



CHEMISTRY

0620/62

Paper 6 Alternative to Practical

March 2017

MARK SCHEME

Maximum Mark: 40

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

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| Question | Answer | Marks |
|----------|---|-------|
| 1(a) | electrode(s) | 1 |
| 1(b) | diagram of test-tube over either electrode | 1 |
| | containing liquid | 1 |
| 1(c) | test: glowing splint result: relights | 1 |
| 1(d)(i) | carbon dioxide | 1 |
| 1(d)(ii) | oxygen reacted with carbon | 1 |
| 1(e) | solution became more acidic / more concentrated | 1 |
| | water was broken down / electrolysed | 1 |

| Question | Answer | Marks |
|----------|--|-------|
| 2(a) | initial and final readings completed correctly: 29.6; 4.1 | 1 |
| | difference completed correctly: 25.5 | 1 |
| 2(b) | initial and final readings and difference completed correctly: 29.1; 24.0; 5.1 | 1 |
| | all readings to 1 d.p. | 1 |
| 2(c) | neutralisation | 1 |
| 2(d)(i) | solution O | 1 |
| | greater volume of acid was used in the titration | 1 |

| Question | Answer | Marks |
|----------|--|-------|
| 2(d)(ii) | five times as concentrated | 1 |
| 2(e) | 2.5–2.6 | 1 |
| | unit: cm ³ | 1 |
| 2(f) | effect on volume: no effect | 1 |
| | reason: temperature would only affect the rate | 1 |
| 2(g)(i) | use a pipette / burette | 1 |
| 2(g)(ii) | repeat experiments (and compare / average) | 1 |
| 2(h) | M1 fair test to equal volumes of each sodium hydroxide solution / solutions O and P add an equal volume / measured volumes of aqueous calcium chloride | 1 |
| | M2 dependent variable measured measure mass / height of precipitate formed / volume of calcium chloride used | 1 |
| | M3 conclusion the more concentrated sodium hydroxide solution would form the most precipitate (mass / height) / would require a smaller volume of calcium chloride | 1 |

| Question | Answer | Marks |
|----------|-------------------------------|-------|
| 3(a)(i) | white | 1 |
| | precipitate | 1 |
| 3(a)(ii) | (white precipitate) dissolves | 1 |
| 3(b)(i) | white precipitate | 1 |
| 3(b)(ii) | (white precipitate) dissolves | 1 |
| 3(c) | cream | 1 |
| | precipitate | 1 |
| 3(d) | sodium | 1 |
| | iodide | 1 |

| Question | Answer | Marks |
|----------|---|-------|
| 4(a) | any 4 from: M1 measure initial temperature of (solid) ammonium chloride / barium hydroxide M2 add barium hydroxide / ammonium chloride / other solid AND mix / stir M3 use a thermometer M4 measure the temperature of the mixture / final temperature M5 temperature decreases / test-tube feels cold | 4 |
| 4(b) | M1 add (aqueous) sodium hydroxide (and warm) | 1 |
| | M2 gas produced turns (red) litmus blue | 1 |