Chem 1013 mini-quiz 3 Tuesday 6 Sept 2017 A 5 pts

Your name\_\_\_\_\_\_\_\_\_\_\_answers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6

C

12.011

1)In the element card to the left, the `6’ represents \_\_\_C\_\_proton count\_\_\_\_\_\_\_\_\_\_\_

The 12.011 represents the \_\_\_average atomic mass\_of C\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Boron (B) comes in two flavors and with the ~masses and % abundances listed

below:

Isotope ~Mass (amu) % abundance

11B 11.0 81.0

10B 10.0 19.0

What does an average B weigh in amu to the nearest 0.1? \_\_\_\_\_\_10.7\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_amu

(show work below) 3 pts (11\*81 + 10\*19)/100 =10.7

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Your name\_\_\_\_\_\_\_\_\_\_\_\_\_\_answers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is the difference between mass number and average atomic mass for an element?

Mass number is the sum of a proton and neutron count for a specific isotope

Average atomic mass is the average of all the isotope masses and reflects their % abundance.

C

1. In the element card shown here, indicate with an arrow where the average

atomic mass for **C** appears.

3) Chlorine (Cl) comes in two flavors and with the ~masses and % abundances listed below:

Isotope ~Mass (amu) % abundance

35Cl 35.0 75.8

37Cl 37.0 24.2

What does an average Cl weigh in amu to the nearest 0.1? \_\_\_\_35.5\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_amu

(show work below) 3 pts

(35\*75.8 + 37\*24.2)/100 = 35.48

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Your name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. The fact that the average mass of any element is not a whole number reflects the presence of several different\_\_\_\_\_ISOTOPES\_\_\_\_\_\_\_\_\_\_\_ for each element
2. Silicon (Si) has three flavors with the exact masses and % abundance listed below. Calculate to the nearest 0.01 amu, what the average atomic mass of Si is: \_\_\_\_\_\_**28.08**\_\_\_\_\_\_\_\_ amu (show work)

4 pts

Si flavor exact mass % abundance

28Si 27.98 92.2 27.98\*92.2 + 28.98\*4.8 + 29.97\*3.0 = **28.09**

29Si 28.98 4.8 100

30Si 29.97 3.0