INTEGRATED SCIENCE

SUBJECT 5006

PAPER 2

GENERAL COMMENTS

Generally, the overall performance of the June candidates was satisfactory. At least this showed a great preparedness of the candidates' towards the examination.

QUESTION 1

(a) (i) Most candidates responded correctly, i.e. candle in G blows out first. Wrong responses which were common were that the candle in G melts fast or the candle would get finished or fall.

(ii) Fairly done. Wrong responses which were common were identification of gases present and not comparing amounts of gases present. Some candidates stated percentages of gases in exhaled air but left out percentage in inhaled air. Therefore there was no comparison.

(iii) Candidates correctly identified oxygen as the gas used up by the burning candle.

(b) (i) Well done by the majority of the candidates. However, from the responses given, weak candidates interchanged the processes breathing, respiration and gaseous exchange.

(ii) The equation for respiration was fairly done. However, the majority of the candidates either correctly indentified reactants or products. Some candidates gave an equation for photosynthesis. Teachers should emphasize on how to write a word equation as consisting of reactants and products.

QUESTION 2

(a) Most candidates were able to give the products of electrolysis, hydrogen and oxygen but were unable to bring out the decomposition of the electrolyte by an electric current.

(b) (i) K and L were correctly identified as oxygen and hydrogen by most candidates. However, a few candidates interchanged oxygen and hydrogen.

(ii) The names of the possible electrodes were well given in most cases. Few candidates have copper, rhodium, zinc and magnesium instead of the correct carbon or platinum electrodes.

(c) The function of the ammeter, i.e. to measure current was correctly given by most candidates. However, the majority were not familiar with the functions of the variable resistor, i.e. to control current.

QUESTION 3

(a) A good number candidates were able to state the products of dry distillation and their uses. However, most wrong answer given was ammonium instead of ammonia or ammonium liquor.

(b) (i) The question was generally a challenging one for the candidates. Expected answers for the uses of coal included coking, power generation at Hwange, curing of tobacco in agriculture, heating water in boilers and used as a fuel in ships and trains. Some candidates confused coking with cooking. The use of coal in the blast furnace was also a common response.

(ii) Common answer was very hot or has a high heating value which was correct for a more efficient fuel. Wrong responses which were commonly given were that coke has higher carbon content than coal. The fact that coke causes less pollution was not well known by most candidates.

QUESTION 4

(a) Well answered by most candidates and only a few gave reinforced concrete instead of concrete.

(b) Most candidates were unable to state the effect of push and pull forces. They could not link push and compression, pull and tension.

(c) Candidates failed to bring out uses of triangles in a truss. Wrong answers included strong in tension and compression and strength to mass ratio – instead of withstanding shearing forces or stability.

QUESTION 5

(a) Most candidates were able to identify the sperm duct, testis and the respective function. However, a few candidates failed to give the function of the testis; instead they gave storage of sperms as the answer.

(b) Definition of fertilization was well answered. However, those who got it wrong were mixing terms like sperms and ovules instead of sperm and ovum. Most candidates got the part of production of zygote correct.

(c) Positive answers given were low sperm count, damage by STI, poor quality of sperms and cancer came out clearly. However, some candidates gave wild answers like tight pants, excessive intake of alcohol, diabetes and vasectomy.

SECTION B

QUESTION 6

(a) (i) Well answered by most candidates, though a few used organisms not shown on the food web.

(ii) The concept of a pyramid of numbers is well understood by the majority of the candidates. However, wrong responses from (a)(i) were carried down to the pyramid. Some drew four (4) numbered tropic levels but did not state the organisms.

(b) A few candidates were able to link the process to the organism. However, some gave organisms only and the processes linked to the nitrogen cycle instead of the carbon cycle.

QUESTION 7

(a) (i) Almost all candidates failed to give the observation, i.e. colour changes. The correct explanation however was given by most candidates.

(ii) Most candidates correctly gave the reasons for using powdered reactants but in most cases failed to state that small particles increase surface area.

(b) Most candidates got the answers limestone and hot air correct. However, they failed to state the functions of hot air and limestone.

QUESTION 8

(a) Generally well answered although in some cases the material was referred to as rubber instead of plastic. The most recurring wrong answers were copper and bad conductor of heat/electricity instead of plastic and insulator.

(b) Most candidates were able to calculate current by applying Ohms Law. However, the majority did not know the formula for the calculation of power and units were also left out.

(c) R and S could not be identified correctly. However, commonly given wrong answers were sulphuric acid as the electrolyte. Some interchanged R and S.

QUESTION 9

(a) Candidates did not do well on this question.

(i) The majority of the candidates used non-uniform scales, could not label the axis correctly. Others placed effort on the vertical axis and load on the horizontal axis. Some candidates could not join the plotted points.

(ii) Most candidates failed to find values from the plotted graph.

(b) (i) Well done by most candidates. The most common correct answers were bridges and dam walls.

(ii) Most candidates were able to explain the use of arcs in structure, i.e. strong in both tension and compression and for decoration.

QUESTION 10

(a) (i) Most candidates showed that they were not aware of the stages of tooth decay. Cavity was taken as a part of the tooth whereas candidates were expected to state the formation of plaque, action of bacteria, and formation of acid and creation of cavity through the enamel down to the pulp.

(ii) Candidates were able to give pain and tooth removal as the correct answer. However, most candidates did not mention sensory receptors and their link to pain.

(b) This part of the question was well answered by most candidates. However, the question required candidates to state specific factors about HIV/AIDS, i.e. cannot be cured, caused by a virus, which is difficult to study and destroys the immune system.