



Sample marking guidelines for School Certificate Science

The following marking guidelines have been developed for selected questions from the 2001 SC Specimen Test in Science. These guidelines indicate the approach that would be taken to marking questions.

For each question, the following are typically included:

1. The syllabus outcomes that are targeted by the question.
2. The marking guidelines, which show the criteria to be applied to responses along with the marks to be awarded in line with the quality of the responses.
3. A sample answer or some points that answers might include. Sample answers indicate the scope and depth of treatment expected, and are not intended to be prescriptive. Similarly, the points that could be included in answers are not intended to be an exhaustive list, but rather an indication of the considerations that students could include in their responses.

Marking guidelines will generally require some refinement at the Marking Centre to take account of unanticipated responses that students present.

In a standards-referenced framework, test questions are closely linked to syllabus content and outcomes. Expectations of the question are to be clear in the wording of the question. Marking guidelines will be developed at the same time as the examination questions, by examination committees. The development of marking guidelines will be guided by the Board's *Principles for Developing Marking Guidelines in a Standards-Referenced Framework*, published in Board Bulletin Volume 9 Number 3 (May 2000).

Sample Marking Guidelines – School Certificate Science

Question 62 (6 marks)

The diagrams show the formation of a volcano. Use the diagrams to explain how this type of volcano forms.

Outcomes assessed: 5.9, 5.16, 5.18, 5.19, 5.21

MARKING GUIDELINES

Criteria	Marks
Features in both diagrams correctly identified, with the sequential relationship between the features and the formation of a volcano explained	5–6
Statements correctly identifying features in both diagrams with a description of each feature OR Features in only one diagram correctly identified, with the sequential relationship between the features and the formation of a volcano explained	3–4
Statements correctly identifying features shown in diagrams	1–2

Sample answer:

Plate A is moving in the direction of the arrows to slide under Plate B. This results in cracks in the plates in their contact region.

As Plate A continues to slide further down under Plate B, the resultant heat and pressure causes plate rock to melt. This melted rock is forced up through the growing cracks in Plate B until it emerges at the surface as a volcano.

Marks

Question 63 (11 marks)

- (a) Ignoring cost, and using the information provided,
(i) state a disadvantage of making cars out of gold;

1

Outcomes assessed: 5.11, 5.16, 5.19

MARKING GUIDELINES

Criteria	Marks
One disadvantage stated	1

Answers could include:

- The car's density would be too high.
- The known reserves of gold will only last 25 years.
- There is very low world production of gold.

- (ii) explain an advantage of making cars out of gold. **Marks**
2

Outcomes assessed: 5.11, 5.16, 5.19

MARKING GUIDELINES

Criteria	Marks
An explanation, showing cause and effect, relating chemical inactivity of gold to corrosion rate	2
A statement that gold is chemically inactive OR A statement that gold will not corrode/rust	1

Sample answer:

Gold is chemically inactive, so it will not corrode.

- (b) Aluminium is the most abundant metal in the Earth's crust. Despite its abundance, aluminium is one of the more expensive to obtain. Using the information provided, explain a reason for this. **2**

Outcomes assessed: 5.18, 5.19

MARKING GUIDELINES

Criteria	Marks
A statement linking high chemical reactivity of aluminium to a result	2
A statement only about the high chemical reactivity of aluminium OR A statement only about the result	1

Sample answer:

Aluminum is chemically active, therefore it is difficult to extract it from its ore.

- (c) Use the information given, or your knowledge, to answer the following question. **3**

State a property of metals for which it is difficult to use substitute materials. Explain your answer.

Outcomes assessed: 5.7, 5.11, 5.18, 5.21

MARKING GUIDELINES

Criteria	Marks
Correct property given, with an explanation giving a reason why that property is difficult find a substitute material for	3
Correct property given, with a statement describing that property	2
Correct property given	1

Answers could include:

- Electrical conductivity – metals are currently the only commonly available electrical conductors
- Malleability / ductility –only metals are able to be bent or stretched and maintain their properties
- Strength at high temperatures – no other common substance retains its strength at high temperatures

(d) From your knowledge, use ONE example to describe the impact of technology on the use of metals.

3

Outcomes assessed: 5.1, 5.3, 5.12, 5.18, 5.21

MARKING GUIDELINES

Criteria	Marks
Appropriate example identified and description given of how the impact is related to the example	3
Appropriate example identified and a statement made identifying an impact of the technology	2
Appropriate example identified	1

Sample answer:

The development of the blast furnace has enabled us to extract iron from iron ore to produce steel. Iron is the most commonly used metal in society, partly due to this technology.