

AP Chemistry Practice Test 10

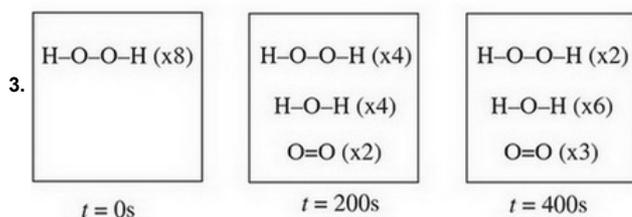
Real AP Past Papers with Multiple-Choice Questions

1. An unknown substance is found to have a high melting point. In addition, it is a poor conductor of electricity and does not dissolve in water. The substance most likely contains

- A. ionic bonding
- B. nonpolar covalent bonding
- C. covalent network bonding
- D. metallic bonding

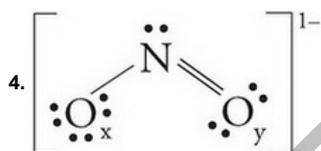
2. Which of the following best explains why the ionization of atoms can occur during photoelectron spectroscopy, even though ionization is not a thermodynamically favored process?

- A. It is an exothermic process due to the release of energy as an electron is liberated from the Coulombic attraction holding it to the nucleus.
- B. The entropy of the system increases due to the separation of the electron from its atom.
- C. Energy contained in the light can be used to overcome the Coulombic attraction between electrons and the nucleus.
- D. The products of the ionization are at a lower energy state than the reactants.



The above diagrams shows the decomposition of hydrogen peroxide in a sealed container in the presence of a catalyst. What is the overall order for the reaction?

- A. Zero order
- B. First order
- C. Second order
- D. Third order



One of the resonance structures for the nitrite ion is shown above. What is the formal charge on each atom?

- O_x N O_y
- A. -1 +2 -1
 - B. +1 -1 0
 - C. 0 0 -1
 - D. -1 0 0

The concentrations of the reactants and products in the reaction represented by the above graph are found to be changing very slowly. Which of the following statements best describes the reaction given that the reaction is exergonic? ($\Delta G < 0$)

- A. The reaction is under kinetic control.
- B. The reaction has reached a state of equilibrium.
- C. The reaction is highly exothermic in nature.
- D. The addition of heat will increase the rate of reaction significantly.

11. A certain beam of monochromatic light has a frequency of 6.00×10^{14} hertz. The wavelength of this radiation is _____, and this wavelength and frequency reside in the _____ of the electromagnetic spectrum. (The speed of light is $3.00 \times 10^8 \text{ m s}^{-1}$.)

- A. 500. nm visible region
- B. 200. nm ultraviolet region
- C. 2,000,000 m radio wave region
- D. 500. pm X-ray region

12. Of the following oxo acids, which is predicted to be the strongest acid?

- A. HBrO
- B. HClO
- C. HIO
- D. HClO₃

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