YEAR 11CHEMISTRY Assessable Topic Test: METALS (15%)

Name _____

1. Place the following materials in order of their chronological use from earliest to the most recent.
   Iron, Aluminium, Rock, Copper, Gold, Bronze.

_____ 3M

2. Explain why aluminium and iron are found as compounds in nature and gold and (occasionally) copper, can be found as the element? _____
   _____ 2M

3. What is an alloy? _____

   Give one example of an alloy and its use. _____
   _____ 3M

4. Briefly describe the extraction of copper or aluminium. Include the name of an ore, two physical steps and two chemical steps in the process, as well as one environmental issue.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____ 6M

5. Give fully balanced symbol equations for the following reactions. Include states.

(a) Sodium reacting with oxygen.

_____

(b) sulfuric acid and potassium hydroxide.

_____

(c) Magnesium in steam.

_____

(d) Zinc and hydrochloric acid..

_____

(e) Half equation for the loss of two electrons from calcium.

_____ 10M

6. Describe an experiment you could carry out in the lab to determine the order of reactivity of a number of metals.

_____
_____
_____
_____
_____ 4M

7. What is ionisation energy? _____
_____

Examine the successive ionisation energies of three elements below. To which groups do they belong?

Element	1st	2nd	3rd	4th	5th
X	9534	11790	13683	15309	16458
Y	502	4569	6919	9550	13356
Z	584	1823	2751	11584	14837

X _____ Y _____ Z _____ 4M

7. What is meant by electronegativity? _____
_____

Explain why the electronegativity of elements increases across a period yet decreases down a group. _____
_____
_____
_____ 3M

8. Give the names of two scientists associated with the development of the Periodic Table.
_____ _____ 2M

9. Name: (a) an element in Group VIII _____
(b) an Alkali Metal _____
(c) the expected valency of beryllium _____
(d) the element with the smallest atomic radius _____
(e) the Group that iodine belongs to _____ 4M

10. Determine the percentage of Cu-63 and Cu-65 if the relative atomic mass is 63.5
_____
_____
_____
_____ 4M

11. Calculate:

(a) moles in 8.5g sodium _____

(b) particles in 11g carbon dioxide _____

(c) mass of 3.5 moles of oxygen _____

(d) volume of 2.0g nitrogen gas at SLC _____ 8M

12. What mass of magnesium would react with 6.5g hydrochloric acid? Calculate the volume of hydrogen gas produced at SLC and the mass of magnesium chloride remaining after evaporation of the resulting solution. _____ 5M