

Chemistry Problems

December 22, 2020

1 Khan Academy: AP Chemistry

1. Calculate the number of moles in a 1.52kg sample of glucose ($\text{C}_6\text{H}_{12}\text{O}_6$)

Solution: Atomic mass of carbon is 12.011u, hydrogen 1.008u, and oxygen 15.999u.

$$12.011 \cdot 6 + 1.008 \cdot 12 + 15.999 \cdot 6 = 180.156\text{u molecular mass of glucose.}$$

$$1.52\text{kg glucose} \cdot \frac{1000\text{g}}{1\text{kg}} \cdot \frac{1\text{mol glucose}}{180.156\text{g}} = 8.44 \text{ moles of glucose}$$

2. A certain ion has 20 protons and 18 electrons. What kind of element is this ion, and what is its net charge?

Solution: It's a calcium ion with a net charge of +2.