OXFORD
INTERNATIONAL
AQA EXAMINATIONS

INTERNATIONAL AS CHEMISTRY

(9620) CH01 Paper 1
Report on the examination

January 2021

REPORT ON EXAMINATION: INTERNATIONAL AS CHEMISTRY 9620 UNIT CH01 January 2021

The paper differentiated well between students of differing ability. All the questions were answered correctly by some students. The best students were able to answer the questions well especially the unstructured calculations. Some students lost mark in equations because they failed to check that they balanced in terms of the number of atoms and/or the charges. Handwriting was often difficult to read, introducing the possibility of ambiguity, especially with some state symbols in equations. There was no evidence from scripts to suggest that students were short of time to complete the paper.

QUESTION 01

01.1 Many students scored both marks, but several students did not give the correct relative mass of the electron.

01.2 Generally well answered; most students could state the number of each particle in the atom but many could not complete this for the ion.

01.3 This was generally answered well although a few students divided by 100.

01.4 Many students omitted state symbols in the equation.

01.5 Many students gave incorrect answers that included a magnetic field. Quite a number of students did not attempt this question.

01.6 Well answered by many students. Errors included dividing by ‘v’ rather than ‘v^2’.

01.7 Quite a lot of students did not convert the mass into kg and so did not score full marks in this question.

QUESTION 02

02.1 Very well answered on the whole. The students that did not score full marks generally failed to take account of the reacting ratios in the equation.

02.2 Many students gave a correct answer; some students failed to notice that the question told them that the excess of zinc oxide had already been removed and gave details of that as well.

02.3 Most students converted the temperature and pressure into the correct units and rearranged the equation. Common errors included failure to use the reacting ratio from the equation or not realising that there were two gases formed.

02.4 Many students could not balance the equation.

QUESTION 03

03.1 The majority of students completed the question correctly.

03.2 This was not well answered by many students; the most common error was stating that delocalised electrons moved through molten magnesium oxide.

03.3 This was well answered with many students scoring three or four marks.

03.4 The intermolecular forces in CH_3F was very often stated to be hydrogen bonding rather than dipole-dipole forces; many students did not state that these forces were between the molecules. A few students thought that covalent bonds were breaking.

03.5 Many structures of aluminium chloride were poorly drawn; some students drew dot and cross diagrams rather than showing the covalent bonds.

03.6 A few students scored both marks here; many students did not realise that they should have shown the structure of a dimer.

QUESTION 04

04.1 Only a few students could give a completely correct definition; many students scored one mark.

04.2 Many students could answer this correctly.

04.3 Students found this question challenging. Many students failed to recognize the number of bonds being broken and formed; common errors included missing the C-O bond or missing the O=O bond.

QUESTION 05

05.1 This was answered well by most students but several scripts were left blank.

05.2 Many students scored the first mark but the second mark was not scored often; attraction to the bonding electrons was often omitted.

05.3 Many could state the role of sulfuric acid but were unable to write the correct ionic equation.

05.4 Some students answered this well.

05.5 Generally answered well.

05.6 Students generally stated that a precipitate would form when acidifying silver chloride with hydrochloric acid; a few knew that silver chloride would be formed but did not state that this was a precipitate.

05.7 A few students gave the equation for the reaction occurring in sunlight rather than the absence of sunlight.

05.8 Many students answered this well; a few students gave explanations that were poorly expressed.

05.9 The majority of students identified chlorine as the substance being oxidised but could not give a correct explanation using oxidation states.

QUESTION 06

06.1 Many students answered this well; common errors included reference to electrons in the p block rather than the p orbital.

06.2 This was quite well answered by many; some students referred to a ‘giant covalent bond’ rather than stating that there were many covalent bonds in a giant covalent molecule.

06.3 The majority of students scored the first mark; several students did not score the second mark as they did not refer to the attraction of the nucleus to the outer electrons.

06.4 Many different elements were given; of those who stated boron as the element, only some went on to achieve full marks in the question.

06.5 Well answered

06.6 Many different elements given; only a few students stated the correct one.

06.7 Many students scored full marks on this question; a few students misread the question and gave the formula for beryllium nitrate.

06.8 Many students could answer this correctly.

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OXFORD INTERNATIONAL AQA EXAMINATIONS
GREAT CLARENDON STREET, OXFORD, OX2 6DP
UNITED KINGDOM

enquiries@oxfordaqaexams.org.uk
oxfordaqaexams.org.uk