**NCEA past examination questions on pH calculations**

Kw = 1 x 10-14

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Solution** | **[H3O+]** | **[OH-]** | **pH** |
| 2017 | NaOH(aq) |  |  | 11.6 |
|  | 2.96 × 10–4 mol L–1 of KOH(aq) |  |  |  |
| 2016 | 0.0341 mol L–1 HCl (aq) |  |  |  |
|  | NaOH (aq) |  |  | 12.4 |
| 2015 | 0.0243 mol L–1 HNO3 (aq) |  |  |  |
|  | KOH (aq) |  |  | 11.8 |
| 2014 | potassium hydroxide, KOH |  |  | 12.8  |
|  | 2.25 × 10–4 mol L–1 NaOH |  |  |  |
| 2013 | 0.0125 mol L–1 HNO3 | 0.0125 |  |  |
| 2012 | 9.56 × 10–5 mol L–1 of OH- ions |  |  |  |
|  | 0.133 mol L–1 solution of HCl |  |  |  |
|  | a solution of NaOH with a pH of 12.8. |  |  |  |
| 2011 | 0.0498 mol L–1 hydrochloric acid |  |  |  |
|  | 0.251 mol L–1 sodium hydroxide |  |  |  |
|  | a sample of polluted rainwater has a pH of 4.62 |  |  | 4.62 |
| 2010 | 0.108 mol L–1 hydrochloric acid |  |  |  |
|  | hydrochloric acid with a pH of 1.58 |  |  | 1.58 |
|  | 0.362 mol L–1 sodium hydroxide |  |  |  |
| 2009 | 0.0376 mol L–1 HCl solution |  |  |  |
|  | 2.48 × 10–4 NaOH solution |  |  |  |
| 2008 | 0.00112 mol L–1 HCl |  |  |  |
|  | 3.68 × 10–2 mol L–1 NaOH |  |  |  |
| 2007 | 0.125 mol L–1 of HCl |  |  |  |
|  | NaOH solution at pH 10.2 |  |  |  |
|  | 0.124 mol L–1 of NaOH |  |  |  |

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