CHM 1025 Practice Questions - Chapters 2, 3, 4 & 5

- A piece of silver (Ag) metal weighing 194.3 g is placed in a graduated cylinder containing 242.0 mL of water. The volume of water now reads 260.5 mL. From these data calculate the density of silver.
- 2. The density of lithium metal is 535 kg/m³. What is this density in g/cm³?
 - a. 0.000535 g/cm^3
 - b. 0.535 g/cm^3
 - c. 0.0535 g/cm^3
 - d. 0.54 g/cm^3
 - e. 53.5 g/cm³
- 3. A sample of water is heated from room temperature to just below the boiling point. The overall change in temperature is 72 degrees Celsius. Express this temperature change in Kelvins.
 - a. 345 K
 - b. 72 K
 - c. 0 K
 - d. 201 K
 - e. 273 K
- 4. How many neutrons does ²³⁵₉₂ U contain?
 - a. 235
 - b. 92
 - c. 238
 - d. 143
 - e. 327
- 5. What is the mass number of an oxygen atom with nine neutrons in its nucleus?
 - a. 8
 - b. 9
 - c. 17
 - d. 16
 - e. 18
- 6. What is the correct formula for sodium nitride?
 - a. NaN
 - b. NaN₃
 - c. Na₃N
 - d. NaNO₃
 - e. NaNO₂
- 7. What is the correct name of the compound Hg₂CrO₄?
 - a. Mercury(I) chromate
 - b. Mercury(II) chromate
 - c. Mercury dichromate
 - d. Dimercury chromate
 - e. Monomercury chromate

- 8. A monatomic ion has a charge of +2. The nucleus of the parent atom has a mass number of 55. If the number of neutrons in the nucleus is 1.2 times that of the number of protons, what is the name and symbol of the element?
- 9. What is the correct name of the compound HClO₄?
 - a. Chlorite
 - b. Chloric Acid
 - c. Perchloric Acid
 - d. Hydrochloric Acid
 - e. Chlorate
- 10. A fictional element with atomic mass 30.0584 amu has two naturally occurring isotopes with their abundances shown here. Find the mass of isotope 29.

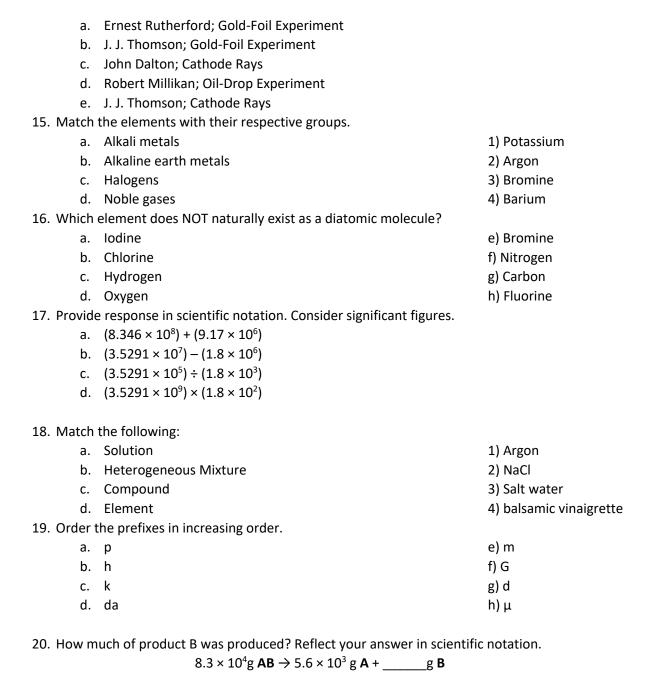
Isotope	Abundance	Mass (amu)
30	30%	30.0964
29		

- a. 29.5485 amu
- b. 29.8261 amu
- c. 30.0421 amu
- d. 30.0962 amu
- e. 30.1025 amu
- 11. How much energy is required to heat 8 grams of water from 9 degrees Celsius to 56 degrees Celsius?
 - a. 366 J
 - b. 1573 J
 - c. 1929 J
 - d. 87 J
 - e. 2031 J
- 12. How much energy is required to heat 8 grams of water from 9 degrees Celsius to 56 degrees Celsius ?
 - a. 366 J
 - b. 1573 J
 - c. 1929 J
 - d. 87 J
 - e. 2031 J
- 13. To which of the following does C₆H₁₂O₆ (glucose) correspond?

a. formula mass: 180.16 amub. molecular mass: 180.16 amuc. formula mass: 30.03 amu

d. molecular mass: 30.03 amu

14. Who is credited with the discovery the electron? How was the electron discovered?



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Answer key
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- 1. 10.5 g/mL
- 2. b
- 3. a
- 4. d
- 5. c
- 6. c
- 7. a
- 8. ⁵⁵₂₅Mn²⁺; manganese
- 9. c
- 10. c
- 11. b
- 12. b
- 13. b
- 14. e
- 15.
- a-1
- b-4
- c—3
- d-2
- 16. g
- 17.
- a. 8.438 x 10⁸
- b. 3.35 x 10⁷
- c. 2.0 x 10²
- d. 6.4 x 10¹¹
- 18.
- a-3
- b-4
- c-2
- d—1
- 19. a, h, e, g, d, b, c, f
- 20. 7.7 x 10⁴g