

Topic 8 Homework Acids, Bases: pH

1.

A student made some statements about the effect of adding water to an acidic solution. Identify the correct statement.

- A The pH of the solution will remain the same.
- B The pH of the solution will decrease.
- C The hydrogen ion concentration will decrease.
- D The hydrogen ion concentration will increase.

2

Which of the following compounds is a base?

- A Sodium carbonate
- B Sodium chloride
- C Sodium nitrate
- D Sodium sulfate

3.

Which of the following oxides, when shaken with water, would leave the pH unchanged? You may wish to use the data booklet to help you.

- A Carbon dioxide
- B Copper oxide
- C Sodium oxide
- D Sulfur dioxide

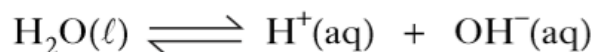
4.

An element was burned in air. The product was added to water, producing a solution with a pH less than 7. The element could be

- A tin
- B zinc
- C sulfur
- D sodium.

5.

In water, an equilibrium exists between water molecules and hydrogen and hydroxide ions.



At equilibrium

- A the water molecules have stopped changing into ions
- B the water molecules have all changed into ions
- C the concentrations of water molecules and ions are equal
- D the concentrations of water molecules and ions are constant.

6.

Which of the following oxides, when shaken with water, would give an alkaline solution?

- A Calcium oxide
- B Nickel oxide
- C Nitrogen dioxide
- D Sulphur dioxide

7.

As an alkaline solution is diluted with water

- A the pH increases
- B the pH stays the same
- C the concentration of hydroxide ions increases
- D the concentration of hydroxide ions decreases.

8.

Which of the following substances dissolves in water to give a solution of pH greater than 7?

- A Ammonia
- B Carbon dioxide
- C Sulphur dioxide
- D Sodium chloride

9.

Which of the following potassium compounds is a base?

- A Potassium nitrate
- B Potassium chloride
- C Potassium sulphate
- D Potassium carbonate

10.

Which of the following solutions has the highest pH?

- A 0.1 mol l⁻¹ ammonia
- B 0.1 mol l⁻¹ hydrochloric acid
- C 0.1 mol l⁻¹ sodium chloride
- D 0.1 mol l⁻¹ sodium hydroxide