

INTEGRATED SCIENCE

SUBJECT 5006

PAPER 2

GENERAL COMMENTS

Generally the paper was poorly done. Very few candidates got above 50% and the majority of these were in the 20-30% range. Most answers given by candidates indicated common sense rather than science principles. The candidates found the Physics question the most challenging.

SECTION A

QUESTION 1 (a)

- (i) Most candidates could identify part A even though some wrongly spelt it as noise.
- (ii) The majority of candidates scored at least two of the three marks.

QUESTION 1 (b)

- (i) This question was correctly answered by many.
- (ii) The majority of candidates failed to interpret the table they reproduced the data given in the table without explaining the charges that occur to inhaled air.

QUESTION 2 (a)

- (i) This question was fairly well done. A good number of candidates used the word reversed in defining the reversible reaction.
- (ii) Most candidates were able to give vanadium pentoxide as the catalyst but could not give the reactions for named catalysts. Some candidates gave the wrong oxidation number for vanadium in vanadium pentoxide.

QUESTION 2 (b)

This part of the question presented problems to candidates. A number of them were able to state that powdered zinc has small particles, but could not relate this to an increased surface area and increased surface area and an increased contract of reactants, to get all the three marks.

QUESTION 3 (a)

- (i) The answers to this question showed that the candidates were guessing. About 50% of the candidates gave the charge on the balloon as negative and the other 50% as positive
- (ii) This proved to be a very difficult question for the majority of the candidates. The candidates were expected to show that water conducts charges away as a result charge would build up if air is very dry.

QUESTION (b)

This question was well done by the majority of candidates who managed to get at least 2 out of 3 correct precautions. Most frequent errors were stating safety precautions outdoors, when the question specifically asked for precautions indoors.

QUESTION 4 (a)

While the calculations seemed straightforward, most responses were wrong. A fairly good number of candidates multiplied 15N by 10M instead of 1,0M. Some candidates did not even know the formula. In 2 candidates used the formula $\frac{MA}{VR}$ which did not apply in this case. The correct formula is $\frac{\text{work done on load}}{\text{work done by effort}} \times 100\%$.

QUESTION 4 (b)

- (i) Candidates identified only friction the factor that reduces efficiency. Weight of the machine as the other answer was rare. The most common wrong responses for factor 2 was load.
- (ii) Ways of overcoming friction were correctly stated, but the use of lighter materials rarely appeared.

QUESTION 5 (a)

- (i) Almost everyone identified fertilization.
- (ii) The definition of fertilization was correct in most cases.

QUESTION 5 (b)

Candidates gave general methods of birth control, when the question was specifically asking for barrier methods and natural methods.

SECTION B

QUESTION 6 (a)

- (i) Most candidates gave the expected answers; they did not have problems defining transpiration.
- (ii) The uptake of minerals as function of transpiration was not very common. The most popular answer given was the cooling effect.

QUESTION 6 (b)

Candidates gave a general explanation instead of breaking down the answer to separate effects of windy, dry and sunny weather on a maize crop. They failed to base their answers on the general factors that affect transpiration, i.e. humidity, light intensity and air currents.

QUESTION 7 (a)

- (i) Hydrogen and nitrogen were correctly identified as the elements that make up ammonia.
- (ii) The Haber process was described fairly well by the majority of candidates.

QUESTION 7 (b)

A fairly good number of candidates thought that electricity was generated at Sebakwe river.

QUESTION 8 (a)

Most candidates got the 3 marks for labeling parts A, B and C. A few candidates wrongly gave A as a commutator.

QUESTION 8 (b)

This question was poorly answered. Many candidates described a generator operating on diesel, while others described an electric motor.

QUESTION 8 (c)

Many candidates could not clearly state how the current could be increased. Common wrong answers were: use of big magnets and increasing the number of coils.

QUESTION 9 (a)

This whole question was poorly done by the majority of candidates.

- (i) Candidates' answers showed that they were guessing. About 50% of the candidates identified forces acting on top as tensional and the other 50% as compressional.
- (ii) The most common example of supported beam given was a diving board. Some candidates wrongly qualified the type of bridge as beam and pier or arch.

QUESTION 9 (b)

- (i) This was a very difficult for most candidates. Very few were able to state that a truss consist of many members.
- (ii) Candidates managed to give one correct answer that trusses are strong. They failed to identify economy, stability, high mass to strength ratio and ability to distribute load as responses to this question. As a result they were only able to access only one of five available marks.

QUESTION 10 (a)

- (i) Instead of naming and explaining two ways of getting infected by a water-borne disease, most candidates indentified two water-borne diseases. Candidates could not clearly state the spread of bilharzia. 'Dirty water' and 'germs' were used for contaminated water and pathogens.
- (ii) The candidates who did not have problems with part (i) did not have

QUESTION 10 (b)

Dehydration was a common answer to this part of the question. The Osmotic balance in cells was not mentioned by virtually all the candidates.