**Supplementary material**

**ADDRESSING AND ELIMINATING THE MISCONCEPTIONS ABOUT ACID AND BASES CONCEPTS IN PRIMARY SCHOOL CHEMISTRY TEACHING**

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**ACIDS AND BASES CONCEPT TEST**

1. What is true about acids?
   1. Acids “eat” the material.
   2. Acids contain hydrogen.
   3. Acids form a red colour in water.
   4. Acids have a pH > 7.
2. HCl may represent:
   1. hydrogen chloride atom.
   2. hydrogen chloride molecule.
   3. hydrogen chloride formula unit.
   4. hydrogen chloride molecular model.
3. NaOH may represent:
   1. sodium hydroxide atom.
   2. sodium hydroxide molecule.
   3. sodium hydroxide formula unit.
   4. sodium hydroxide molecular model.
4. When you put a sodium hydroxide granule in a glass of water it will:
   1. melt.
   2. dissolve.
   3. disappear.
   4. float to the surface.
5. Acid-base indicator is a substance that:
   1. is red in acidic and blue in basic solution.
   2. has different colour in acidic and basic solution.
   3. is rare and can only be obtained from special substances.
   4. colours the water purple.
6. Read the following statements carefully:
7. At complete neutralization of any acid and any base, the medium is always neutral.
8. With complete neutralization of an acid and a base, the medium may be neutral, basic or acidic.
9. If we mix equal volumes of any acid and any base, the medium will be neutral.
10. If we dissolve any salt in water, the medium will be neutral.

Which of the following statements is true?

* 1. only I
  2. only II
  3. I and III
  4. I, III and IV

1. Acid solution is diluted by adding water to it. What happens to the pH of the medium?
   1. The pH increases and the value approaches 7.
   2. The pH increases and the value approaches 14.
   3. The pH decreases and the value approaches 7.
   4. The pH decreases and the value approaches 0.
2. Base solution is diluted by adding water to it. What happens to the pH of the medium?
   1. The pH increases and the value approaches 7.
   2. The pH increases and the value approaches 14.
   3. The pH decreases and the value approaches 7.
   4. The pH decreases and the value approaches 0.
3. The acid is neutralized with a base using titration, so that the acid and the corresponding indicator are put in the Erlenmeyer flask first. Then, drop by drop, the base is added from the burette. What happens to the pH after the base has been added to the Erlenmeyer flask?
   1. pH increases.
   2. pH decreases.
   3. pH does not change.
   4. Whether the pH will increase or decrease depends on which acid and which base are used.
4. The medium of aqueous solutions prepared from the following salts: NaCl, NH4Cl, K2CO3 and NaHCO3 will be:
5. weakly basic.
6. weakly acidic.
7. neutral.
8. depends on the type of salt.
9. Write the word equation for the reaction between potassium hydroxide and sulfuric acid.