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Examiners' Report
Principal Examiner Feedback

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Paper 01

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General comments

The paper consists of 80 marks assessed by a mixture of different question styles, including multiple-choice questions, cloze and short open response questions, calculations. All questions should be answered in the allowed time of 1 hour 20 minutes.

The paper aimed to give candidates of all abilities the opportunity to demonstrate their knowledge and understanding. Candidates seemed to be well prepared on the whole, and most could attempt all the questions which was evidence of the overall accessibility of the paper. There seemed to be no evidence of candidates being short of time. The paper produced a very wide spread of marks indicating that the paper successfully discriminated between students of varying abilities. The three groups of five multiple choice sections were designed to become more difficult as the paper progressed and this was reflected in the performance of the candidates. As has been the case in the past it was noticeable that Section B, which contained free response questions designed to test practical and experimental skills, proved more difficult to most students than did most questions in Section A.

Section A

Multiple choice questions 1 – 5

This first bank of multiple-choice questions provided an accessible start to the examination for most students. A high proportion of students were able to score 4 or 5 marks on this part of the examination. Question 3 proved most difficult.

Question 6

This question was usually answered well but some students penalised themselves by drawing more than one line from each box.

Question 7

(b) Most students gained one mark, either for saying forces were equal or that they were balanced. Few students gained both marks and the idea of no resultant force was rarely seen. The idea that forces were opposite (although not needed) was also rare.

Question 8

(a) Most students were familiar with the function of arteries however a significant number of responses mis-read the question and answered by describing the structure of arteries.

(b) Good use of specialist vocabulary was seen by some students here, describing circulatory systems in terms of systemic and pulmonary systems. Whilst this was not needed it did show good understanding and often helped explanations. Many students limited their answer to the heart, describing it as either 2 or 4 chambered. Alternatively they tried to describe what happened to the blood as it flowed around the body but often these were confused answers.

Question 9

(a) This cloze question was answered correctly by most students.

(b) Many spoke just of the gas rather than mention particles as requested in the question. A significant number of responses failed to score as they described the arrangement of particles in a gas, usually referring to the particles having space or spreading out without attempting to explain how this may lead to pressure.

Question 10

Generally most students had the idea of lack of exercise or poor diet. A minority misunderstood the question and answered in terms of the effects on the body.

Multiple choice questions 12 – 16

This bank of multiple-choice questions again proved accessible with many students were able to score 3 or more marks on this part of the examination.

Question 17

Whilst part a was usually answered correctly fewer candidates were able to suggest hydrogen as the gas that would be produced with some suggesting carbon dioxide would be produced.

Question 18

This was often answered correctly but some students were obviously not familiar with the ideas of current in a parallel circuit.

Question 19

(a) Many students had the correct idea of using anhydrous copper sulphate and gave the correct colour change. Most wrong answers were in terms of pH. Some students mixed up the test with lime water. Testing the boiling point was mentioned frequently but many students just referred to 'boil it' without giving more details.

Question 21

(a) There were many incorrect responses here with many students drawing a vertical arrow or arrows in the direction of the orbit rather than to the centre of the Earth.

(b) Most students could give a correct use.

Multiple choice questions 24 – 28

Questions 25, and 28 were accessible to most students. Students found Q27 to be the most difficult.

Question 30

Most students were able to correctly substitute into the given equation and give a correct unit.

Question 31

(b) These terms appeared familiar to most students but many got them the wrong way round that the right way round.

Question 31

(b) Most students scored on this question. The most common incorrect answer was to suggest 'more' acid and/or marble.

Question 33

(b) It was pleasing that many students were able to produce a balanced equation. The most common mistakes were CaCO_2 rather than CaCO_3 or missing out the 2 before HCl.

Question 34

Generally this was answered well though again some students penalised themselves by drawing more than one line from each box.

Question 35

Some students failed to score as they could not correctly rearrange the given equation.

Section B

This section contained questions which were mainly practically based. Candidate responses in the section were often not as good as those in Section A.

Question 36

(a) Most students appear confident in the meaning of these terms.

(b) Whilst the symbol for a voltmeter was known to most students some incorrectly placed it in series rather than parallel.

(c)(i) Repeat **and** average is required to ensure reliability rather than just take repeat readings.

(d)(ii) Some very good responses were seen but many students found it difficult to express their answer clearly or were vague and repetitive which often made it difficult to understand what they were trying to say. Whilst many students did identify that 1.7V does not fit the pattern or trend shown on the graph fewer students were able to successfully qualify or quantify their response.

Question 37

(b) The correct terminology was required here. Incorrect responses included measuring tube, measuring beaker or measuring jug.

(b) The most obvious safety precaution here is the use of safety goggles. Many students incorrectly suggested the use of gloves.

Question 38

(a) The best responses focussed on what was happening in different sections of the graph and used data from the graph. Many students scored 1 mark here for answers that whilst correct lacked some detail.

Summary

The following are a few general comments based on the performance of students on this paper.

- Students should be given as much practical experience as possible, such as in setting up electrical circuits and using a range of measuring apparatus.
- Students need to know the correct names of laboratory equipment.
- Students need to ensure they read the question carefully as many were giving answers that were already given in the question and so did not gain credit.
- Students should be given practice so that they are confident at rearranging a given mathematical equation.
- Students should ensure to answer the question applying their knowledge to the context provided.
- Students should be reminded that to increase reliability we repeat and average.
- Answers need to be written so that the meaning is clear, eg "the temperature of the water increases", rather than "it increases".
- Students should be encouraged to avoid vague generic answers. Instead they need to give more detail and qualify their answers. eg Gravitational force instead of gravity.

