

# CHEMISTRY

Paper 1523/22  
Multiple Choice (Extended) 22

| Question Number | Key | Question Number | Key | Question Number | Key | Question Number | Key |
|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|
| 1               | C   | 11              | B   | 21              | A   | 31              | C   |
| 2               | C   | 12              | D   | 22              | B   | 32              | C   |
| 3               | A   | 13              | D   | 23              | A   | 33              | A   |
| 4               | C   | 14              | B   | 24              | B   | 34              | D   |
| 5               | A   | 15              | B   | 25              | B   | 35              | B   |
| 6               | A   | 16              | A   | 26              | C   | 36              | D   |
| 7               | D   | 17              | B   | 27              | B   | 37              | C   |
| 8               | A   | 18              | A   | 28              | D   | 38              | B   |
| 9               | B   | 19              | C   | 29              | D   | 39              | D   |
| 10              | C   | 20              | B   | 30              | D   | 40              | C   |

## General comments

Candidates found **Questions 3, 17 and 36** to have the most demand. Candidates found **Questions 4, 9, 14, 23, 25, 29, 31, 35 and 40** least demanding. Overall, this paper discriminated well between the most and least able candidates. The distribution of answers suggested that the least able were guessing on this Extended tier paper. This was particularly common on questions which linked to practical skills such as distillation (**Question 3**), filtration (**Question 20**), chemical testing (**Question 21**) and on questions from the supplement content of the syllabus.

## Comments on specific questions

### Question 3

Most of the more able candidates answered this question correctly. The least able candidates appeared to be guessing.

### Question 7

Although most candidates answered this question correctly a third chose distractor **C**, possibly confusing the type of bonding present in silicon(IV) oxide.

### Question 13

This question discriminated well between the most and least able candidates with nearly all the most able answering correctly but the least able appeared to be guessing.

### Question 15

This question also discriminated well between the most and least able candidates, with the least able commonly choosing distractor **A**.

### Question 17

Few candidates chose distractor **C**, showing understanding of the effect of temperature on equilibria. Most of the weakest candidates chose distractor **A** showing a misunderstanding about the nature of *dynamic* equilibria.

### Question 18

Most candidates answered this question correctly, however almost half of the weakest candidates chose distractor **B**, where they confused the direction of acidity on a pH scale or the general properties of weak acids.

### Question 21

Nearly all of the most able answered this correctly. The least able candidates appeared to be guessing.

### Question 27

This question discriminated well between the most and least able candidates with nearly all the most able answering correctly. A third of the least able candidates answered this correctly with all the distractors being equally likely to be chosen.

### Question 33

This question also discriminated well between the most and least able candidates. The least able tended to choose distractor **B**.

### Question 34

Very few of the most able candidates answered this incorrectly. Overall, distractor **B** was the most common incorrect answer showing some confusion between thermal decomposition and combustion.

### Question 36

Candidates found this a challenging question. Although few candidates chose distractor **B**, both distractors **A** and **C** were commonly chosen. Candidates should recall that fractional distillation is a physical rather than a chemical process.

### Question 39

This question also discriminated well between the most and least able candidates. The least able tended to choose distractor **C**.