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# **GCSE EXAMINERS' REPORTS**

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**GCSE  
BIOLOGY**

**SUMMER 2022**

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# BIOLOGY

## GCSE

Summer 2022

### Unit 1: Biology 1 – Foundation tier

#### General Comments

The questions on this paper were more accessible to the candidates at the start, and the general trend was a general decline throughout the paper. As in previous years, the final two questions, which also appear on the higher tier paper, presented the greatest challenge to candidates. Overall, the attempt rate of the questions was high and consistent throughout the paper, with very few questions being left unanswered by candidates. Questions which required pure recall were weaker than ones where candidates were provided with information to use. Where information is provided, candidates are improving in picking out the relevant information and using it correctly. Graph skills such as plotting and using data from the graph seem to be improving, although care should be taken with drawing lines on graphs. The responses to practical questions was in some cases disappointing, however this could be in part due to the disruption caused by COVID and a lack of experience that these candidates have had in practical work.

#### Comments on individual questions/sections

- Q.1**
- (a) This question was well answered, almost all candidates identified the producer correctly, a few identified top consumer of the whales rather than the tertiary consumer.
  - (b) It was clear that most candidates understood what the arrows represent, but they struggled to express their answer clearly.
  - (c) This question was the best answered question with a facility factor of 87.3.
- Q.2**
- (a) Generally well answered, with most candidates able to recall the function of the leaf and the root hair cell, with more confusion over the xylem and phloem.
  - (b) Most candidates selected the correct terms to complete the sentences on cells and tissues, but found identifying the leaf as an organ harder.
- Q.3**
- (a) This question was very well answered, with most students being able to match at least two parts of the blood with their functions.
  - (b) Most candidates could correctly measure the length of the line. From their workings, it seemed that a lot of candidates did not use the equation given to attempt to work out the actual size of cell. Part (iii) was generally well answered, and where candidates could correctly identify the white blood cell they were able to correctly justify their answer.

- Q.4** (a) Candidates plotting skills were good, with most being able to use the graph or data to determine a difference between the 2 sets of results. Minor errors in accuracy of plotting or drawing the line lost marks for the candidates.
- (b) There were good attempts at the calculation, with lots of candidates able to correctly read data from the graph and use it in the calculation. Candidates were less successful at using the data suggesting the time Blodwen stopped running.
- (c) Recall of the word equation for anaerobic respiration was poor, with many getting confused with the equation for aerobic respiration.
- (d) This question the candidates found most challenging, with the lowest facility factor of 14.6. Candidates were not able to link the continued deep and rapid breathing with oxygen debt. They stated that the muscles needed oxygen, but not in the credit worthy context of breaking down the lactic acid. Where students were credited it was usually for the stand-alone phrase of 'oxygen debt'.
- Q.5** (a) Almost all candidates attempted this question and it was well answered. The statement they had the most difficulty with was 'lichens are plants' being false, as this required using and interpreting information from the paragraph and concluding that as lichens are fungi and algae then the statement is false. The remainder did not pose much problem for the candidates,
- (b) Most candidates could easily access the marks for (i) and (ii). However, they struggled with the practical skills of being able to identify the independent and dependent variables. Some candidates could correctly identify the relationship between the variables, but very few were able to use the information to explain the relationship. Many just restated the relationship, suggesting that perhaps there was lack of knowledge over the meaning of the stem words in the question.
- Q.6** (a) This question required two different conclusions to be drawn from the graph. In most cases, candidates could write one correct conclusion, but then they either wrote the reverse argument or a statement that was correct but not credit worthy as it was not a relationship.
- (b) This question was relatively well answered, and where candidates could name a chemical they could correctly state the effect of that chemical too.
- (c) This question was not answered well, demonstrating a lack of recall of the knowledge of the cleaning mechanism of the lungs and the effect of smoking on it for (i) and (ii). Where students gained marks, it was usually for the smoking related illness.

