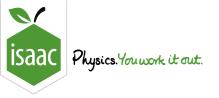


Home Chemistry Physical Acids & Bases Essential Pre-Uni Chemistry J2.4

Essential Pre-Uni Chemistry J2.4



Part A (a)
Calculate the $ m pH$ of a $0.012 m moldm^{-3}$ solution of $ m HCl.$
Part B (b)
Calculate the $ m pH$ of a $0.030 m moldm^{-3}$ solution of sulfuric acid.
Part C $$ (c) $ \mbox{ Calculate the concentration of a solution of nitric acid with $pH=2.1$ }. $
Part D (d) $ \hbox{ Calculate the concentration of a solution of sulfuric acid with a pH of 4.7.} $



Home Chemistry Physical Acids & Bases Essential Pre-Uni Chemistry J2.5

Essential Pre-Uni Chemistry J2.5



Part A	(a)
Ca	alculate the concentration of a solution of barium hydroxide with a $ m pH$ of $9.5.$
Part B	(b)
Ca	alculate the $ m pH$ of a $0.0800 m moldm^{-3}$ solution of $ m KOH$.



<u>Home</u> Chemistry

Physical

Acids & Bases

Essential Pre-Uni Chemistry J2.7

Essential Pre-Uni Chemistry J2.7



 $14\,\mathrm{g}$ of sulfuric acid is dissolved in $500\,\mathrm{m}^3$ of water. Calculate the pH of the resulting solution.

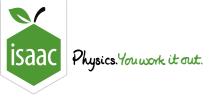


Home Chemistry Physical Acids & Bases Essential Pre-Uni Chemistry J2.8

Essential Pre-Uni Chemistry J2.8



 $100\,\mathrm{cm^3}$ of a solution of $0.750\,\mathrm{mol\,dm^{-3}}$ sulfuric acid is mixed with $400\,\mathrm{cm^3}$ of a solution of $0.300\,\mathrm{mol\,dm^{-3}}$ sodium hydroxide. Calculate the pH of the resulting mixture.



Home Chemistry

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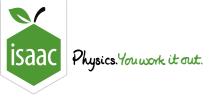
Physical Acids & Base

Acids & Bases Essential Pre-Uni Chemistry J2.9

Essential Pre-Uni Chemistry J2.9



 $50.0\,\mathrm{cm^3}$ of a solution of $0.200\,\mathrm{mol\,dm^{-3}}$ nitric acid is mixed with $200\,\mathrm{cm^3}$ of a solution of $0.160\,\mathrm{mol\,dm^{-3}}$ potassium hydroxide. Calculate the pH of the resulting mixture.



Physical

Acids & Bases Essential Pre-Uni Chemistry J3.2

Essential Pre-Uni Chemistry J3.2



Species	$K_{\sf a}/{ m moldm^{-3}}$
Benzoic acid	$6.3 imes10^{-5}$
Hydrogen sulfide	$8.9 imes 10^{-8}$
Iron(III)	$6.0 imes10^{-3}$
Methanoic acid	$1.6 imes10^{-4}$
Sulfuric(IV) acid	$1.5 imes10^{-2}$
Boric acid	$5.8 imes10^{-10}$

Calculate the concentration of a solution of benzoic acid with a pH of 3.2.



Physical

Acids & Bases Essential Pre-Uni Chemistry J3.4

Essential Pre-Uni Chemistry J3.4



The ${\bf p}K_{\bf a}$ of ethanoic acid is 4.8. Calculate its $K_{\bf a}.$

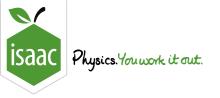


Home Chemistry Physical Acids & Bases Essential Pre-Uni Chemistry J3.6

Essential Pre-Uni Chemistry J3.6



Calculate the $K_{\rm a}$ of an acid, HA, with a pH of 5.0 when its concentration is $0.20\,{
m mol\,dm^{-3}}$.



Physical

Acids & Bases Essential Pre-Uni Chemistry J3.7

Essential Pre-Uni Chemistry J3.7



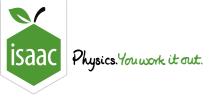
Species	$K_{\sf a}/{ m moldm^{-3}}$
Benzoic acid	$6.3 imes10^{-5}$
Hydrogen sulfide	$8.9 imes 10^{-8}$
Iron(III)	$6.0 imes 10^{-3}$
Methanoic acid	$1.6 imes 10^{-4}$
Sulfuric(IV) acid	$1.5 imes10^{-2}$
Boric acid	$5.8 imes10^{-10}$

Part A (a)

Calculate the pH of a $13.8\,\mathrm{g\,dm^{-3}}$ solution of methanoic acid.

Part B (b)

 $240\,\mathrm{cm^3}$ of hydrogen sulfide gas is dissolved $500\,\mathrm{cm^3}$ of water. Calculate the pH of the resulting solution.



Chemistry

Acids & Bases Physical

Essential Pre-Uni Chemistry J3.9

Essential Pre-Uni Chemistry J3.9



Species	$K_{\sf a}/{ m moldm^{-3}}$
Benzoic acid	$6.3 imes10^{-5}$
Hydrogen sulfide	$8.9 imes 10^{-8}$
Iron(III)	$6.0 imes10^{-3}$
Methanoic acid	$1.6 imes10^{-4}$
Sulfuric(IV) acid	$1.5 imes10^{-2}$
Boric acid	$5.8 imes10^{-10}$

 $\text{Sulfur(IV) oxide dissolves in water to give sulfuric(IV) acid: } SO_{2}\left(g\right) + H_{2}O\left(l\right) \\ \Longleftrightarrow H_{2}SO_{3}\left(aq\right). \text{ Calculate the RTP volume of } III \\ \text{Calculate the RTP volume$ sulfur(IV) oxide required to reduce the pH of a lake of volume $0.40\,\mathrm{km^3}$ from 7.0 to 6.0.