



General Certificate of Secondary Education

Science B 4462 / Biology 4411

BLY1F Unit Biology 1

Report on the Examination

2008 Examination – June Series

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Science B / Biology

Foundation Tier BLY1F

General

There were seven questions on the paper. The first five questions appeared only on the Foundation Tier and were targeted at grades E, F and G. The final two questions (termed Standard Demand) were common to Foundation and Higher Tiers. These were targeted at grades C and D.

Most candidates followed the rubric instructions correctly. There were however a few candidates who did not. For example when asked to state one example or give one reason, candidates should not give a list of possible alternatives.

Performance on questions addressing 'How Science Works' was very variable. Centres are reminded that the examination will test both sections 10 and 11 of the specification.

Question One (*Low Demand*)

In part (a) most candidates were able to identify all four organs. However significant numbers hedged their bets with answers such as brain or another additional organ, thereby losing the mark.

Most candidates in part (b) gave cancer or lung cancer. Other acceptable answers included heart disease, bronchitis and emphysema. Weaker candidates did not know the names of diseases, so they wrote, for example liver disease. A minority of candidates had misunderstood the question and gave answers such as tar or nicotine.

In part (c)(i) the vast majority of correct answers used the term addiction, with the occasional hooked. Incomplete responses usually referred to the manufacturer selling more cigarettes or making more money, but missed the addiction aspect. Some candidates thought this would reduce the number of cigarettes smoked, and a few suggested it would help people stop smoking. Very occasionally candidates suggested it would decrease the addiction.

Weaker candidates tended to give muddled answers in part (c)(ii) such as buying more because they knew they were addictive. Some wrote in terms of stopping smoking and others about the risk of cancer due to nicotine. Many included comments about making more money.

Question Two (*Low Demand*)

In part (a)(i) many candidates answered in terms of no pollution or smell in the desert, whilst others thought that the scent of urine would attract predators. Others answered in terms of energy conservation rather than water conservation.

Almost all candidates gave acceptable answers in terms of cooling or of safety from predators for part (a)(ii).

In part (a)(iii) relatively few candidates answered in terms of enhancing heat loss. Most responses were in terms of preventing sinking into the sand. Some candidates described how large feet could help the rat run quickly whilst others answered in terms of transfer of heat from the sand to the rat.

Whilst there were good answers in terms of overheating in part (b), many candidates thought that not sweating could be dangerous for the rat as it would not remove salts, toxins or chemicals. Some expressed the idea that too much water would be kept in the rat.

Question Three (Low Demand)

In part (a) most candidates recognised the sperm, but there was much confusion between egg, fertilised egg and embryo. Several candidates identified **D** as the ovary.

In part (b) the most common misconception was that the embryo would be put back into the ovary. Several candidates thought that the embryo would need to be fertilised. Many included treatments such as freezing or splitting and also suggested checking the baby.

A majority of candidates correctly identified one quarter in part (c)(i), but significant numbers chose one third.

In part (c)(ii) almost all candidates correctly stated that the chance of success would be low, but only the more able candidates used the data to give figures for success.

Most candidates found difficulty in expressing their ideas in part (c)(iii). Some stated that it was cheaper to use one embryo. Others described how embryos could be used for other mothers or for a second attempt at IVF. A small number of candidates described how more embryos could be used for research. Relatively few used information in the data table about the high number of twins that had been born across the age range of mothers.

Question Four (Low Demand)

In part (a)(i) a majority of candidates gave acceptable answers in the range 40–42, but several gave answers in the 30s.

It was surprising how many candidates failed to copy the name of the period correctly in part (a)(ii). It was often difficult to decide whether the candidate was referring to Palaeocene or to Pliocene. Several candidates hedged their bets by giving a range of periods.

In part (a)(iii) whilst most candidates correctly deduced the relationship, there were many who gave answers which did not come from the drawing, pandas being a popular choice.

In part (b) nearly all candidates gave answers that attempted to address the question. The most common correct responses were that Darwin was unable to prove his ideas and that people had contradictory religious beliefs. Very few candidates gave answers relating to the mechanism of heredity not being known. The most common errors were suggestions that humans and primates were different. For example, primates looked too different or behaved differently. Some candidates simply suggested that people did not believe Darwin. Better candidates would support this with suggestions that it was a new idea, or that only Darwin thought he was right, or that people did not want to believe that they were related to primates. A significant proportion of candidates incorrectly suggested Darwin had **no** evidence; however **insufficient** evidence gained a mark.

Question Five (Low Demand)

Antibiotics and painkillers were frequently confused in part (a), indicating misunderstanding of what these drugs actually do.

Most candidates were able to read the graph correctly in part (b)(i), but many read off the number of weeks to one of the peaks on the graph, rather than to where the line crossed the threshold level.

In part (b)(ii) it was pleasing to note that most candidate described the overall shape of the graph correctly, and that most attempted to include figures related to changes in the direction of the line. The weakest candidates merely noted that the concentration increased.

Question Six (Standard Demand)

Comparatively few candidates referred to diet in part (a), most referring instead to the various control variables.

Most candidates answered part (b) correctly with the majority of these responses referring to exercise programmes or number of calories, with only a few answering meeting or times. Weaker candidates tended to answer in terms of weight loss or diet constituents.

In part (c) a significant number focused on techniques such as measuring wrongly, misreading instruments, using the wrong equipment. The term mean was often misunderstood, leading to candidates stating that the scientists should have taken the average. Many thought there were fewer people taking part in group 2, not realising that the figures referred to people who had completed the trial.

In part (d) many candidates stated that, as more people had stuck to the diet in group 1, it was easier and therefore a better diet. Other candidates failed to refer to the data, merely citing two variables or analyzing whether it was a fair test.

Question Seven (*Standard Demand*)

Part (a)(i) saw weaker candidates merely stating that carbon dioxide is a pollutant. Even better candidates most frequently stated that the Sun's rays are reflected outwards from the atmosphere. It was worrying how many candidates stated that carbon dioxide destroys the ozone layer thereby letting in more heat.

Weaker candidates again fell back on the pollution catch-all in part (a)(ii). Acid rain and loss of habitat had many supporters at this level.

In part (b)(i) the weakest candidates were content to merely repeat the stem of the question. It was fairly common for candidates to confuse carbon with carbohydrates and answer in terms of food health. Many answers were too vague, for example they want to make a difference

Part (b)(ii) found weaker candidates tending to answer in terms of British food needing less packaging therefore less pollution or gave patriotic answers such as British is best. Many fell back on the catch-all sustainable development.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results Statistics](#) page of the AQA Website.