

2000 HSC Notes from the Examination Centre Chemistry

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Chemistry

Introduction

In 2000 there were 10 123 candidates presenting for the examination compared with 10 455 in 1999 and 10 187 in 1998.

General comments

Candidates should pay careful attention to key words in questions such as 'explain', 'discuss' and 'describe'. For example, a candidate cannot receive full credit in answering a question asking for the 'discussion of factors' if their response is a statement of factors.

A question asking candidates to describe a chemical test, including expected observations, is seeking indication that the candidate has been involved in practical work.

Section I – Core

Part A – Multiple-choice questions (15 marks)

The table shows the correct answers and the percentage of the candidates selecting these.

QUESTION	CORRECT ANSWER	% OF CANDIDATURE
1	B	84.24
2	B	84.64
3	D	71.89
4	C	72.04
5	A	72.14
6	B	28.00
7	C	69.63
8	C	69.97
9	A	57.97
10	D	49.54
11	D	94.27
12	B	68.18
13	D	40.17
14	A	64.21
15	C	66.14

Part B – 3-mark questions (30 marks)

Candidates were most successful at:

- giving names and structures of carbon compounds
- describing uses of carbon compounds
- drawing and labelling a graph
- calculating K value from concentrations
- predicting how changes affect an equilibrium position.

Some candidates had difficulty with:

- identifying the meaning of common terms such as liquefy, curve of best fit
- giving succinct explanations without contradiction and without just rewording information given in the question
- devising an appropriate scale for graphing table data
- correctly graphing data given to three decimal places
- giving a description of practical work observations rather than theoretical interpretations of what was happening
- distinguishing between intermolecular forces and intramolecular bonding.

Part C – 5-mark questions (30 marks)

Candidates were most successful at:

- drawing the structures of carbon compounds
- writing balanced equations
- using the mole concept
- identifying physical properties
- constructing tables.

Some candidates had difficulty with:

- writing correct formulae
- correctly specifying the products of well known reactions
- realising that combustion of a hydrocarbon is not an equilibrium situation
- identification of trends
- identifying safety precautions required for practical work
- elaborating without contradicting themselves
- setting out working for calculations, transcribing calculated figures, calculator errors and errors in rounding off.

Many students showed poor understanding of the terms buffer, neutral and dissolution. Gas chamber is not an alternative name for fume cupboard.

Section II – Electives

ELECTIVE	ELECTIVE NAME	NO. OF CANDIDATES	CANDIDATURE %
Question 32	Chemical Energy	5267	52
Question 33	Oxidation and Reduction	3918	39
Question 34	Biological Chemistry	675	7
Question 35	Chemistry and the Environment	214	2

Many candidates rely on knowledge of answers prepared for questions asked in previous HSC exams. Consequently their responses do not directly address the question asked.

Candidates often make assumptions when interpreting experimental data provided in a question. Such assumptions may not be justified by the data and candidates may infer wrongly from the supplied data, eg claiming that an experiment that demonstrates the need for water and air for rusting, shows that water and oxygen are needed.

Whilst detail is important, candidates should not attempt overly complex explanations. Unless such a response is well planned, students often contradict themselves, leading to a loss of marks.