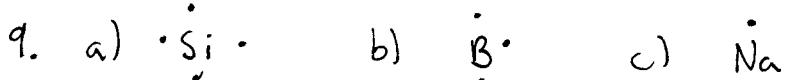


Chapter 1 Review

pg. 45-47

1. c 2. b (8) 3. d 4. b 5. b 6. e
7. c



12. AR = distance from nucleus to outermost electron
This is different than circular object because atoms are not perfect spheres, the e^- are more cloud like.

16. negative EA \Rightarrow energy released when an atom gains an e^-
 \therefore atom will be stable when it gains an e^- , so negative charged ion.

17. As, Sb

19. Average atomic mass = $(\text{mass Sb-121})(\% \text{ Sb-121}) + (\text{mass Sb-123})(\% \text{ Sb-123})$
= $(120.9038)(0.5780) + (122.9042)(0.4220)$
= 121.76

\therefore average atomic mass is 121.76 a.m.u.

22. When alkali metal loses e^- the atom one less energy level. Thus, there is a significant decrease in size because there is much less space between protons in nucleus and outer electrons.

23. Halogens only need one more e^- to have a full valence shell, so they have a lot of pull to gain an e^- (i.e. have large negative EA)

26. Review how to draw B-R diagrams.

28. Isotopes of an atom have the same # protons but different # of neutrons.
36. Alkali metals have low ionization energy ∴ highly reactive.

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3. d 4. b 5. a 6. d 7. e 8. b
9. a

II. Isotopic abundance indicates how common a certain isotope of an atom is. The greater the abundance of an isotope the more influence its mass has on the average atomic mass.

13. Average atomic mass = $(\text{mass Eu-151})(\% \text{Eu-151}) + (\text{mass Eu-153})(\% \text{Eu-153})$
 $= (150.92)(0.4780) + (152.92)(0.5220)$
 $= 151.964$

∴ average atomic mass of Europium is 151.964 a.m.u.

17. a) Across period ↑, down group ↓
 b) Across period ↓, down group ↑
 c) IE and AR trends are opposite
 d) As Z_{eff} increases valence electrons are held tighter so AR decreases but it becomes harder to remove an e^- so IE increases.
 As # of energy levels increase AR increases but since electrons are further from nucleus it is easier to remove an electron.