



# Examiners' Report Principal Examiner Feedback

January 2025

Pearson Edexcel International Advanced  
Subsidiary Level In Biology (WBI13) Paper 01  
Practical Skills in Biology I

## Introduction

The paper was as accessible as those in previous series.

It is essential that candidates cover all of the core practicals **and** all of the recommended additional practicals (RAPs), any of these may be examined on this paper. Two of the three questions in this series were based on RAPs, and a significant number of candidates demonstrated little familiarity with them, especially that examined in question 3.

The importance of having a clear grasp of what command words mean was also illustrated well in some of the questions on this paper, and comments are made in what follows.

**1a** There was a large number of candidates who were able to get both marks for this question. The most common error was made by those who wrote xylem for one mark but then put phloem. A further issue is that candidate should be strongly encouraged to just write 1 answer on each line as only the first one is marked, even if the second one is correct they will get 0.

**1bi** Although the subject of a core practical, this question was answered correctly by fewer than half the entry. A worrying minority use the word strength in their definition, even though it appears in the stem.

**1bii** This question was answered well with a substantial number of candidates able to score all three marks. This is clear evidence that the core practical is being either carried out or watched on a video or simulation. This is very encouraging. Only a very few candidates scored zero and three out of four was the second most common mark after four out of four. A surprising number of candidates failed to describe the use of fibres of different lengths. Other ways in which marks were lost was by those who mentioned a safety precaution, but did not give a reason, and those who were using weights which would be far too large.

**1ci** This tabulating data question is still one of the easiest on the paper. It still caught out a few hundred candidates, the most often seen error being the inclusion of units in each cell of the table. Another error was seen in those who did not obtain full marks was the inconsistent use of decimal places.

**1cii-iii** Marks were evenly spread from zero to full marks on this question. By far the most common errors on ii were to express the answer as a fraction, which, of course does not constitute having done a calculation, and to not include the minus sign, which is vital here to show the direction of the gradient.

lii was quite pleasingly, answered, especially since errors carried forward were allowed so the use of a fraction was not penalised again, for example.

**1di** This question was, rather surprisingly, not very well answered. Over half of the entry did get the mark, however, the other half were at sea. A good number commented on the relationship between gradient and species rather than the relationship between fibre length and tensile strength.

**1dii** This was intended to be a demanding question, but it was rather disappointing that only just over half of the candidates achieved any marks at all. The most common problem was to set off with no intention of discussing **structure** as demanded by the stem. Such answers were almost certainly destined to obtain no marks.

**2a** Marks for this question were spread nicely and evenly across zero, one and two. Many showed a thorough understanding of the function of the pollen tube, whereas others were only able to point out one element required and a similar number had really no useful statements to make.

**2bi** The graph plotting question proved, as is normally the case, to be one of the most mark yielding on the paper, with only just over a quarter of candidates achieving less than full marks. However, it was still not uncommon to see either non-linear or totally inappropriate Y axes. Some, which although linear, would not allow accurate plotting to be carried out. Another fairly frequently seen error was made by candidates who extrapolated to zero.

**2bii** Questions such as this, asking for a description of a practical procedure in a novel situation, but rooted in a core practical, are at the heart of this paper. It was pleasing, therefore, to see some candidates obtaining full marks and over 1/3 able to get at least four marks out of the six available. Only very few candidates achieved one or zero. Marking points 2,4 and 6 were the ones least commonly seen.

**2biii** Questions asking for a comment on some results are often quite poorly answered so it's pleasing to see on this one a good quarter of candidates obtaining full marks and a further half obtaining two out of three. It was very pleasing to see a good number of candidates able to not just comment on the actual numbers but also talk about the lack of measures of variability or a control.

**3ai** As mentioned in the introduction, there was a sense of an unfamiliarity with the recommended additional practical of heart dissection. The practical calls for an investigation of the structure of the heart using dissection. Thus, it would be expected that candidates would know the names of some of the main features asked for in this question. In the event, only a minority were able to name all four parts. On the other hand only a minority named none of them.

**3aii-iii** The unfamiliarity mentioned came out most clearly in ii. Very few candidates were able to draw a sensible line, indicating that, maybe, a heart had never been dissected. It is, of course, appreciated that it may be difficult for schools to get hold of hearts for such a

practical, but it must also be said that there are many online resources that could help with this. Centres are encouraged to facilitate a heart dissection or allow students to watch an animation or a film showing the same.

Inline with a lack of familiarity with dissection was a demonstration of rather poor drawing skills in iii. It was very rare to award all three marks here, the most frequently withheld one being that for a sensible label of a cut surface of the muscle of the ventricle. This was either due to the complete lack of the label or, more commonly, labelling the back wall of the ventricle that could be seen in the photograph. Heart strings were more commonly drawn and labelled correctly, but attention to detail was sometimes lacking. This was most particularly shown by those who showed no branches in their heartstring drawing.

**3b** The marks were fairly evenly spread across the five possibilities of 0 to 4 out of four. It was surprising, however, to see a significant number of candidates who made no attempt to point out similarities. The syllabus definition for a compare and contrast questions states “Looking for the similarities **and** differences...”. Candidates should be trained to look for both in a compare and contrast situation.

**3ci** It is still quite surprising to see so many candidates stumbling over naming an independent or a dependent variable. By far most common reason for zero marks on this question was in candidates who quoted the dependent rather than the independent variable. This amounted to nearly half of the entry.

**3cii** The calculation here was well done with only a small minority unable to gain at least one mark. Of those who did gain just one mark, the most common reasons for not gaining the other were either not noticing that a percentage *increase* was required and thus dividing by the wrong denominator or incorrect rounding.

**3ciii** This was intended to be a demanding question at the end of the paper but proved to be much more demanding than had been anticipated. Only a small number of candidates were able to gain even one mark. It was clear that many had not understood what was required and simply talked about the effect of DCM on the functioning of the heart. Candidates should always be encouraged to read questions very carefully in order to tease out what is being asked.

## **Paper summary**

The advice in this section will include nothing particularly new in comparison with this section in previous series. The highs and lows do not seem to change much.

- Make a thorough study of all the command words from pages 68-69 of the syllabus, This can be refined by an analysis of the many past papers now available in order to get a sense of which command words are most commonly used on this paper.
- Make sure all nine core practicals and all 5 recommended additional practicals have been addressed in some way or other. Every question will be in the context of one or more of these 14 practicals.
- Think carefully about the way in which scientific experiments are designed. It's the same for all of them regardless of what the topic is.
- Read every question very carefully, do not be tempted to rush. Particularly important in some cases is the command word much having been said about this in the body of this report.
- Make a habit of setting calculations out whenever you do one so that anybody looking can see how you got to the answer. In that way, if you do get it wrong, you may still get credit for what you did.