

CHM 1025 Exam 1 UF Teaching Center Exam Review

- Using PC for physical change and CC for chemical change, identify the following: Limestone crushed, paper burns, steam condenses, air expanding.
 - PC, PC, PC, CC
 - PC, CC, CC, PC
 - CC, PC, PC, CC
 - PC, CC, PC, PC
 - CC, PC, CC, CC
- Indicate how many significant figures are in the following values:

0.00967	45.908	900.0	9.6700	2700
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 - 5, 4, 3, 3, 4
 - 3, 5, 4, 5, 2
 - 6, 5, 1, 3, 2
 - 3, 4, 4, 5, 4
 - 5, 5, 3, 5, 2
- Diamonds are measured in carats and one carat equals 0.200 grams. The density of diamond is 3.51 g/cm³. What is the volume in cm³ of a 5.0 carat diamond?
 - 3.51 cm³
 - 3.5 cm³
 - 1.42 cm³
 - 0.284 cm³
 - 0.28 cm³
- Name the following compounds: CrBr₃, FeSO₄, NO₂.
 - Chromium (II) bromide, iron sulfite, mononitrogen dioxide
 - Chromium (I) bromide, iron (II) sulfite, nitrogen (II) oxide
 - Chromium tribromide, iron sulfate, nitrogen oxide
 - Chromium bromide, iron (II) sulfide, nitrogen (II) dioxide
 - Chromium (III) bromide, iron (II) sulfate, nitrogen dioxide
- What is the classification of CaCO₃?
 - Atomic Element
 - Molecular Element
 - Molecular Compound
 - Ionic Compound
 - Atomic Compound

6. The coldest temperature ever measured in the United States is -80.0°F on January 23, 1971, in Prospect Creek, Alaska. What was the temperature in Kelvin?

A) 211 K
B) 299.8 K
C) 371 K
D) 335 K
E) 273 K

7. Determine which of the following samples is the heaviest:

1.1×10^{23} gold atoms 2.82×10^{22} helium atoms 1.8×10^{23} lead atoms

A) Gold sample
B) Helium sample
C) Lead sample
D) Gold and Lead weigh the same
E) All the samples weigh the same

8. An unknown element X that has two isotopes has been discovered. What is the relative atomic mass of the element?

Isotope	Mass (amu)	Natural Abundance
^{22}X	21.995	75.00
^{20}X	19.996	25.00

A) 22.32
B) 21.97
C) 20.74
D) 21.50
E) 19.50

9. One of the compounds in cement has the following composition: 52.66% Ca, 12.30% Si, and 35.04% O. What is its empirical formula?

A) $\text{Ca}_3\text{Si}_2\text{O}_5$
B) Ca_3SiO_5
C) $\text{Ca}_2\text{Si}_2\text{O}_5$
D) CaSiO
E) $\text{Ca}_6\text{Si}_2\text{O}_{10}$

10. A 1.00 M solution of dye is diluted by taking 10.00 ml of it and adding enough water to make 100.0 ml solution. Then, 10.00 ml of that solution is diluted to a volume of 250.0 ml. What is the concentration of the diluted dye?

- A) 0.00200 M
- B) 0.00250 M
- C) 0.00400 M
- D) 0.0250 M
- E) 0.0400 M

11. What is the percent mass of nitrogen in NaNO_3 ? N_2H_4 ?

- A) 16.5%, 87.4%
- B) 18.3%, 76.2%
- C) 16.5%, 76.2%
- D) 35.1%, 50.6%
- E) 18.3%, 42.9%

12. The ^{81}Br isotope has which atomic number, neutron number, and mass number, respectively?

- A) 35, 46, 81
- B) 35, 81, 46
- C) 81, 46, 35
- D) 46, 81, 35
- E) 35, 81, 116

13. An unknown substance has a density of 0.983 g/cm^3 . What is this density in $\text{ng}/\mu\text{m}^3$?

- A) 98.3
- B) 0.983
- C) 9.83×10^{-2}
- D) 9.83×10^{-4}
- E) 9.83×10^{-6}

14. Convert the following values to proper scientific notation. (a) 29,500 (b) 0.000082 (c) 0.0100

- A) 2.95×10^{-4} , 8.2×10^5 , 1×10^2
- B) 2.95×10^4 , 82×10^{-5} , 1×10^3
- C) 2.95×10^4 , 8.2×10^{-5} , 1×10^{-2}
- D) 29.5×10^4 , 8.2×10^{-5} , 1×10^2
- E) 2.95×10^{-4} , 8.2×10^5 , 1×10^{-2}

15. Which of the following elements form diatomic molecules?

- A) Iodine
- B) Carbon
- C) Helium
- D) Bromine
- E) Lithium

16. Which of the following are different for isotopes of an element?

- I. mass number
- II. atomic number
- III. neutron number
- IV. mass of an atom

- A) Only I
- B) Only II
- C) I and II
- D) II and III
- E) I, III, and IV

17. How many protons and electrons does Al^{3+} have?

- A) 13, 10
- B) 13, 16
- C) 14, 16
- D) 16, 10
- E) 10, 13

18. Identify the following combinations of elements in a compound as ionic or molecular.

(a) nitrogen and oxygen (b) potassium and oxygen (c) nickel and chlorine

- A) Ionic, Molecular, Ionic
- B) Molecular, Ionic, Molecular
- C) Ionic, Molecular, Molecular
- D) Molecular, Ionic, Ionic
- E) Molecular, Molecular, Ionic

19. Calculate the molarity of the following solution: 6.30 g HNO_3 dissolved in 255 mL of solution.

- A) 0.39 M
- B) 0.49 M
- C) 0.20 M
- D) 2.3 M
- E) .020M