- Q.7 (a)** Most candidates could use information provided in the question to state that glucose would be present but starch still absent after 30 minutes, which would gain one mark. However, the mean mark of 1.5 shows that few candidates could recall the tests for starch and glucose, or have the knowledge to explain the results in terms of diffusion and particle size. Where students could recall the tests for starch and glucose, many did not add heat to the Benedict's test and therefore lost potentially credit worthy content in their answer. Most candidates attempted the question, only 13.2% leaving it blank.
- (b) The facility factor for this question was relatively low. Where candidates gained credit, it was usually for (i). Only a few candidates could correctly explain the role of bile and/or state where fat is digested.
- Q.8 (a)** Some candidates could recall that oxygen is produced in photosynthesis, but a number stated carbon dioxide. If candidates gained credit for (ii) it was usually for stating glucose is used for energy, and they could not recall the other uses.
- (b) Most candidates could calculate the mean, but marks were lost when they did not correctly round their answer to match the results in the table. Most candidates could recognise the relationship, but gave the incorrect optimum of 35°C or used 40°C from their own knowledge, rather than correctly analysing the data. Candidates responses to (iii) were poor, and usually included the plant dying rather than responses linking the results to enzymes.
- Q.9 (a)** This question the candidates found very challenging with the second lowest facility factor on the paper. If candidates gained credit it was usually for either muscle layer in (i) or suggesting the diameter would decrease in (ii). Very few could correctly recall the structure of the artery or explain the difference in the diameter,
- (b) Some candidates could access part (i) and use the information provided to give one or two differences, however some candidates failed to understand that mean blood pressure is not a structural difference. A small number of candidates who correctly identified valves as the structures were also able to describe their function.
- (c) With a mean mark of 0.9, where candidates gained credit it was usually for part (i). In part (ii) a common mistake was in their expression as they talked about the adaptation being "one cell **wall** thick" rather than "one cell thick".

## Summary of key points

- Candidates could access marks by using the information provided in the question, and should continue to read all the question so that they are able to do this effectively.
- Plotting skills on graphs were generally very good, although care should be taken to look at the scale carefully when it's provided for them, and candidates should take extra care when drawing lines on their graphs,
- Overall, the recall questions were answered least successfully, demonstrating the need for more thorough revision, particularly for structures of blood vessels and the digestive system and the tests for starch and glucose.
- As in previous years, there were times when candidates handwriting was very poor and may have resulted in lost marks. Practice in writing clear responses would be beneficial in some cases.

# BIOLOGY

## GCSE

Summer 2022

### Unit 1: Biology 1 – Higher tier

#### General Comments

This year's paper provided a range of topics from familiar practical work to contemporary scientific topics. Candidates managed to access all questions to a varying degree. Some skills, such as graph work, continue to show improvement and even though accessing practical activities during COVID restrictions has been a challenge, the student's responses to questions based on the specified practical work was good overall.

There are still some areas which continue to provide a challenge to candidates, such as calculation of percentage change, explanations of control experiments and evaluation of scientific research

#### Comments on individual questions/sections

- Q.1 (a)** This part was well answered.
- (b)** The calculation in part (i) did not pose too much of a challenge for most. Some candidates however, failed to recognise that rounding off of the mean should be consistent with other values in the table. In part (ii) many candidates struggled to identify the optimum temperature without reference to a graph. Most candidates in part (iii) recognised the role of enzymes. There was an improvement in explaining the role of the active site's shape during denaturation.
- Q.2 (a)** The response to this item was poor. In part (i) many candidates could identify the muscle layer, however only a small number were able to identify the endothelium. In part (ii) most candidates could suggest a reduction in the diameter of the lumen, however some of the explanations were unqualified, e.g. "fat builds up in the artery" which gained no credit as opposed to "fat builds up on the **walls** of the artery". The better candidates used scientific terms such as atheroma or plaques to gain credit for the explanation mark.
- (b)** Part (i) was answered well with good use of the information provided to give two differences, however some candidates failed to understand that mean blood pressure is not a structural difference. The candidates who identified valves as the structure in part (ii) were also able to provide a correct function.
- (c)** These items had a good response with a facility factor of 63.8. Some candidates lost a mark in part (ii) by talking about the adaptation being "one cell **wall** thick" rather than "one cell thick".

