

International GCSE

Biology (9201)

9201/1

Report on the Examination

June 2025

REPORT ON THE EXAMINATION: INTERNATIONAL GCSE BIOLOGY (9201) 9201/1 CODE – JUNE 2025

The exam paper this series demonstrated a strong level of accessibility across its entirety. There was clear evidence of engagement with all sections, as nearly all students attempted every question. Responses spanned the full range of the paper, indicating that it successfully catered to students of varying abilities.

Mathematics remains a notable area of strength across the cohort. Encouragingly, even students working at the lower end of the attainment spectrum were able to gain full marks on certain mathematically demanding questions. This reflects positively not only on student preparation but also on the clarity and structure of the questions set at the higher levels of demand.

It has been observed that some centres continue to deliver content not required within the current specification. Centres are reminded to consult the latest version of the specification to ensure curriculum coverage is both relevant and aligned with assessment expectations. Teaching material beyond the scope of assessment risks disadvantaging students by diverting time and focus away from examinable content.

Overall, the paper provided a fair opportunity for students to showcase their understanding and skills. Continued attention to specification accuracy, coupled with the strong mathematical performance observed, will help secure further improvements in attainment across future series.

QUESTION 01

1.1

This proved to be an accessible and effective start to the paper. The vast majority of students gained at least one mark, with a significant number achieving full marks. The question provided good discrimination across the ability range.

1.2

Just over half of students correctly identified a substance that produces carbon dioxide when burned. However, some responses indicated a misinterpretation of the question, with answers describing the consequences of carbon dioxide production rather than naming a relevant substance.

1.3

More than two-thirds of students were able to identify global warming as a consequence of elevated carbon dioxide levels. Vague responses such as “air pollution” did not meet assessment criteria. Nonetheless, a broad range of answers was provided, with the majority recognising the link to rising global temperatures.

1.4

This was very well answered, with nearly all students correctly identifying bacteria as the organisms responsible for decay.

1.5

This question showed the strongest discrimination within Question 1. Around two-thirds of

students gained at least one mark, with nearly half of these achieving full marks. Students who did not gain credit typically repeated information from the question stem or offered simple reversals. Any mention of enzymes was ignored.

1.6

Fewer than half of students answered this estimation-based mathematics question correctly. Misinterpretation of the instructions was common; some students counted all squares or only fully covered squares, rather than correctly estimating the number covered in total by decay. As a result, this was the least effective discriminating question within the paper.

1.7

Despite the challenges seen in 1.6, nearly 90% of students successfully transferred their answer and applied it correctly in part 1.7.

1.8

A clear majority correctly identified 92% as the anomalous result in the given data set.

QUESTION 02

2.1

This question was well understood by the cohort, with nearly all students successfully identifying the nucleus.

2.2

A high proportion of students accurately selected the correct terms (bases and proteins) to complete the sentences.

2.3

Fewer than one-third of students correctly recognised Mendel as the scientist associated with experiments on pea plants. Misidentifications with Darwin or Lamarck were common. Phonetic spellings of "Mendel" were accepted where appropriate.

2.4

This was a well-answered question, with approximately 90% of students identifying that tall plants would exhibit the dominant characteristic.

2.5

The vast majority of students correctly completed the Punnett square diagram, indicating a strong grasp of genetic cross representation.

2.6

Almost all students who attempted this question correctly identified "Tt" as representing tall offspring. A small number did not draw the required circle around the correct answer, suggesting they may not have read the instructions thoroughly.

2.7

Just under half of students were able to identify a suitable environmental condition that could affect plant height despite identical alleles. Answers referencing "nutrients" were not accepted as alternatives to minerals. Vague or unqualified references to environmental factors were ignored.

2.8

This question was answered well, with nearly all students scoring at least one mark and around two-thirds achieving full marks.

2.9

This question was also answered well, with nearly all students scoring at least one mark and around two-thirds able to link both boxes correctly.

QUESTION 03**3.1**

This question was very well answered, with nearly all students correctly recognising that bacteria produce toxins.

3.2

Just under half of the cohort could correctly name an antibiotic, with “penicillin” being the most common correct response. A notable number of students gave inappropriate answers such as “paracetamol,” which does not target bacterial infections and was therefore not creditworthy.

3.3

Again, just under half of students correctly identified that doctors are advised not to overuse antibiotics to reduce the development of antibiotic-resistant bacteria. This question offered good discrimination, with more able students demonstrating a clearer understanding. Less successful responses often referred incorrectly to bacterial “immunity” or gave vague references to mutation without explanation.

3.4

Over half of students gained at least one mark, typically for identifying the use of personal protective equipment such as masks or gloves. Fewer than a quarter went on to receive credit for correctly citing the risk of the glass petri dish. Vague or generic references to protective clothing or sterilisation were not accepted.

3.5

Just under half of students gained one mark for identifying that the paper disc soaked in water was a control, but less than a quarter explained its purpose in comparing the effect of plant extracts. This was a strongly discriminating question, with higher ability students scoring more consistently.

3.6

This multi-step calculation question discriminated well. Nearly half of the cohort achieved full marks, and around two-thirds scored at least one mark. Measurement errors were common, particularly in calculating the diameter of the clear zone. Difficulties with unit conversions between centimetres and millimetres also contributed to lost marks.

3.7

Just over half of students scored two marks, with nearly all gaining at least one. The question proved an excellent discriminator, as only the most capable students correctly interpreted the relationship between the size of the clear zone and bacterial death.

