Chemistry Science Bowl Questions Bonus

1. Chemistry Short Answer:

If we dissolve 342.0 g of sucrose in water to make .2 liters of solution, and the molar mass of sugar is 342 g/mol-1, what’s the molarity of the sucrose molecules?

Answer: (342.0 g / 342 g/mol^-1) / .2 L **OR** 342.0 g / (342 g/mol-1­) x (.2 L) = 5 mol/L-1

1. Chemistry Short Answer:

Write a balanced equation for the reaction:

Sodium + Water 🡪 Sodium Hydroxide + Hydrogen

Answer: 2Na + 2H2O 🡪 2NaOH + H2

1. Chemistry Short Answer:

What is the formula to find the pressure of a gas?

Answer) P = dhg

1. Chemistry Short Answer:

Convert 908 grams to pounds.

Answer: 2 lbs

1. Chemistry Multiple Choice:

What is the mass of an electron in kilograms?

W) 10.4894 x 10-31 ­kg

X) 9.1094 x 10-31 kg

Y) 1.6726 x 10-27 kg

Z) 1.6749 x 10-27 kg

1. Chemistry Short Answer: Name 2 units used to measure activity (a property of radiation)?

Answer: Becquerel (Bq) and Curie (Ci)

1. Name the three different rays of radiation from lowest to highest in relative penetration power.

Answer: Alpha (α), Beta (β), Gamma (γ)

1. Chemistry Short Answer:

In the Lewis Dot Structure of the element Fluorine, how many dots are there?

Answer: 7

1. Chemistry Short Answer:

A cation has what kind of charge?

Answer: Positive charge

1. Chemistry Short Answer:

What is the formula of trihydrogen phosphate AKA phosphoric acid?

W) H3PO2

X) H4PO3

Y) H3PO4

Z) H3PO3

1. Chemistry Short Answer:

What is the name of Group 1 of the Periodic Table?

Answer: Alkali Metals

1. Chemistry Short Answer:

Give the number of valence electrons which fit in Shells 1, 2, 3, 4, 5, 6, and 7 in the order of the shells.

Answer: 2, 8, 8, 18, 18, 32, 32

1. Chemistry Multiple Choice:

What is the ability to form chains called?

W) Catenate

X) Osmosis

Y) Hybridization

Z) Haber Process

1. Chemistry Short Answer:

What instrument is used to measure radiation?

Answer: Geiger Counter

1. Chemistry Short Answer:

What are the two classes of hydrocarbons?

Answer: Aromatic, Aliphatic

1. Chemistry Multiple Choice:

Acids donate protons, what do Lewis Acids do?

W) Donate electrons

X) Donate protons

Y) Accept electrons

Z) Accept Protons

1. Chemistry Short Answer:

What is the name of the molecule of the formula MgF2

Answer: Magnesium Fluoride

1. Chemistry Multiple Choice:

What was Lord Kelvin’s original name?

W) Dmitri Mendelev

X) James Joule

Y) William Thomson

Z) Niels Bohr

1. Chemistry Multiple Choice:

To be an ionic bond, the electromagnetism between the two atoms has to be at least

W) 1.5

X) 1.0

Y) 0.5

Z) 0.1

1. Chemistry Short Answer:

What is Avogrado’s constant? (Give answer in 6 significant figures)

Answer: 6.02214x1023

1. Chemistry Short Answer:

In a ball - and - stick model, what represents atoms, and what represents bonds?

Answer: Ball: Atoms, Stick: Bonds

1. Chemistry Multiple Choice:

What is a mixed orbital formed by blending together atomic orbitals on the same atom called?

W) Compound orbital

X) Mixture Orbital

Y) Hybrid Orbital

Z) Orbital

1. Chemistry Multiple Choice:

When a substance repels water, it is described by the word:

W) Hydrophilic

X) Hydrophobic

Y) Hydrorepelling

Z) Hydrated

1. Chemistry Multiple Choice:

When a mixture is mixed together with individual components which can be distinguished with a microscope, it’s known as a \_\_\_\_\_\_\_\_

W) Homogeneous Mixture

X) Heterogeneous Mixture

Y) Homogeneous Compound

Z) Heterogeneous Compound

1. Chemistry Multiple Choice:

What makes a solid amorphous?

W) Its organized structure

X) Its randomly jumbled structure

Y) Its green structure

Z) Its big structure