- Q.3** (a) The diagram for parts (i) and (ii) were mostly correct. Part (iii) was a challenge for most. It is expected that candidates should find AO1 recall questions straightforward. However, it is apparent that only the better candidates achieving the highest grades access most AO1 items in an assessment.
- (b) These items had a good response. Familiarity with the enzyme-substrate complex in part (i) was evident. It is a positive sign that candidates appear to be using the command words in the items to better structure questions with more than one mark. This was demonstrated in many of the responses seen in (iii).
- Q.4** Overall, this question turned out to be the most challenging of the whole paper with a mean facility factor of 30.0 for all items. Although not a specified practical, this work is referred to in the Biology Teacher's Guidance 1.2(a), and has been examined consistently for years.
- (a) Candidates were often vague in part (i) talking about getting rid of bacteria rather than killing bacteria. Most failed in (ii) to identify respiration as the process occurring in the flask and then only a few linked the temperature with heat released during this process.
- (b) With a facility factor of 14.9, this item was the second most challenging of the whole paper. Explaining how flask **B** acted as a control experiment for flask **A** required more than a foundation level response of "it is a comparison". A sensible approach to answering this item would have been for candidates to compare the treatments in **Table 4.2**, enabling them to identify the independent variable values as living or dead peas. Candidates would then link the peas being alive to the process of respiration and heat being released causing a temperature rise. An alternate response was accepted allowing candidates who referenced dead peas being unable to respire to access the mark.
- (c) This item proved to be the most accessible for this question, with a facility factor of 41.9. Successful candidates identified the command words "state" and "give", recognising that the response required two parts for the mark.
- Q.5** (a) This item was the most accessible of the whole paper with a facility factor of 72.6. The quality of graphs on the higher tier has improved, especially regarding joining plots. As opposed to the foundation tier, the higher tier provides no scaffolding for graphing questions. The candidates were asked to "produce a line graph". Lines of best fit were accepted in the marking scheme, however not many were seen. The mark for the scale was the one most commonly lost, with weaker candidates using the numbers provided in the table to plot the x-axis rather than providing a linear scale and fitting the results to it.
- (b) Most candidates recognised that this was an osmosis question and some excellent responses were seen. The weaker candidates lost marks by either stating that the "solution" moved, thus negating the credit for osmosis, or failing to indicate which direction the water was moving.

(c) Identification of the isotonic point always provides a challenge. Some candidates identified the concentration from their graph, but not many were able to provide a full explanation. A fair few candidates used the term equilibrium in their answers but did not gain a mark because they did not qualify the term in the context of either water movement being in equilibrium or water/solute concentrations being in equilibrium.

**Q.6 (a)** Candidates did well on these items, particularly parts (i) and (ii). Some candidates lost marks in part (ii) by describing “risk levels” rather than “Nitrate concentrations” as labelled on the y-axis of the graph. There were some good suggestions seen in part (iii), the most common linking lower rainfall to lower run-off. Some candidates did refer to higher rainfall in winter causing higher run-off, however this was not an acceptable answer as the stem asked for a possible explanation for the “annual decrease”.

(b) Eutrophication questions have been consistently used as extended response questions over the years. The mean mark of 2.7 (middle band) reflects the familiarity of many candidates with this work. The more able candidates provided well written coherent paragraphs which contained most of the indicative content. A common misconception seen was candidates explaining that anoxic conditions in the lake was caused by sunlight being blocked from water plants below the surface and leading to less oxygen from photosynthesis

**Q.7 (a)** The facility factor of 33.7 once again demonstrates that recall of facts poses a challenge to many candidates.

(b) This experiment may have been unfamiliar to many. It required candidates to apply their knowledge in unfamiliar settings. The candidates who did better in parts (i) and (ii) were able to apply knowledge gained when studying specified practical work involving the investigation of factors which affect transpiration.

