

Principal Assessor Report 2003

Assessment Panel:

Chemistry

Qualification area

**Subject(s) and Level(s)
Included in this report**

Chemistry (Standard Grade)

Statistical information: update

Number of entries in 2002	
Pre appeal	22,744
Post appeal	22,746

Number of entries in 2003	
Pre appeal	22,621

General comments re entry numbers

The total number of candidates is very similar to 2002.

Grade boundaries for each subject area included in the report

Knowledge and Understanding

Maximum mark

General = 30

Credit = 30

Grade boundaries expressed as a percentage mark in brackets.

Year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
2002	20 (66.6%)	14 (46.7%)	17 (56.6%)	12 (40%)	9 (30%)
2003	22 (73.3%)	16 (53.3%)	18 (60%)	13 (43.3%)	10 (33.3%)

Problem Solving

Maximum mark

General = 30

Credit = 30

Year	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5
2002	19 (63.3%)	13 (43.3%)	19 (63.3%)	15 (50%)	12 (40%)
2003	22 (73.3%)	15 (50%)	20 (66.7%)	16 (53.3%)	13 (43.3%)

Comments on grade boundaries for each subject area

In general, the grade boundary scores have moved up in both levels to take account of the relative degree of difficulty of the papers. This impacted more in Credit than General level.

Comments on candidate performance

General comments

It was felt that the candidate group was of a very similar standard to last year's. Despite the observation that both papers were very accessible to candidates, many markers commented that performance in the Credit paper was poorer than might have been expected for such a paper. Examination of scripts revealed a lack of fundamental chemical knowledge, suggesting that candidates, in many cases, had not prepared properly for the examination. They had simply not learned basic facts as has been observed in previous years.

Areas of external assessment in which candidates performed well

General Level

Grid questions 1 – 4 and 8

9(a) table

10(a)(ii) trends in flammability and viscosity

10(a)(iii) identifying propane as a gas

10(b) decane identified as alkane

10(c)(ii) $X = C_3H_6$

11(c) substance to increase pH of water

12(a) bar chart

13(c) chopped liver

14(a) production of hydrogen

14(b) un-reactive metal

14(c) control factor

15(a) molecular formula for ethylene glycol

15(c) synthetic

16(c) product of burning hydrogen

17(d) metal to produce larger voltage

18(a) test CO_2

19 flow chart

20(a) relationship

20(b) extrapolation

Credit Level

1(a) protons = electrons

1(b) mass number

2(a) fertilisers

3(a) butene → butane

3(b) isomers

10(b)(i) balancing equation

10(c) tetrahedral shape

12(a) graph

12(b) estimate from graph

13(a) silver nitrate

13(b) covalent

13(c) hydrogen

15(a) spectator ions

17(a) enzyme

19(a)(i) placing croc clips

19(a)(iii) lower reading

Areas of external assessment in which candidates had difficulty

General Level

7 Grid question on neutralisation and filtration

16(b) identification of neutralisation

17(c) reason for cell running down

Credit Level

2(b) making ammonia

10(a) definition of fuel (found surprisingly difficult by many candidates)

11(a)(i) isotopes (Perhaps 50% of candidates chose “isomers”)

11(a)(ii) most abundant isotope (Do candidates understand the meaning of “abundant”?)

11(b) covalent bond

11(c) number of electrons in ion

14(b) polypropene (3 – 4% of candidates answered correctly)

16(b)(i) blue/black colour (candidates seem not have referred sufficiently closely to diagram)

16(b)(ii) ion – electron equation (Although a good number of candidates did this well).

17(b) hydrolysis

Recommendations

Feedback to centres

Despite the fact that SQA recently reminded centres of the arrangements relating to grid questions, numbers of candidates continue to circle more than two boxes in grid questions. In open grids, many candidates circle one box only, although the practice for several years has been to have two correct responses to such questions.

As last year, many markers commented on the striking lack of basic knowledge of many candidates. It is suggested that centres examine ways by which the learning of the basic definitions and language of chemistry can be facilitated.