8 (a)(iii)      | <p>Any two from:</p> <ul style="list-style-type: none"> <li>• take antibiotics (1)</li> <li>• vaccination / immunisation (1)</li> <li>• covering mouth when sneezing or coughing / wear a (face) mask (1)</li> <li>• isolation of (infected individuals) / avoid contact with infected people (1)</li> <li>• washing hands /disinfecting surfaces (1)</li> </ul> | <p>ignore take medicine / drugs</p> <p>ignore PPE</p> <p>accept avoid mixing in groups / more ventilation / air filters</p> | <p><b>(2)</b></p> <p><b>AO1 1</b></p> |

| Question number | Answer                                                                               | Additional guidance                                                                    | Mark                    |
|-----------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-------------------------|
| 8(b)(i)         | (because) it cannot be passed from person to person / it is not caused by a pathogen | accept it is caused by consuming alcohol<br><br>ignore it cannot be spread unqualified | (1)<br><br><b>AO1 1</b> |

| Question number | Answer                                                     | Additional guidance                                                                                                       | Mark                    |
|-----------------|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 8(b)(ii)        | calculation<br><br>$(80 \div 90) = 0.8888$ (1)<br><br>0.89 | award full marks for the correct answer with no working<br><br><br><br>accept 0.88 / 0.8 / 0.9 / 0.90 / 1.13 for one mark | (2)<br><br><b>AO2 1</b> |

| Question number | Answer                                                                                                                                                                          | Additional guidance                                                               | Mark                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------|
| 8(b)(iii)       | An explanation linking: <ul style="list-style-type: none"> <li>the risk to health is low (1)</li> <li>(because excess mass) is not around the {waist / vital organs}</li> </ul> | ignore no risk<br><br>accept because the {WHR / 0.75} is <b>less</b> than 0.8 (1) | (2)<br><br><b>AO3 2a2b</b> |

| Question number | Answer                                                                                                                                                                                                                           | Additional guidance                                                                                                         | Mark                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------------------|
| 8(c)            | An answer including two from: <ul style="list-style-type: none"> <li>two (cells produced) (1)</li> <li>diploid / two sets of <b>chromosomes</b> (1)</li> <li><b>genetically</b> identical (1)</li> <li>body cells (1)</li> </ul> | ignore they double / duplicate<br><br>accept a full set of <b>chromosomes</b><br>reject haploid<br><br>accept somatic cells | (2)<br><br><b>AO1 1</b> |

**Total for Question 8 = 11 marks**

| Question number | Answer                                                                                                                                                                                                                                                                                                                                                                                       | Additional guidance                                                                                                                                                                                                                                                                                                   | Mark                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 9(a)            | <p>An explanation including three from:</p> <ul style="list-style-type: none"> <li>• (the mass) will increase (1)</li> <li>• because <b>water</b> will move <b>into</b> the potato cells (1)</li> <li>• water moves across a {partially / semi} permeable membrane (1)</li> <li>• by <u>osmosis</u> (1)</li> <li>• from a high water concentration to low water concentration (1)</li> </ul> | <p>accept weight for mass</p> <p>accept potato absorbs <b>water</b></p> <p>accept correct references to down a water concentration gradient / water potential / low to high {<b>solute</b> / <b>named solute</b>} concentrations</p> <p>maximum two marks if mass change or direction of water movement incorrect</p> | <p><b>(3)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer                                                   | Additional guidance                                                                                 | Mark                                  |
|-----------------|----------------------------------------------------------|-----------------------------------------------------------------------------------------------------|---------------------------------------|
| 9(b)(i)         | $3 \times 3 \times 3 / 3^3$ (1)<br>27 (cm <sup>3</sup> ) | <p>award full marks for the correct answer with no working</p> <p>accept <math>54 \div 2</math></p> | <p><b>(2)</b></p> <p><b>A02 1</b></p> |

| Question number | Answer                                                                                                                                                                                                                                                                                                   | Additional guidance                                                                                                       | Mark                                                   |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| 9(b)(ii)        | <p>An explanation linking two from:</p> <ul style="list-style-type: none"> <li>• cube A takes less time (1)</li> <li>• because cube A {is smaller / has a smaller volume} / surface area to volume ratio of cube A is greater (1)</li> <li>• as A has a shorter <b>diffusion</b> distance (1)</li> </ul> | <p>accept reverse argument for B against all three marking points</p> <p>ignore the surface area of cube A is smaller</p> | <p><b>(2)</b></p> <p><b>A03</b></p> <p><b>1a1b</b></p> |

