

2000 Chemistry SG Credit
Finalised Marking Instructions

Strictly Confidential

These instructions are **strictly confidential** and, in common with the scripts entrusted to you for marking, they must never form the subject of remark of any kind, except to Scottish Qualifications Authority staff. Similarly, the contents of these instructions must not be copied, lent or divulged in any way now, or at any future time, to any other persons or body.

Markers' Meeting

You should use the time before the meeting to make yourself familiar with the question paper, instructions and any scripts which you have received. Do **not** undertake any final approach to marking until **after** the meeting. Please note any points of difficulty for discussion at the meeting.

Note: These instructions can be considered as final only after the markers' meeting when the full marking team has had an opportunity to discuss and finalise the document in the light of a wider range of candidates' responses.

Marking

The utmost care must be taken when entering and totalling marks. Where appropriate, all summations for totals must be carefully checked and confirmed.

Where a candidate has scored zero marks for any question attempted, "0" should be entered against the answer.

Recording of Marks

The mark for each **question**, where appropriate, should be entered **either** on the grid provided on the back page of the answer book, **or** in the case of question/answer books, on the grid (if provided) on the last page of the book. Where papers assess more than one element, care must be taken to ensure that marks are entered in the correct column.

The **Total** mark for each paper or element should be entered (in red ink) in the box provided in the top-right corner of the front cover of the answer book (or question/answer book).

Always enter the **Total** mark as a **whole number**, where necessary by the process of rounding up.

The transcription of marks, within booklets and to the Mark Sheet, should always be checked.

Standard Grade Chemistry
Credit

Part 1 – 20 marks

1	a	D and F	1 or 0	CLOSED
	b	C and E	1 or 0	CLOSED
	c	B and E	1 or 0	CLOSED
2	a	B and C	1 or 0	CLOSED
	b	C	1 or 0	
3	a	A	1 or 0	
	b	D	1 or 0	
4		A and C	2 or 1 or 0	OPEN
5	a	D	1 or 0	
	b	A and F	2 or 1 or 0	OPEN
6		A and D	2 or 1 or 0	OPEN
7	a	B and F	2 or 1 or 0	OPEN
	b	C	1 or 0	
8	a	D	1 or 0	
	b	B and E	2 or 1 or 0	OPEN

Please note that there are **NO HALF MARKS** in Part 1.

Part 2 – 40 marks

9 a Aluminium is lighter/not as heavy/not as dense
Copper is denser / heavier 1 mark

b Steel is strong/stronger than; so cable does not break
[harder / tougher = 0] 1 mark

10 a 14 14
14 15
14 16 1 mark

b Isotopes 1 mark

c ^{28}Sc [28g ($\frac{1}{2}$)] 1 mark

11 a Naphtha or boiling range of fraction 1 mark

b Larger molecules/more carbon atoms per molecule [atoms = 0] 1 mark

c (i) To produce more useful products/produce alkenes/unsaturated molecules to make plastics/petrol/valuable fractions 1 mark

(ii) Less energy/heat required [save money = 0] 1 mark

12 a
$$\begin{array}{c} \text{H} & \text{COOCH}_3 \\ | & | \\ \text{C} & = & \text{C} \\ | & & | \\ \text{H} & & \text{CN} \end{array}$$
 ignore 1 transcription error
2 errors \square 0

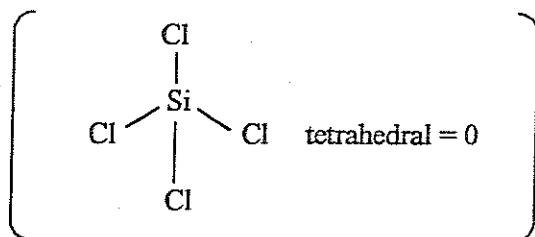
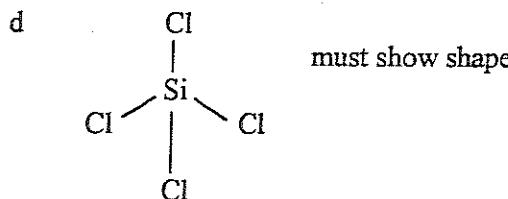
allow one H to be missing as long as bond is shown 1 mark

b Carbon monoxide/hydrogen cyanide/cyanide (or correct formulae CO; HCN) 1 mark

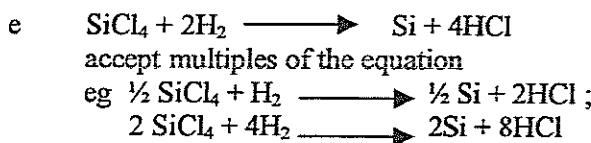
13 a SiO_2 (ion charges \square 0) 1 mark

b Chlorine/ Cl_2 HCl/hydrochloric acid 1 mark

c Distillation accept fractional distillation, accept evaporating then condensing 1 mark



1 mark



14 a To complete the circuit/acts as an electrolyte [unacceptable - to allow electrons/charged particles to flow = 0] 1 mark

b Tin bromide/chloride/iodide/sulphate/nitrate 1 mark

c lead, copper, silver, gold, platinum, mercury 1 mark

15 a Reduction in volume is $12.5 (\frac{1}{2})$

$$\frac{12.5}{60} \times 100 = 20.83\% (\frac{1}{2})$$

$$= 21\% \quad 21\% \text{ on its own (0) / } 20.8\% \text{ on its own (1)}$$

1 mark for correct answer on its own 1 mark

b To allow all the oxygen to react (with the copper) / to give it time to react 1 mark

c A gas would be produced/carbon dioxide would be produced 1 mark

16 a To be able to identify products / so that electrode is positive 1 mark

b Graph $(\frac{1}{2})$ – both labels correct penalty for not using half the space = $\frac{1}{2}$

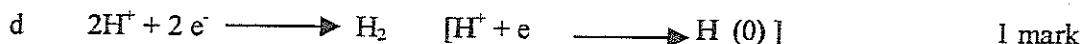
$(\frac{1}{2})$ – both scales correct

$(\frac{1}{2})$ – plots (one error allowed)

$(\frac{1}{2})$ – joining points barchart (1) spikegraph (1)

2 marks

c $15 - 17 \text{ cm}^3$ (incorrect / wrong unit – $\frac{1}{2}$)
 (graph should be looked at if different answer is given) 1 mark



17 a Haber 1 mark

b Ammonia decomposes/breaks down//yield decreases/lower temp gives higher yield 1 mark

c More fertilisers required to produce more food 1 mark

18 a Molecules with similar chemical properties and same general formula 1 mark

b $\text{C}_3\text{H}_8 + 5\text{O}_2 \longrightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$

1 mol	4 mol (½)
44g	72g (½)
22g	$\frac{22}{44} \times 72$ (½)

36g on its own – 2 marks = 36g (½) 2 marks
If atomic numbers used maximum of 1 mark (33.8/33.9g)

19 a Add iodine to water (½)
Does not go blue black (½) 1 mark

b (i) Breaking up (large) molecule with addition of water [breaking up using an acid = 0 changed using water = 0] 1 mark

(ii) Put starch in water and amylase into visking tubing (½)
Place in test tube of water (½)
Add Benedict's solution to sample of water (½)
Benedict's solution turns brick red colour (½) 2 marks

20 a Fermentation/anaerobic respiration 1 mark

b (i) As the carbon number increases more heat released 1 mark

(ii) 3306 – 3315 kJ 1 mark

[END OF MARKING INSTRUCTIONS]