المدرسة الوطنية الأرثوذكسية الشميساني

The National Orthodox School Shmaisani

Second Month Assessment | Lower Secondary Stage (6-8)

Name: .....Anwser key.....
Date: / /

Subject: chemistry
Class: Grade 7
Time: 45 minutes

For Teacher's Use	
QUESTION NUMBER	**MARK SCHEME**
1	/7
2	/3
3	/2
4	/8
Total	**/ 20**

READ THESE INSTRUCTIONS FIRST

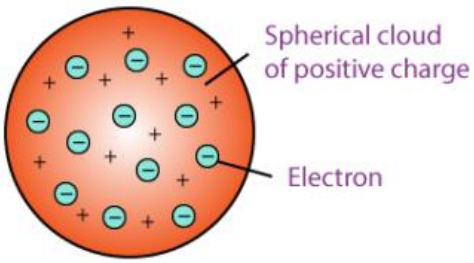
- Answer all the questions in the spaces provided on the question paper.
- Write in Blue pen only. You may use a pencil for the drawings and the graphs.
- You should pay attention to *what is required* in each question.
- Number of pages: 4
- Number of questions: 4
- The number of marks is given in brackets [ ] at the end of each question or part question.

Question one: Circle the metal that is described in each statement. **7 marks**

Circle the metal that…….	LIST OF METALS
Has a low density.	Fe K Mg Cu It floats on the surface of water during the reaction
A metal that doesn't react with water even if heated.	Cu Zn Fe Au Gold is highly unreactive. Note: Cu reacts slowly with hot water
Slightly changes the color of the indicator when reacts with cold water.	Zn Au Na Ca Zinc shows weak reaction with cold water, few bubbles will be formed, so it will slightly changes the color of the indicator
More reactive than Mg but less reactive than Na.	Cu Ca Fe Mg In group 2, as you go down the group the reactivity increases
When reacts with oxygen by burning it, A thin layer of grey color forms on the surface.	Li Mg Cu Zn Evidence presented in the video attached on LMS
Has the highest rate of reactivity.	Ca Na K Li G1 elements are highly reactive as you go down the group
Reacts slowly with cold water forming small bubbles on the surface.	Mg Fe Li Be Test was done in the lab

Question two: Draw a diagram to represent Thomson's atomic structure. **3 marks**

Any drawing showing the +ve and -ve charges is accepted



What is the name of this model? …Plum pudding model….

Question three: Choose the correct answer: **2 marks**

1. **Which of the following was NOT a conclusion of Rutherford's gold foil experiment?**

a) The atom is mainly an empty space.
b) The nucleus has a negative charge.
c) Alpha particles can pass through a thin sheet of gold foil.

2. **Statement 1:** During Rutherford's gold foil experiment, a beam of alpha particles was directed at a thin sheet of gold foil. This helped to prove the existence of a nucleus in the atom.

   Statement 2: few of the negatively charged alpha particles were able to pass through the gold foil.

a) Statement 1 is true, Statement 2 is true
b) Statement 1 is true, Statement 2 is false
c) Statement 1 is false, Statement 2 is true

3. **Which of the following conclusions can be drawn from the Rutherford model?**
   - **I. The atom is mostly empty space.**
   - **II. Electrons have a negative charge** (Thomson's model showed that all atoms contain tiny negatively charged subatomic particles or electrons)
   - **III. The atom has a dense, positively charged nucleus.**

a) II only
b) I and III only
c) I, II and III

IV. In the Rutherford experiment, most of the alpha particles were able to pass through a thin gold foil. This leads to the conclusion that:

a) An atom has orbits in it.
b) An atom consists of a heavy, positively charged particle called nucleus. (this will cause the particles to bounce back or change direction)
c) It supported Thomson's plum pudding model.

Question four: 8 marks

A student is planning to investigate the reactivity of four elements with water and open air.

The results for the investigation are given in the table below:

metal	Reaction with cold water	Reaction with open air
Zinc	Slow reaction	Slow reaction with open air
Sodium	Vigorous reaction, rapid change in color of the indicator, fizzing on the surface, a gas given out	Rapid change in the color. Changes from shiny to dull
Gold	No reaction	No reaction
Magnesium	Reacts slowly forming small bubbles on the surface of the ribbon.	Slow reaction. It forms a grey layer on the surface after weeks.

- **Where in the periodic table (in which group) you find the least reactive elements? ...Transition metals...**

- **Which is more reactive with water, Na or Mg? ...Na.... from group …1. .**

- **The student added a drop of phenolphthalein indicator to all of the test tubes. He observed a change in color in 3 test tubes.**
  The test tube containing which metal will NOT change the color of the indicator?
  …Au/ Gold….
  Explain your answer ...Phenolphthalein changes its color only in alkaline solution. Au will not react with water (it remains neutral)

- **How can you increase the reactivity of magnesium and zinc with water?**

  ……..Repeat the test using hot water/ steam (Can't say add hot over it)……..

- **Write a word equation for the reaction of magnesium with open air.**
  ……magnesium + oxygen → magnesium oxide……

- **Write a word equation for the reaction sodium with water.**

  ……sodium + water → sodium hydroxide + hydrogen…