Questions at the end of a higher tier paper tend to require more synthesis of information by candidates. Part (iii) highlights this. Candidates needed to pick up on the clue “Using your knowledge of how nutrients are absorbed” (active transport) and then link this to the information provided in the diagrams, bell jar **B** containing “a chemical which reduces the rate of respiration in root hair cells”. Unfortunately, some candidates shot themselves in the foot by explaining that “less energy is produced from respiration”, thus negating that mark. Although this error is becoming less common there are still some candidates who fail to grasp the first law of thermodynamics.

- Q.8** (a) (i) This item has the second lowest facility factor of the whole paper. Calculations of percentage change have been and continue to be a challenge beyond most higher tier candidates. Most of the candidates who succeeded in calculating a percentage change were also able to give their answer to two significant figures.
- (ii) This was an item based on bioaccumulation and there was a slight improvement in the quality of the response compared to a similar question asked in 2019. Rather than just explaining that mercury was being passed along food chains or descriptions of this, candidates were also referring to an increasing concentration of mercury along the food chain. Most candidates accessed the first marking point by using an unfamiliar diagram to explain how mercury was entering the food chain.
- (b) Some good responses were seen here, but too many of the candidates failed to grasp what was asked by the question. To gain the mark, a benefit of reducing the combustion of fossil fuels was required. Many candidates gave responses such as, "Combustion of fossil fuels releases CO<sub>2</sub> which causes global warming". Although the science is correct, they have failed to apply it to the question, i.e. less combustion = less CO<sub>2</sub> = less global warming.
- Q.9** (a) These items were successfully answered, a possible reflection on the familiarity of the topic to most candidates.
- (b) These items challenged most candidates. They required an interrogation of the text and images provided with a synthesis of their own knowledge. The fourth paragraph of the text provides a way into part (i) by revealing a reduction in the number of ciliated cells. For part (ii), **Images 9.1a and b** provided a starting point for the first mark point and if they had considered the purpose of breathing, i.e. gas exchange, they were able to access the second mark point.
- (c) This item proved the most challenging, with a facility factor of 5.2. Even though the candidates were told to use the information given to evaluate, many gave answers based on personal experience and views. The successful candidates structured their answers by first stating that the conclusion was not valid before then providing the evidence from the text to support their answer, thus gaining one or two marks depending on how much evidence was provided. The less successful candidates picked points from the text, some relevant and others not, but failed to provide a judgement on whether the conclusion was valid or not.

## Summary of key points

- Candidates need to be provided plenty of opportunities to practice percentage change questions in an applied rather than a pure setting.
- Use of current news stories in teaching provide opportunities for candidates to apply biological knowledge in contemporary scientific contexts. They also provide opportunities to develop candidates' ability to evaluate the strength of scientific evidence. This should encourage greater scientific capital and greater resilience when encountering biology in unfamiliar settings during exams.
- Continued emphasis should be given on the purpose of command words in questions, images, texts and diagrams. They provide guidance, information and clues as to how candidates should approach questions.
- Candidates should experience a range of approaches to specified practical work. They should be encouraged to understand the concepts behind different practical methods rather than be bound to a single experiment. This could be through hands-on experience, computer simulations, or paper-based exercises. Opportunities to understand experimental controls should also be provided.

# BIOLOGY

## GCSE

Summer 2022

### Unit 2: Biology 2 – Foundation tier

#### General Comments

This Foundation Tier paper covered a wide range of topics from the Unit 2 specification, including adaptations of organisms, inheritance and homeostasis as well as diseases and treatments. Most of the questions called for short structured answers but others needed more extended writing. Both recall of factual information and analysis of data were required. Opportunities were provided for candidates to use their mathematical and graphical skills and questions set in practical contexts tested aspects of working scientifically.

The earlier questions on the paper proved highly accessible to almost all candidates and showed much positive achievement. Questions towards the end of the paper, particularly those which also formed part of the Higher Tier paper, provided much more challenge. Even so, the percentage of candidates with the confidence to attempt and complete questions remained at over 90%.

