Answer all the questions below as fully as you can then check your answers.

1. Name 2 alkalis.

2. What word in a substance tells you it is an alkali?

4 Alkalis have a pH in the range 1-6? True or false?

5 A strong alkali will have a pH of 1-2 and it will turn universal indicator yellow. True or false?

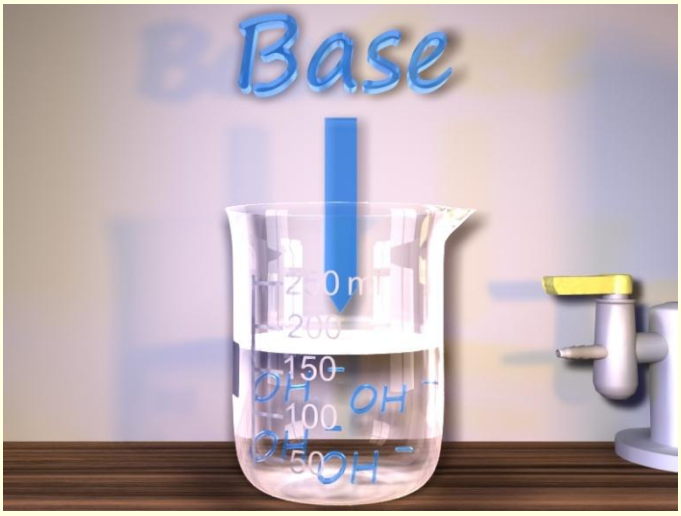
6 Complete the table below. It gives the colours of universal indicator in various solutions.

colour	red	orange	yellow	green			
pH	0-3	3-4	5-6	7	8-9	10-12	13-14

7 Name 2 bases.

8. What is shown in the image opposite?

9. What is the difference between an alkali and a base?



10. Complete the word equation below to show what happens when a soluble base dissolves in water.

Base + water ⟶

11. Sodium oxide, potassium oxide and ammonia are all soluble bases. Complete the word and if possible symbolic equations below. Note if you need help with working out the formula for compounds then visit the page-Finding the formula

a. sodium oxide$_{(s)}$ + water$_{(l)}$ ⟶

$Na_2O_{(s)}$ + $H_2O_{(l)}$ ⟶

b. potassium oxide$_{(s)}$ + water$_{(l)}$ ⟶

$K_2O_{(s)}$ + $H_2O_{(l)}$ ⟶

c. ammonia$_{(g)}$ + water$_{(l)}$ ⟶

$NH_{3(g)}$ + $H_2O_{(l)}$ ⟶

Answers

1. Name 2 alkalis. Potassium hydroxide, sodium hydroxide, ammonium hydroxide, calcium hydroxide, magnesium hydroxide.

2. What word in a substance tells you it is an alkali? Hydroxide. Alkalis are all solutions which contain an excess of hydroxide ions (OH^-)

4 Alkalis have a pH in the range 1-6? True or false? False alkalis have a pH above 7

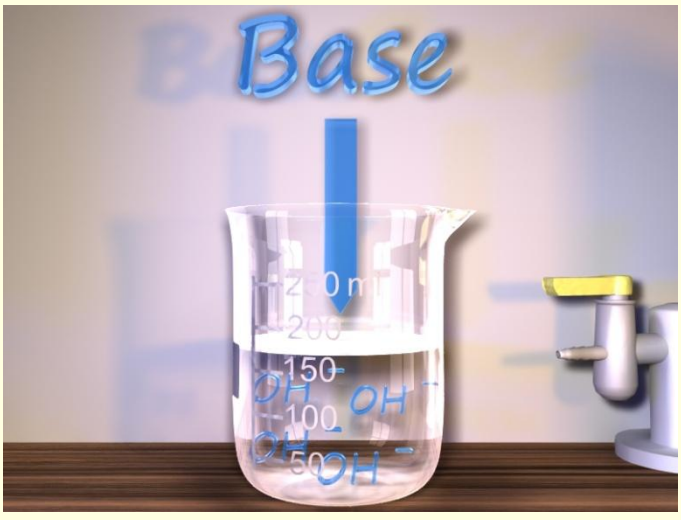
5 A strong alkali will have a pH of 1-2 and it will turn universal indicator yellow. True or false? False pH will be 10-12 and universal indicator will be purple or violet

6 Complete the table below. It gives the colours of universal indicator in various solutions.

colour	red	orange	yellow	green	Dark green	blue	violet
pH	0-3	3-4	5-6	7	8-9	10-12	13-14

7 Name 2 bases. Magnesium oxide, sodium oxide, potassium carbonate, copper oxide are common bases

8. What is shown in the image opposite? If a base dissolves it will form an alkaline solution, solution with an excess of hydroxide ions (OH^-)



9. What is the difference between an alkali and a base?

Alkalis are solutions which contain an excess of hydroxide ions, most bases are solids e.g. metal oxides, metal carbonates are common bases. Ammonia (NH_3) is an exception, it is a good base but a gas at room temperature.

10. Complete the word equation below to show what happens when a soluble base dissolves in water.

Base + water ⟶ alkali

11. Sodium oxide, potassium oxide and ammonia are all soluble bases. Complete the word and if possible symbolic equations below.

a. sodium oxide$_{(s)}$ + water$_{(l)}$ ⟶ sodium hydroxide$_{(aq)}$

$Na_2O_{(s)} + H_2O_{(l)} \longrightarrow 2NaOH_{(aq)}$

b. potassium oxide$_{(s)}$ + water$_{(l)}$ ⟶ potassium hydroxide$_{(aq)}$

$K_2O_{(s)} + H_2O_{(l)} \longrightarrow 2KOH_{(aq)}$

c. ammonia$_{(g)}$ + water$_{(l)}$ ⟶ ammonium hydroxide$_{(aq)}$

$NH_{3(g)} + H_2O_{(l)} \longrightarrow NH_4OH_{(aq)}$