

Chapter 4 – Acids and alkalis

| Question | Answers | Extra information | Mark |
|----------|---|--|------------------|
| 1(a) | D | | 1 |
| (b) | wear goggles wear gloves | | 1 1 |
| 2 | neutralises does 7 salt | | 1 1 1 1 |
| 3 | B, C, D, A, E | 3 marks for all correct 2 marks for three or four correct 1 mark for two correct | 3 |
| 4(a) | red blue concentrated dilute | | 1 1 1 1 |
| (b) | A very acidic solution – will turn UI red – which is pH 1. A solution that is a little acidic – will turn UI yellow – which is pH 5. A neutral solution – will turn UI green – which is pH 7. A very alkaline solution – will turn UI purple – which is pH 14. | 3 marks for all correct 2 marks for 2 correct 1 mark for 1 correct | 3 |
| 5(a) | volume of bicarbonate solution | | 1 |
| (b) | all points plotted correctly | | 1 |
| (c) | point at 39 s circled | | 1 |
| (d) | as the volume of bicarbonate solution increases, the time stays the same/the volume has no effect on the time | | 1 |

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|----------------------------------|--|---|------------------|
| 6 | alkali acid | | 1 1 |
| 7(a) | 0 cm ³ alkali: red, 1 100 cm ³ alkali: green, 7 | | 1 |
| (b) | $\text{NaOH} + \text{HCl} \rightarrow \text{NaCl} + \text{H}_2\text{O}$ | 1 mark for correct reactants 1 mark for correct products | 2 |
| (c) | sodium chloride | | 1 |
| 8 | solution A 30 g in 500 cm ³ is equivalent to 60 g in 1000 cm ³ 60 g is more than 40 g so solution A is more concentrated OR 40 g in 1000 cm ³ is equivalent to 20 g in 500 cm ³ 20 g is less than 30 g so solution B is less concentrated | | 1 1 1 |
| SPACED LEARNING QUESTIONS | | | |
| 9 | touching regular are still are not | | 1 1 1 1 |
| 10(a) | Reactants – hydrogen and oxygen Product – water | Both hydrogen and oxygen needed | 1 1 |
| (b) | hydrogen + oxygen → water | | 1 |
| (c) | different number of oxygen atoms on each side of the arrow/2 oxygen atoms on the left but only 1 atom on the right/O ₂ on the left but O on the right | | 1 |