#### Comments on individual questions/sections

- Q.1** This question related to mutation in DNA and a family tree for Cystic Fibrosis. Most responses showed very good recall of the nature of mutations and correct analysis of the family tree. When candidates needed to draw particular comparisons between the family and the general population, however, many responses were too vague to gain credit. Almost all answers recognised gene-therapy as a treatment for the condition.
- Q.2** Here candidates were required to respond to data provided in the form of text and photographs relating to *Muscardinus avellanarius* (the dormouse). Most responses scored highly but some marks were lost when answers failed to distinguish behavioural from structural adaptations.
- Q.3** Whilst almost all responses identified the brain as part of the central nervous system fewer identified the spinal cord as the other component. Inadequate recall of the terms for structures in the eyeball was also evident in the answers to this question. Many responses did correctly describe changes in the size of the pupil in relation to light intensity and the better answers included the role of the iris muscles.

**Q.4** This question presented candidates with tabulated data on treatments for kidney failure and required an extended response comparing transplants with dialysis. Many responses confidently and clearly covered the indicative content by identifying the advantages of each treatment, gaining marks within the middle and even higher bands of the mark range – a distinct improvement on previous years. When responses were less successful, it tended to be because disadvantages were included, contrary to the instructions in the question. Good answers to the question on tissue typing showed understanding of the need for matching, in order to avoid the rejection of a transplant.

**Q.5** In the first part of this question, the hormone insulin was usually identified correctly with reference to diabetes but fewer responses showed knowledge of the role of the pancreas.

When presented with a description of a large -scale investigation and a table of numerical results most candidates plotted accurate bar charts. In the best responses, candidates went on to explain the reasons for the given conclusion. When asked about fair testing and the identification of bias, few responses gave pertinent answers and there were many imprecise responses wrongly referring to accuracy and sample size.

**Q.6** Set in a practical context, this question related to the distribution of limpets on two shores. A description of one aspect of a risk assessment was needed but many responses did not gain credit as the risk identified was not linked to an action in the procedure. A few good answers were seen which described the collection of data by random sampling and these referred to techniques for identifying co-ordinates when placing quadrats rather than simply throwing them.

The calculations based on tabulated data were generally well done. Most responses drew a correct conclusion in comparing the results for the two shores and in identifying an anomaly.

**Q.7** This question also appeared on the Higher Tier paper.

When asked to identify advantages and disadvantages of the biological control of pests, many responses did not gain marks because they were either too vague or simply restated the question. The better responses made suitable comparisons with the use of chemical control and identified features such as the absence of pollution and specificity of biological control methods.

In response to a graph showing the effect of biological control on a pest population, many candidates carried out accurate calculations although some struggled to suggest reasons for the trend shown.

**Q.8** This question also appeared on the Higher Tier paper.

The first part of this question dealing with inheritance required definitions of genetic terminology and presented a high degree of challenge to Foundation candidates. Creditworthy responses were few and there was a tendency to describe dominant and recessive alleles as “stronger” and “weaker” genes.

In contrast, there were some good responses to questions related to the inheritance of hair length in cats. Marks were gained for completing the Punnett squares for particular crosses and identifying phenotypes in offspring.

### **Summary of key points**

- The quality of extended responses in this examination was much improved in comparison with previous years.
- Judging by the answers to questions set in practical contexts, the lack of opportunity to carry out practical work appears to have had a negative impact on some aspects of candidates’ skills of working scientifically.
- As in previous years, It is evident that many marks have been lost because sufficient attention has not been given to the wording of questions.
- Candidates would be well advised to give more attention to learning the scientific terms for structures and processes. This would enable valuable marks to be gained from recall of information.

# BIOLOGY

## GCSE

Summer 2022

### Unit 2: Biology 2 – Higher tier

#### General Comments

Following the disruption to learning experienced by candidates since March 2020 it was very pleasing to see many demonstrating a clear understanding of the specification content and an ability to apply their knowledge to novel contexts.

Candidates generally coped well with the mathematical demands of the paper. There was more variation in responses to practical questions.

For Welsh medium candidates it is worth noting that there is a glossary of Welsh terms which will be used in questions and looked for in answers.

