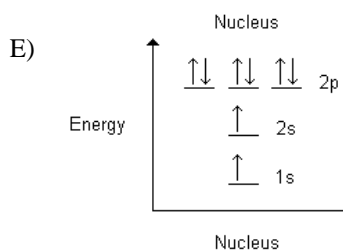
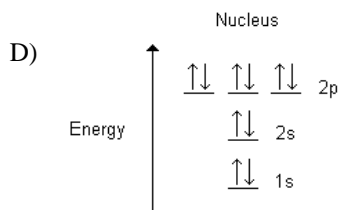
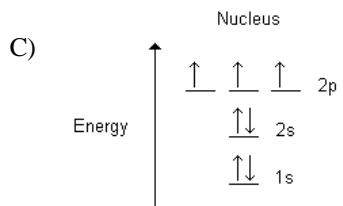
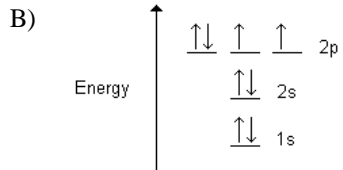
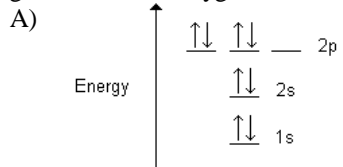


- 1) Find the volume of an object that has a density of 3.14 g/mL and a mass of 71.5 g.
- 22.8 mL
 - 4.39×10^{-2} mL
 - 225 mL
 - 2.28×10^{-2} mL
- 2) Which of the following involves no chemical change?
- burning paper
 - boiling water
 - baking a cake
 - lighting a match
- 3) How many protons, electrons, and neutrons, respectively, does ^{127}I have?
- 53, 127, 74
 - 53, 53, 127
 - 74, 53, 127
 - 53, 53, 74
- 4) Perform the following conversion:
5.80 m/s = _____ mi/h
- 0.386 mi/h
 - 13.0 mi/h
 277. mi/h
 216. mi/h
- 5) A *d* sublevel can hold a maximum of
- 5 electrons
 - 10 electrons
 - 14 electrons
 - 32 electrons
- 6) Which electron configuration indicates a transitional element?
- $1s^2 2s^2 2p^6 3s^1 3p^6$
 - $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^3$
 - $1s^2 2s^2 2p^5$
 - $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^2$
- 7) When an electron in the ground state absorbs energy, it goes to a(n) _____ state.
- excited
 - lower
 - frenetic
 - ionic
- 8) Thorium-234 undergoes beta particle production. What is the other product?
- $^{234}_{91}\text{Pa}$
 - $^{234}_{89}\text{Ac}$
 - $^{233}_{90}\text{Th}$
 - $^{233}_{91}\text{Th}$
- 9) A particular radioactive element has a half-life of 8.53 days. What percent of the original sample is left after 15.0 days?
- 54.4%
 - 14.8%
 - 59.1%
 - 29.6%
- 10) Rank the following from **smallest to largest** atomic radius.
- O, Zn, Ca, Ba
 - O, Ca, Zn, Ba
 - Ba, Ca, Zn, O
 - O, Zn, Ba, Ca
- 11) The name of the ClO_2^- ion is
- chlorite
 - chloride
 - hypochlorate
 - perchlorate
- 12) Which of the following compounds contains one or more covalent bonds?
- NaCl
 - CaO
 - CO_2
 - Cs_2O
- 13) The correct name for FeO is
- iron oxide
 - iron(II) oxide
 - iron monoxide
 - iron(I) oxide
- 14) The Lewis structure for which of the following contains the greatest number of lone pairs of electrons?
- CH_4
 - HF
 - F_2
 - H_2O
- 15) The boiling point of CH_4 is much lower than that of HF. This is because:
- of London forces in CH_4
 - of Hydrogen bonding in HF
 - of Dipole-Dipole interactions in CH_4
 - CH_4 is polar
 - HF is heavier
- 16) Which of the following is the formula for aluminum oxide?
- AlO
 - AlO_2
 - AlO_3
 - Al_3O_2
 - Al_2O_3

17) Choose the correct energy level diagram for the ground state of oxygen.



18) Which is an isotope of Iodine?

- A) 53 protons, 53 electrons, 74 neutrons
- B) 50 protons, 53 electrons, 77 neutrons
- C) 53 protons, 53 electrons, 77 neutrons
- D) 53 protons, 50 electrons, 127 neutrons
- E) 50 protons, 50 electrons, 127 neutrons

19) 2.5 kilogram(s) contains this many grams:

- A) 2.5×10^2
- B) 2.5×10^3
- C) 25
- D) 0.25
- E) 2.5×10^{-3}

20) Express 9230000 in scientific notation

- A) 923×10^2
- B) 9.23×10^6
- C) 9.23×10^{-6}
- D) 92.3×10^8

21) Which metric prefix is used to designate 100?

- A) H
- B) m
- C) B
- D) c
- E) d

22) Which of the following would be expected to be the strongest?

- A) Ionic
- B) Covalent
- C) Network covalent
- D) Hydrogen bonding

23) Which of the following is an intramolecular force?

- A) Ionic
- B) Hydrogen bond
- C) London Force
- D) Polarity

24) Which of the following is a polar molecule?

- A) CO_2
- B) SiCl_4
- C) CaBr_2
- D) CH_3OH

25) Alpha particles are

- A) electrons
- B) protons
- C) neutrons
- D) helium nuclei
- E) X rays

26) Which of the following elements is an alkaline earth metal?

- A) Ca
- B) Cu
- C) Fe
- D) Na

27) Which of the following would hydrogen bond?

- A) CH_2O
- B) CH_4
- C) CH_3OH
- D) $\text{C}_2\text{H}_5\text{Br}$