

**Student Name:** \_\_\_\_\_**Class:** \_\_\_\_\_**Student ID:** \_\_\_\_\_**Date:** {{DATE}}**Assessment Details**

<b>Duration:</b> 45 minutes	<b>Total Marks:</b> 100
<b>Topics Covered:</b>	<ul style="list-style-type: none"><li>• Definition and types of bases</li><li>• Chemical formulas for bases</li><li>• Strong and weak bases</li><li>• Real-world applications of bases</li></ul>

**Instructions to Students:**

1. Read all questions carefully before attempting.
2. Show all working out - marks are awarded for method.
3. Calculator use is permitted except where stated otherwise.
4. Write your answers in the spaces provided.
5. If you need more space, use the additional pages at the end.
6. Time management is crucial - allocate approximately 1 minute per mark.

**Question 1**

**[2 marks]**

What is the definition of a base in chemistry?

A) A substance that donates a proton ( $\text{H}^+$  ion)

B) A substance that accepts a proton ( $\text{H}^+$  ion)

C) A substance that is neutral in pH

D) A substance that can conduct electricity

**Question 2**

**[2 marks]**

Which of the following is an example of a strong base?

A) Sodium hydroxide ( $\text{NaOH}$ )

B) Ammonia ( $\text{NH}_3$ )

C) Acetic acid ( $\text{CH}_3\text{COOH}$ )

D) Hydrochloric acid ( $\text{HCl}$ )

**Question 3**

**[2 marks]**

What is the chemical formula for calcium hydroxide?

A)  $\text{Ca}(\text{OH})_2$

B)  $\text{CaH}_2$

C)  $\text{CaO}$

D)  $\text{CaCl}_2$

**Question 4**

**[10 marks]**

Describe the difference between a strong base and a weak base. Provide one example of each.

**Question 5**

**[10 marks]**

Write the chemical formula for aluminum hydroxide and explain its common use.

**Question 6**

**[10 marks]**

What is the pH of a strong base? Explain your answer.

**Question 7**

**[40 marks]**

Choose one real-world application of bases (such as in soap making, water treatment, or pharmaceuticals) and describe how bases are used in this application. Be sure to include the types of bases involved, their properties, and why they are suitable for this particular use.