#### Comments on individual questions/sections

- Q.1 (a)** Many correct responses were seen. Advantages of biological control in part (i) were answered more successfully than disadvantages in (ii) as a notable number of candidates only gained 1 mark for disadvantages of biological control despite listing two in their response as they were alternatives for the same marking point which referred to the control agent becoming a pest itself.
- (b)** In (i) I & II many candidates recognised that it was necessary to subtract 7 from 38/39 days on the graph to get the correct answer and gain 2 marks. Fewer were able to suggest a reason why it took so long for the number to fall to 20.  
In part (ii) the majority of candidates used the information in the fact file to deduce that the temperatures in Wales would be too low. Part (iii) did not pose any issues.
- Q.2 (a)** The facility factor for this question was 42.5, illustrating that candidates are finding recall of definitions a challenge. All key terms for topic 2.3 are listed in section (g) of the specification.
- (b)** The Punnett squares in (i) and (iii) were completed with little difficulty. Errors seen included diploid gametes and using sex chromosomes. Although, these were far more commonly seen in the foundation tier paper.  
Part (ii) and (iv) were answered well.  
Part (v) required candidates to understand the possible phenotypes produced in a test cross. While (I) did not pose a problem, in (II) in a number of responses only one phenotype; short or long hair was given rather than an answer that both would be predicted if the cat was heterozygous.

- Q.3 (a)** In part (i) many candidates were unable to give a definition of variation. However, part (ii) was answered well.
- (b)** The calculation in (i) was carried out correctly by many but a significant number did not put their final answer to 2 decimal places, therefore only gaining 1 mark out of the 2 available.  
In part (ii) many correctly stated that the height: width ratio is greater on the upper shore but few suggested a correct reason for this difference. Part (iii) was answered well.
- Q.4 (a)** This was answered well, it was one of the most accessible parts of the paper; particularly parts (ii) and (iii) with facility factors of 79.9 and 86.0 respectively.
- (b)** Many candidates did not use correct scientific terminology, referring to electrical impulses as 'signals' or 'messages' failed to gain credit. As did reference to muscles 'moving' rather than contracting.
- Q.5 (a)** Many candidates did not give a correct definition of an invasive species. Omitting reference to the effect of the alien species was a common reason why credit was not given.  
In (ii) many candidates correctly identified the genus and it was pleasing to see that the majority remembered to put a capital letter for the genus.  
In part (iii) few candidates stated whether biodiversity would increase or decrease with a reason. They either described the effect or explained why but very rarely were both seen.
- (b)** In part (i) the majority of candidates correctly stated the number of gametes produced from one mother cell in meiosis.  
Part (ii) posed more of a challenge; many were able to conclude the chromosome number in males they were unable to clearly explain their reasoning.  
In part (iii) whilst many correct answers were seen, many candidates incorrectly referred 'repair of cells' and others to 'growth', showing they had not read the question carefully as they were asked to give a function of mitosis in *adult* ants.
- Q.6 (a)** In part (i) candidates were required to recall the statement from the specification in 2.7 (b), yet there were a large number of incorrect answers referring to all colonies arising from one cell or vague answers referring to each colony being made up of the same number of bacteria. Part (i) was designed to lead candidates into the calculation in (ii).  
Many candidates recognised that they needed to count the colonies on the plate in image 6.1 to complete the calculation in (ii) and then went on to form their conclusion. Some made an error converting their answer to standard form but if they had shown their working out, they were still able to gain 2 marks.
- (b)** Very few candidates correctly, made the link to human pathogens. As a result, this was the least accessible question on the paper.