3.8

This was among the most challenging parts of Question 3, with only around a third of

students scoring the mark. The most able students were most successful in identifying why the conclusion may not be correct.

3.9

Approximately half of students achieved one mark, typically for recognising the increased yield resulting from genetically modified cotton plants. However, fewer than 10% gained full marks, with only the most able students demonstrating deeper insight linking the reduction to insect attacks and the higher chance of photosynthesis.

QUESTION 04

4.1

Over two-thirds of students gained the mark, with the most frequent correct response explaining that birds migrate because they cannot survive cold temperatures.

4.2

Approximately one-quarter of students scored the mark. Credit was awarded only when answers referenced contraction of wing muscles.

4.3

This standard demand question was well answered. Nearly four fifths of students successfully recalled the word equation for aerobic respiration and gained both marks.

4.4

Set at high demand, fewer than one in ten of students could identify that fat releases twice as much energy as the other food types. Only the most able students made the connection between this and birds carrying less mass during migration.

4.5

Graph-drawing skills were generally strong. Nearly two-thirds of students earned full marks. The most common error among those who did not earn full marks was neglecting to label the Y-axis with “distance travelled during migration (km).”

4.6

Just under half of students scored all three marks. Although most correctly calculated the numerical difference as 56,000, many then struggled to convert this into a percentage. A frequent mistake was using 64,000 as the denominator instead of 8,000.

4.7

This question, spanning standard and high demands, proved challenging. Only around one in ten students achieved full marks. Nonetheless, it was one of the most effective discriminators on the paper, clearly differentiating between levels of student understanding. The topic of natural selection is an area where students need to develop more.

4.8

Around a quarter of students correctly described how to determine whether two birds belonged to the same species.

QUESTION 05

5.1

Approximately two fifths of students correctly identified the respiratory system. A frequent error was the use of the incorrect term "respiration system," which did not gain credit. Centres are reminded that precise terminology from the specification is essential for awarding marks.

5.2

This was one of the most discriminating questions on the paper, producing a full range of responses. Around three-fifths of students achieved at least one mark, but less than a tenth gained all five. High-attaining students offered clear and accurate descriptions of the kidney's role. Responses that neglected to use the term reabsorbed, instead stating that ions or water were simply "absorbed", did not meet the criteria at this level. Notably, all glucose is reabsorbed during the process, a specification point many overlooked. This was a common area of the specification that had been taught to a level beyond the specification and students wrote at length about ultrafiltration and the loop of Henle which is not required at GCSE level.

5.3

This question was broadly accessible, with over two thirds of students scoring the mark. The most common correct response identified that there would be no need to wait for a donor or that a donor was not required. Vague references to the process being "faster" or "cheaper" were not accepted.

5.4

This was less well answered than 5.3, with fewer than half of students identifying a valid advantage of kidney transplantation. Many repeated information from the question stem, such as "not needing dialysis every week," which required further qualification to gain credit—typically by linking it to reduced hospital visits. Other successful answers cited its longer-term cure.

5.5

This extended response question generated a wide spread of performance and functioned as an excellent discriminator. The majority of students were placed in Level 1, typically scoring one or two marks. Common responses included identifying that fluid B was more suitable because it did not contain urea, without extending to explain why the values of individual substances mattered.

Level 2 responses incorporated reference to movement of substances, such as diffusion of glucose or potassium ions.

Level 3 required not only identification of movement, but also an explanation, for example, recognising that diffusion of glucose would reduce its concentration below the normal range. Fewer than one in ten students reached Level 3.

5.6

This high-demand question was attempted by most of students. One third of students gained one mark by identifying that more water would be reabsorbed. However, fewer than a tenth went further to correctly explain that sodium ions would become diluted as a result

QUESTION 06

6.1

Over half of students successfully identified either the aorta or the left ventricle, with many recalling both structures. This question was set at high demand, and responses referring only to the ventricle or a general artery were not sufficient for credit.

6.2

This high-demand question functioned as a strong discriminator. To reach Level 2, students were required to correctly link the thicker muscular or elastic walls of arteries to their role in withstanding higher pressure. Some students addressed this by explaining why veins, which carry blood at lower pressure, have thinner muscular walls—an approach that was credited when clearly articulated. However, vague references to vessel walls without mention of muscle or elastic layers did not meet the criteria for Level 2. The majority of students gained at least one mark, with around two-thirds scoring in Level 1 and a further quarter progressing to Level 2.

6.3

Higher-attaining students demonstrated a good understanding of blood clotting, with approximately two fifths scoring three or four marks. Common errors among less able students included incorrect recall of the role of platelets and confusion between fibrinogen and fibrin, often reversing their functions. Nevertheless, most students gained at least one mark.

6.4

Set at the highest level of demand, this question discriminated effectively. As anticipated, less than a tenth achieved full marks. However, a notable three-fifths of students gained partial credit—most often for recognising that fewer or no proteins would be broken down. MP2 was the most frequently awarded. Only the most able students secured MP1 and MP3, demonstrating a deeper level of understanding.

6.5

Also set at the highest demand, this question proved challenging. Around a tenth of students scored one mark, and less than a twentieth gained two. Many responses simply repeated the question stem, stating that blood types A and O were safe to give, or recited information directly from Table 8. Where marks were awarded, they were most commonly for identifying that neither O nor A donor cells carried B-antigens.