

Chemistry Unit Review

Atomic Theory

Which scientist believed the atom was a solid, uniform sphere?

- a) Dalton
- b) Thomson
- c) Rutherford
- d) Bohr

Atomic Theory

J.J. Thomson's experiments led to the discovery of which subatomic particle?

- a) Protons
- b) Neutron
- c) Electron
- d) Neutrino

Atomic Theory

J.J. Thomson's experiment primarily used a _____ ray tube to observe charged particles

Atomic Theory

Ernest Rutherford used the emission of what type of particles in his famous experiment?

- a) Alpha
- b) Beta
- c) Electrons
- d) Protons

Atomic Theory

In his famous experiment, Ernest Rutherford directed alpha particles toward a foil made of _____.

Atomic Theory

Rutherford's atomic model proposed that most of an atom is made of _____ (2 words).

Atomic Theory

Under the Bohr model, electrons occupy different _____
_____ (two words)

Atoms and ions

Give the number of protons, neutrons and electrons for an atom of phosphorous

Atoms and ions

Give the number of protons, neutrons and electrons for an ion of iron (II)

Ions

Metallic atoms _____ electrons to form _____.

- A. lose, anions
- B. lose, cations
- C. gain, anions,
- D. gain, cations

Isotopes

Two isotopes of the same element have the same number of protons, but different numbers of what subatomic particle?

Isotopes

How many neutrons would you find in an atom of:



Isotopes

An isotope has a mass number of 35. It has 18 neutrons.
Give the name of the isotope and use isotope notation to represent it.

Electron energy levels

How many electron energy levels do we need for an atom of sodium?

Draw the electron energy level diagram for a sodium atom.

Electron energy levels

Draw the electron energy level diagram for a chloride ion

Electron energy levels

Electron energy level diagrams for ions have the same configuration as which atoms?

- a) Alkali metals
- b) Alkaline earth metals
- c) Halogens
- d) Noble gases

Mixtures

Matter is classified into two groups: mixtures and
_____ (two words)

Reactions

Which of the following describe a chemical reaction?

- a. Salt dissolves easily in water.
- b. Water changes from liquid to gas at 100 ° C.
- c. Copper turns green in the presence of humid air.
- d. When heated together, sulfur and zinc produce an odour and flame.

Atoms and Ions

What is the name given to elements in Group 17 of the periodic table?

- A. Halogens
- B. Noble gases
- C. Alkali metals
- D. Alkaline earth metals

Compounds

Which of the following is an acid?

- A. H_2O (l)
- B. NaOH (aq)
- C. H_2SO_4 (aq)
- D. Na_2SO_3 (aq)

Compounds

Numerical Response:

Compound	pH	Conductivity in Solution	State at SATP
1	7	high	solid
2	7	none	gas
3	10	low	aqueous
4	2	high	aqueous

Identify each of the above compounds as molecular, ionic, acid and base respectively.

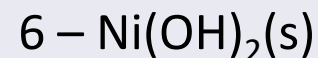
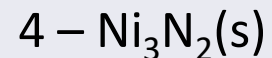
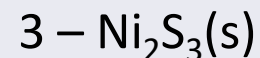
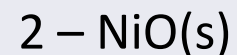
_____, _____, _____, _____
Molecular Ionic Acid Base

Compounds

Numerical Response:

In which compound(s) is the nickel cation bonded to a polyatomic ion?

Nickel forms compounds with many anions, including:



Compounds

Numerical Response:

Which beakers contain compounds that have a High solubility in water?

The following compounds are placed in separate beakers and mixed with 300mL water.

- 1 – aluminum nitrate
- 2 – silver acetate
- 3 – ammonium hydroxide
- 4 – copper(II) bromide
- 5 – copper(I) chloride
- 6 – barium sulfate

WHMIS

Identify the correct hazard and main concern for this WHMIS symbol

	Hazard	Main concern
A.	Flammable	May explode if heated
B.	Flammable	Can catch fire if exposed to air
C.	Oxidizing	May cause or intensify a fire
D.	Oxidizing	Can cause severe skin burns