- (c) In part (i) a large number of candidates appear to be under the misconception that securing the lids of the agar plates with tape prevents entry of air. Part (ii) was answered well, with many candidates gaining full credit, showing a clear understanding of aseptic technique.
- Q.7** (a) The mean for this question was 0.6. However, 10.4% of candidates did not attempt the question. While correct answers were regularly seen, a line with no label was also seen frequently along with the wrong label on the line.
- (b) The QER question enabled candidates to gain the full range of marks. 93.7% attempted the question and the mean mark gained was 2.3. Many were able to get into the bottom band by identifying structures X and Y. The best candidates gave an excellent account of the processes of ultrafiltration and selective reabsorption. In some cases, there was confusion over which molecules are moved into the Bowman's capsule, with reference to protein seen. In addition, when describing selective reabsorption often candidates did not state *all* glucose is reabsorbed and *some* water/ salts.
- (c) The vast majority of candidates recognised the size of protein molecules prevents them from entering the Bowman's capsule with fewer gaining the second mark point.
- Q.8** (a) The facility factor for this question was significantly higher than that for the definitions tested in 2 (a) and 3 (a) (i) indicating that candidates found this question more accessible than other definitions.
- (b) Part (i) was answered well and was the most accessible question on the paper with a facility factor of 96.2. In part (ii) while some excellent responses were seen, common errors included reference to the bases *producing* amino acids rather than coding for them and a generic description of amino acids linking together to form protein instead of the HER2 protein in this example.
- (c) This proved to be one of the most challenging questions on the paper with one of the lowest facility factors. Although 95% of candidates attempted the question, vague answers referring to the monoclonal antibody attaching to the cancer *cell* rather than the antigens on the cell were common. Very few candidates referred to the drug entering the cells and simply restated the question, that the monoclonal antibody targets the cancer cells directly.
- (d) It was pleasing to see many candidates gaining two marks. In some cases, candidates only gained 1 mark as they listed two diagnostic tests.
- Q.9** (a) While lots of correct answers were seen in (i) and (ii), in several cases candidates did not gain credit as the label lines did not touch the relevant structure.
- (b) Some excellent answers were seen where candidates fully described and explained the results. This proved to be a good discriminator as weaker candidates often gained 3 marks through giving a description of the results but did not go on to explain the results obtained.

## Summary of key points

- Examiners continue to have difficulty deciphering the handwriting of some candidates. Illegible answers can lead to marks being lost.
- Recall of definitions remains a challenge. All required are outlined in the specification.
- Candidates should take time to read questions carefully and check that their responses fully answer the question. To facilitate this, candidates should be encouraged to highlight key information and command words provided in the stem of the question.
- When completing calculations, it is recommended that candidates always show their working out as they may be able to gain some marks even if their final answer is incorrect.

## **BIOLOGY**

### **GCSE**

**Summer 2022**

#### **Unit 2: Biology 2 – Foundation tier - contingency**

##### **General Comments**

This paper was available for candidates to sit if they were unable to sit the original Unit 2 foundation examination due to Covid 19. Very few candidates sat this paper, so only general observations can be made.

Candidates' performance was similar to that of the other papers set this year with the exception of the QER and the graph where candidates performed less well. This possibly was because the QER question was based on practical work which may have been impacted upon by the pandemic. In the graph question, no initial points were plotted which meant that a number of candidates extrapolated the line to the origin, losing marks. Recall of information was often poor but candidates were able to engage with information given to provide simple explanations.

## **BIOLOGY**

### **GCSE**

**Summer 2022**

#### **Unit 2: Biology 2 – Higher tier - contingency**

##### **General Comments**

This paper was available for candidates to sit if they were unable to sit the original Unit 2 higher tier examination due to Covid 19. Very few candidates sat this paper, so only general observations can be made.

Again, the performance of candidates was similar to that of the other papers set this year. Questions that were based on practical or field work proved very challenging. As in the other papers, candidates had difficulty in expressing their ideas in continuous prose. Descriptions on the whole were good, explanations less so. Questions requiring knowledge such as definitions were variable with few providing detailed accurate answers. Mathematical skills were good for the most part.



WJEC  
245 Western Avenue  
Cardiff CF5 2YX  
Tel No 029 2026 5000  
Fax 029 2057 5994  
E-mail: [exams@wjec.co.uk](mailto:exams@wjec.co.uk)  
website: [www.wjec.co.uk](http://www.wjec.co.uk)