



Name _____ Class _____ Date _____

- 1 Which indicator is **yellow** in a solution with a **pH of 9.8**?

- A methyl orange
- B bromthymol blue
- C bromcresol green
- D thymol blue



- 2 When 50. milliliters of an **HNO₃** solution is **exactly neutralized** by 150 milliliters of a 0.50 M solution of **KOH**, what is the **concentration of HNO₃**?

- A 1.0 M
- B 1.5 M
- C 3.0 M
- D 0.5 M

- 3 Which **ion** is produced when an **Arrhenius base** is dissolved in water?

- A H⁺, as the only positive ion in solution
- B H₃O⁺, as the only positive ion in solution
- C OH⁻, as the only negative ion in solution
- D H⁻, as the only negative ion in solution

- 4 If 5.0 milliliters of a 0.20 M HCl solution is required to **neutralize** exactly 10. milliliters of NaOH, what is the **concentration** of the base?

- A 0.10 M
- B 0.20 M



PREVIEW

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- acid + base → grains of salt + water
- C ionization
 - D neutralization

- B increases
- C remains the same



- 9 At **standard pressure** when **NaCl** is added to water, the solution will have a

- A higher freezing point and a lower boiling point than water
- B higher freezing point and a higher boiling point than water
- C lower freezing point and a higher boiling point than water
- D lower freezing point and a lower boiling point than water

- 10 Which **0.1 M solution** contains an **electrolyte**?

- A C₆H₁₂O₆(aq)
- B CH₃COOH(aq)
- C CH₃OH(aq)
- D CH₃OCH₃(aq)



ANSWER KEY

Which indicator is **yellow** in a solution with a **pH of 9.8**?

- A** methyl orange
- B** bromthymol blue
- C** bromcresol green
- D** thymol blue



(a)

When 50. milliliters of an **HNO₃** solution is **exactly neutralized** by 150 milliliters of a 0.50 M solution of **KOH**, what is the **concentration of HNO₃**?

- A** 1.0 M
- B** 1.5 M
- C** 3.0 M
- D** 0.5 M

(b)

Which **ion** is produced when an **Arrhenius base** is dissolved in water?

- A** H⁺, as the only positive ion in solution
- B** H₃O⁺, as the only positive ion in solution
- C** OH⁻, as the only negative ion in solution
- D** H⁻, as the only negative ion in solution

(c)

If 5.0 milliliters of a 0.20 M HCl solution is required to **neutralize** exactly 10. milliliters of NaOH, what is the **concentration** of the base?

- A** 0.10 M
- B** 0.20 M
- C** 0.30 M



(a)



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D neutralization

grains of salt

C remains the same



At **standard pressure** when **NaCl** is added to water, the solution will have a

- A** higher freezing point and a lower boiling point than water
- B** higher freezing point and a higher boiling point than water
- C** lower freezing point and a higher boiling point than water
- D** lower freezing point and a lower boiling point than water

(c)

Which **0.1 M solution** contains an **electrolyte**?

- A** C₆H₁₂O₆(aq)
- B** CH₃COOH(aq)
- C** CH₃OH(aq)
- D** CH₃OCH₃(aq)

(b)