Aissa Hamitouche Secondary School ***Yearly school : 2015-5016***

Second Year Scientific Stream: AS + GM ***Time Duration: 15h – 17h***

SECOND TERM EXAM

Part One: Reading

Read the text carefully and do the activities

Everyone knows that some objects float in water and that others do not. An object that floats in water might sink in alcohol, and one that sinks in water might float in glycerin. All liquids possess in varying degrees the property that is called buoyancy- an upward push upon objects that are submerged within them.

If you throw a piece of dry wood into a pool, the wood floats; the upward push of the water makes this possible. An object that sinks in water- like a piece of iron- weighs less when under water than in the air; this also is because the water exerts an upward pressure upon it. When you are taking a bath in a well-filled tub, you can raise your whole body easily by a slight pressure of your hands. You could not do this so easily if you tried to raise yourself from the living-room floor because air is less buoyant than water.

In the third cenutry BC, Archimedes discovered the principle of buoyancy. It states that a body wholly or partly immersed in a fluid is buoyed upward with a force equal to the weight of volume of liquid it displaces. Let us imagine that in a full pail of water we place an iron ball that weighs ten pounds when weighed in air. We discover, however that under water this ball weighs only eight pounds- a loss of two pounds. The volume of water that spilled over when the ball was placed in the full pail weighs two pounds, which just equals the ball's loss of weight. The ball is actually buoyed up by a force equal to the weight of the water it displaces.

A/ Comprehension and Interpretation:

1- Write the letter which corresponds to the right answer:

A/ The text is about:

a- The property of buoyancy b- Famous discoveries c- Scientific experiments

B/ The weight of some objects under water and in the air is:

a- The same b- different c- unknown

C/ The experiments conducted through the text fit in :

a- Biology b- physics c- chemistry

2- Answer the following questions according to the text:

a- Do all objects sink in water?
b- How is buoyancy defined in the text?
c- Why is Archimedes so famous today?

3- In which paragraph is the explanation for the experiment given?

4- What or who do the underlined words refer to in the text?

a- One (1§) b- this (§2) c- that (§3)

B/ Text Exploration :

1- Find in the text words that are synonyms to the following:

a- Own=(§1) b- entire= (§2)

2- Find in the text words that are opposite in meaning to the following:

a- more(§2)≠ b- empty (§3)≠

3- ***complete the chart as shown in the example***:

Verb	Noun	Adjective
To invent	Invention	Inventive
……	experiment	…….
To believe	……..	…….
…….	……..	successful

4- Give the correct form of verbs in of the brackets:

If you (to rub) an object with silk, it (to acquire) a positive charge. But when two balloons (to be rub) against a woollen sleeve, they (not attract) to each other because the charge they acquire (to be) the same, either positive or negative .

5- Classify the following words according to the number of their syllables:

experiment- science- float – hypothesis

One syllable	Two syllables	Four syllables

6- Fill in the gap with the words from the list :

moves- happens – energy – flow

Electricity is a type of …1….. that can build up in one place or …2…… from one place to another. When electricity gathers in one place it is known as static electricity. But when it…3…… it is called current electricity. Static electricity often …4…… when you rub things together.

Part Two: Written Expression

Choose one of the following topics:

Topic 1:

Use the information to write a description of an experiment

*You/ to fill two bowls / with warm tap water
*You / to add salt / to one of the bowls
*You / to place two eggs / different
*Egg in salt water / to float
*But other egg / to sink
*Why? salt water / heavier / tap water

Topic 2:

What will you do if you fail your baccalaureat exam next year?