| Question number | Indicative content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mark                                                    |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|
| 9(c)*           | <p>Plan:</p> <ul style="list-style-type: none"> <li>• any step in preparing the agar plate with a well</li> <li>• use two or more concentrations of kiwi fruit juice / enzyme</li> <li>• method of producing different concentrations of kiwi fruit juice</li> <li>• use a separate Petri dish for each concentration / several wells on one Petri dish</li> <li>• repeat each concentration</li> <li>• use a control / use a Petri dish with a well containing (distilled) water or boiled kiwi fruit juice</li> </ul> <p>Measurements:</p> <ul style="list-style-type: none"> <li>• measure the diameter of the liquid agar / calculate the area of liquid agar (using <math>\pi r^2</math>) / measure the volume of liquid agar</li> <li>• measure how long the set agar takes to be broken down with each different concentration</li> </ul> <p>Controlled variables include:</p> <ul style="list-style-type: none"> <li>• same size Petri dishes</li> <li>• same type / concentration of agar</li> <li>• same depth / volume of agar</li> <li>• plates left for the same length of time</li> <li>• plates left at same temperature / in an incubator / in the same place in a room</li> <li>• same volume of kiwi fruit juice</li> <li>• same source / age of kiwi fruit juice</li> <li>• same size well</li> </ul> | <p><b>(6)</b></p> <p><b>AO2 2</b><br/><b>A03 3a</b></p> |

| Level   | Mark | Descriptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | 0    | No awardable content                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Level 1 | 1–2  | <ul style="list-style-type: none"> <li>The plan attempts to link and apply knowledge and understanding of scientific enquiry, techniques and procedures, flawed or simplistic connections made between elements in the context of the question. (AO2)</li> <li>Analyses the scientific information but understanding and connections are flawed. An incomplete plan that provides limited synthesis of understanding. (AO3)</li> </ul>                                                                                                       |
| Level 2 | 3–4  | <ul style="list-style-type: none"> <li>The plan is mostly supported through linkage and application of knowledge and understanding of scientific enquiry, techniques and procedures, some logical connections made between elements in the context of the question. (AO2)</li> <li>Analyses the scientific information and provides some logical connections between scientific enquiry, techniques and procedures. A partially completed plan that synthesises mostly relevant understanding, but not entirely coherently. (AO3)</li> </ul> |
| Level 3 | 5–6  | <ul style="list-style-type: none"> <li>The plan is supported throughout by linkage and application of knowledge and understanding of scientific enquiry, techniques and procedures, logical connections made between elements in the context of the question. (AO2)</li> <li>Analyses the scientific information and provide logical connections between scientific concepts throughout. A well-developed plan that synthesises relevant understanding coherently. (AO3)</li> </ul>                                                          |

| Level   | Mark | Additional guidance                                                                                                                                                                                                                | General additional guidance                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |      |                                                                                                                                                                                                                                    | The level is driven by the workability of the plan.<br>The mark within the level is determined by the control of variables.                                                                                                                                                                                                                                                                                                                            |
|         | 0    | No rewardable material                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Level 1 | 1-2  | States a relevant part of a plan or a measurement to be taken<br><br>Includes a variable to control.                                                                                                                               | <u>Possible candidate responses</u> <ul style="list-style-type: none"> <li>• Get more than one Petri dish (of agar)</li> <li>• Get more than one Petri dish with the same volume of agar in each one</li> </ul>                                                                                                                                                                                                                                        |
| Level 2 | 3-4  | States parts of a plan including a reference to using different kiwi fruit juice concentrations.<br><br>Controls more than one variable or one variable and a control.                                                             | <u>Possible candidate responses</u> <ul style="list-style-type: none"> <li>• Get two different kiwi fruit juice concentrations and pour into wells in set agar plates.</li> <li>• Get two different kiwi fruit juice concentrations and pour into wells in set agar plates. Make the wells the same size.</li> </ul>                                                                                                                                   |
| Level 3 | 5-6  | Produces a plan including using different kiwi fruit juice concentrations and measures the area / volume of liquid agar or time taken for agar to break down<br><br>Controls more than one variable or one variable and a control. | <u>Possible candidate responses</u> <ul style="list-style-type: none"> <li>• Get two different kiwi fruit juice concentrations and pour into wells in set agar plates. Measure the diameter of the liquid agar.</li> <li>• Get two different kiwi fruit juice concentrations and pour into wells in set agar plates. Measure the diameter of the liquid agar. Make the wells the same size and keep the agar plates at the same temperature</li> </ul> |

