

Examiners' Report/
Principal Examiner Feedback

November 2011

360Science

GCSE Science
Multiple Choice Paper C1b (5008)

GCSE Chemistry
Multiple Choice Paper C1b (5036)

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5008/ 5036 (C1b) Examiners' Report November 2011

Foundation Tier

The first four questions of this foundation tier paper were generally well answered. Candidates showed a good understanding of the properties required of useful hydrocarbons such as propane and most recognised the process of burning a hydrocarbon in oxygen as combustion. 82% of candidates understood that hydrocarbons contain carbon and hydrogen only. The product of the combustion of hydrogen in oxygen was less well understood with just 32% of candidates realising that water was the substance formed and 42% of candidates believing that carbon dioxide is formed. The chemical symbol of hydrogen was well known with 78% of candidates getting this correct.

Whilst candidates had a good understanding of the process of fermentation and its products, they found it difficult to understand the difference between the percentage of alcohol in a drink and the units of alcohol in the drink. The majority of candidates believed that 35 ml of whisky contained more alcohol than 175 ml of red wine.

Candidates are still unsure of the properties of new materials. In Q11 just 40% of candidates realised that Gore-Tex is used in jackets to make them breathable and in Q12 just 54% of candidates understood that Thinsulate is used to make a jacket a better insulator, with 36% thinking that it is added to jackets to make them waterproof. The use of Kevlar in materials was better understood with 77% recognising it as a material which could be used in jackets to protect against knife attacks.

Candidates found Q14 and Q15 challenging and did not show a sound understanding that nitrogen and oxygen are found in the largest amounts in the Earth's atmosphere, with 49% of candidates believing that oxygen and carbon dioxide are found in the largest amounts. Only 24% of candidates could recall that oxygen was thought not to be in the Earth's earliest atmosphere.

Q18 and Q19 were challenging for candidates with just 40% of students being able to recall the name of the salt used to flavour food and in Q19, just 19% of candidates recognising the processes involved during desalination.

Candidates also found the questions on emulsions difficult, just 39% of candidates could recall that an emulsion is a mixture of two liquids and 41% of candidates understanding that an emulsifier molecule requires both a hydrophobic and a hydrophilic part.

Higher Tier

Candidates performed well on the overlap questions from 17 to 24, with the exception of Q19. Just 36% of candidates could recall the processes

involved in desalination. Candidates showed a good understanding of the biofuels and their disadvantages, and the reasons for recycling aluminium.

In Q26, candidates still have problems understanding that nanoparticles are not smaller than individual atoms, however the use of nanoparticles in sunscreen is better understood with 51% correctly identifying why nanoparticles rather than conventional sized particles are used.

Candidates are still having problems understanding how Gore-Tex works with only 45% getting this correct.

Candidates generally showed a good understanding of fuels and the fractionating column. However in Q33, just 27% of candidates knew crude oil does not enter the column as a liquid. Q34 was also challenging for candidates with just 39% of candidates being able to balance the equation correctly. The incomplete combustion of a hydrocarbon was well understood with 84% of candidates understanding why carbon monoxide is toxic.

Candidates found the last section on new fuels difficult. In Q37, 26% believed that a toxic product was formed when hydrogen was burnt. In Q38, only 33% of candidates could select the correct balanced equation for the combustion of hydrogen in oxygen.

In Q39, just 39% could recall the correct conditions for the conversion of sugar into ethanol, with 28% of candidates believing that yeast alone is required with no water, and 27% of candidates believing that a temperature of 80°C is required. Only 28% of candidates could select the correct balanced equation for this reaction.

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