

Regents Practice 25 Questions Quiz 3 (52-77 multiple choice)

- 52 Which compound is soluble in water?
(1) BaS (2) Li₂S (3) MgS (4) Co₂S₃
- 53 Compared to a 14-gram sample of LiCl_(s) at STP, a 28-gram sample of LiCl_(s) at STP has
(1) a different density (2) a different gram-formula mass
(3) the same chemical properties (4) the same volume
- 54 A solid changes directly to a gas during
(1) fission (2) sublimation (3) deposition (4) decomposition
- 55 The phase of a sample of a molecular substance at STP is not determined by its
(1) arrangement of molecules (2) intermolecular forces
(3) number of molecules (4) molecular structure
- 56 Which atom has the weakest attraction for electrons in a chemical bond?
(1) a carbon atom (2) a fluorine atom (3) a boron atom (4) a oxygen atom
- 57 Which element is a liquid at 373K & 1.0 atmosphere? (1) magnesium (2) gallium (3) fluorine (4) iodine
- 58 Which list of elements consists of a metal, a metalloid, and a nonmetal?
(1) Li, Na, K (2) Sn, Si, P (3) Nb, Mo, V (4) O, N, Cl
- 59 At STP, which physical property of iron always remains the same from sample to sample?
(1) mass (2) length (3) density (4) volume
- 60 Which statement describes a chemical property of indium?
(1) Indium has a gray color. (2) Indium is a malleable solid at 20.°C.
(3) Indium melts at 430. K. (4) Indium reacts with bromine.
- 61 A compound is broken down by chemical means during
(1) chromatography (2) electrolysis (3) distillation (4) filtration
- 62 Which quantities must be conserved in all chemical reactions?
(1) mass, charge, density (2) mass, charge, energy (3) charge, volume, density (4) charge, volume, energy
- 63 Which phrase describes the distribution of charge and the polarity of a CHBr₃ molecule?
(1) symmetrical and polar (2) symmetrical and nonpolar
(3) asymmetrical and polar (4) asymmetrical and nonpolar
- 64 What is the charge of the nucleus of an nitrogen atom? (1) 0 (2) 7 (3) 14 (4) 28
- 65 Which ion has the most electrons? (1) P⁻³ (2) S⁻² (3) Br⁻¹ (4) Au⁺¹
- 66 When a chemical bond forms, energy must be (1) absorbed (2) produced (3) destroyed (4) released
- 67 Every bromine atom has
(1) 7 electrons (2) 35 neutrons (3) a mass number of 80 (4) an atomic number of 35
- 68 Which substance can not be broken down by a chemical change?
(1) methane (2) butane (3) ethanol (4) silicon

- 69 At standard pressure, which substance becomes less soluble in water as temperature increases from 10. to 80.°C?
(1) NH₃ (2) NaCl (3) KCl (4) NH₄Cl
- 70 Which type of concentration is calculated when the grams of solute is divided by the grams of the solution, and the result is multiplied by 1 000 000?
(1) molarity (2) percent by mass (3) parts per million (4) percent by volume
- 71 Which type of energy is associated with the random motion of atoms and molecules in a sample of air?
(1) chemical energy (2) nuclear energy (3) electrical energy (4) thermal energy
- 72 Which formula represents an unsaturated hydrocarbon? (1) CH₄ (2) C₃H₈ (3) C₂H₄ (4) C₄H₁₀
- 73 Which ion is most easily reduced? (1) Zn²⁺ (2) Co²⁺ (3) Mg²⁺ (4) Ca²⁺
- 74 Given the balanced equation representing a reaction: $\text{HSO}_4(\text{AQ}) + \text{H}_2\text{O}(\text{L}) \rightarrow \text{H}_3\text{O}^{+1}(\text{AQ}) + \text{SO}_4^{2-}(\text{AQ})$
According to one acid-base theory, the H₂O(L) molecules act as
(1) a base because they accept H⁺¹ ions (2) a base because they donate H⁺¹ ions
(3) an acid because they accept H⁺¹ ions (4) an acid because they donate H⁺¹ ions
- 75 At 50.°C and standard pressure, intermolecular forces of attraction are strongest in a sample of
(1) ethanoic acid (2) propanone (3) ethanol (4) water
- 76 At 101.3 kPa and 298 K, what is the total amount of heat released when one mole of aluminum oxide, Al₂O₃(S), is formed from its elements?
(1) 393.5 kJ (2) 1676 kJ (3) 837.8 kJ (4) 3351 kJ
- 77 Element X reacts with chlorine to form an ionic compound that has the formula XCl₂. To which group on the Periodic Table could element X belong?
(1) Group 1 (2) Group 13 (3) Group 2 (4) Group 15