**Total for question 9 = 13 marks**

| Question number | Answer                                                                                                                                    | Mark                                  |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| 10(a)(i)        | <p>C genes</p> <p><b>The only correct answer is C</b></p> <p><b>A, B and D</b> are not correct because they are units of inheritance.</p> | <p><b>(1)</b></p> <p><b>3.11B</b></p> |

| Question number | Answer                                                                          | Mark                                   |
|-----------------|---------------------------------------------------------------------------------|----------------------------------------|
| 10(a)(ii)       | wrinkled characteristic is recessive / wrinkled characteristic is not passed on | <p><b>(1)</b></p> <p><b>A03 1a</b></p> |

| Question number | Answer                                                                                                                                                                                                                                                                | Additional guidance | Mark |   |   |    |    |   |    |    |                                                                                                                                    |                                        |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------|---|---|----|----|---|----|----|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| 10(b)(i)        | <table border="1"><tr><td></td><td>R</td><td>r</td></tr><tr><td>R</td><td>RR</td><td>Rr</td></tr><tr><td>r</td><td>Rr</td><td>rr</td></tr></table> <p>correct parental gametes (1)</p> <p>correct offspring genotypes (1)</p> <p>percentage probability = 25% (1)</p> |                     | R    | r | R | RR | Rr | r | Rr | rr | <p>accept rR</p> <p>accept other letters</p> <p>ecf from incorrect parental genotypes</p> <p>ecf from incorrect Punnett square</p> | <p>(3)</p> <p><b>A03 1a and 1b</b></p> |
|                 | R                                                                                                                                                                                                                                                                     | r                   |      |   |   |    |    |   |    |    |                                                                                                                                    |                                        |
| R               | RR                                                                                                                                                                                                                                                                    | Rr                  |      |   |   |    |    |   |    |    |                                                                                                                                    |                                        |
| r               | Rr                                                                                                                                                                                                                                                                    | rr                  |      |   |   |    |    |   |    |    |                                                                                                                                    |                                        |

| Question number  | Answer                                                                                                                                                                                                                                                                                                      | Additional guidance                                                                                                                                                                                                                                                       | Mark                       |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>10(b)(ii)</b> | Any two from: <ul style="list-style-type: none"> <li>grow in a greenhouse (1)</li> <li>(same) soil (conditions) (1)</li> <li>(same) temperature / use a heater (1)</li> <li>(same) light / use a lamp (1)</li> <li>(same) watering / rain (1)</li> <li>eliminate (micro) organisms / insects (1)</li> </ul> | accept enclosed area / (same) carbon dioxide (concentration)<br>accept named soil condition e.g. pH<br>accept optimum temperature<br>accept same humidity<br>accept pathogens / named pathogens<br>accept use pesticides<br>accept control {abiotic / biotic} factors (1) | <b>(2)</b><br><b>AO2 2</b> |

| Question number                         | Answer                                                                                                                                                                                                                                                                                                                                                                        | Additional guidance | Mark                 |                     |                                         |     |    |                                  |    |     |                          |     |    |                                                                       |                         |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|---------------------|-----------------------------------------|-----|----|----------------------------------|----|-----|--------------------------|-----|----|-----------------------------------------------------------------------|-------------------------|
| 10(c)(i)                                | <table><tr><th>feature</th><th>asexual reproduction</th><th>sexual reproduction</th></tr><tr><td>produce genetically identical offspring</td><td>yes</td><td>no</td></tr><tr><td>requires male and female gametes</td><td>no</td><td>yes</td></tr><tr><td>rapid reproductive cycle</td><td>yes</td><td>no</td></tr></table> <p>One mark for each correct row of the table</p> | feature             | asexual reproduction | sexual reproduction | produce genetically identical offspring | yes | no | requires male and female gametes | no | yes | rapid reproductive cycle | yes | no | <p>accept Y / ✓ / true for Yes</p> <p>accept N / X / false for No</p> | <p>(3)</p> <p>AO1 1</p> |
| feature                                 | asexual reproduction                                                                                                                                                                                                                                                                                                                                                          | sexual reproduction |                      |                     |                                         |     |    |                                  |    |     |                          |     |    |                                                                       |                         |
| produce genetically identical offspring | yes                                                                                                                                                                                                                                                                                                                                                                           | no                  |                      |                     |                                         |     |    |                                  |    |     |                          |     |    |                                                                       |                         |
| requires male and female gametes        | no                                                                                                                                                                                                                                                                                                                                                                            | yes                 |                      |                     |                                         |     |    |                                  |    |     |                          |     |    |                                                                       |                         |
| rapid reproductive cycle                | yes                                                                                                                                                                                                                                                                                                                                                                           | no                  |                      |                     |                                         |     |    |                                  |    |     |                          |     |    |                                                                       |                         |

| Question number  | Answer                                                            | Additional Guidance                                                                                                                                                                    | Mark                       |
|------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>10(c)(ii)</b> | {two copies / pairs} of each chromosome / full set of chromosomes | accept 46 chromosomes / a chromosome from the male and a chromosome from the female<br><br>ignore double the number of chromosomes / all of the chromosomes / all the genetic material | <b>(1)</b><br><b>AO1 1</b> |

**Total for Question 10 = 11 marks**

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