**535/1**

**PHYSICS**

2**hours and 30 mins**

**PRE -MOCK ASSESSMENT EXAM**

**Uganda certificate of education**

**Physics**

**INSTRUCTIONS TO CANDIDATES:**

This paper consists of two sections with seven items

Section **A** has **Three compulsory** items

Section **B** has two parts **I** and **II ,** answer **one** item from each part

Answer **Five** items in all

**SECTION B**

**(** Answer all items in this section)

**ITEM ONE**

During an English lesson in senior two which normally takes place in the **school mainhall** , Joan one of the students has always been complaining that when she **sits infront**, **she is unable to see** letters on the chalkboard clearly, she always wants to see at the back of the class but the English teacher doesn't allow her to sit at the back thinking that she will not be attentive . Ketra is also a student in this class ,she found out that whenever the **mainhall is empty,** and noise is made , alot of **repeated sound** is heard which is never heard when the mainhall is full of students , this has always puzzled her

**TASK**

As the a physics student help and explain to;

a) the English teacher and the entire class the reason why Joan is **unable to see** clearly when she sits infront of the class and what should be done to solve this problem

b) Ketra the cause of the repeated sounds when the hall is empty ( 12 scores)

**ITEM TWO**

In a certain village quarrel broke up between the villagers and a newly constructed industry,the villagers blamed the industry owners for deliberately pouring industrial wastes in the river which provides water for domestic use. They decided to call a scientist to check the water from the river. The scientist examined the water and found out that the water was purely unsafe for use with certain **radioactive chemicals** as shown below

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Time( days) | 0 | 10 | 20 | 30 | 40 | 50 |
| Counts per day | 1200 | 740 | 440 | 260 | 160 | 70 |

The scientists therefore recommended the villagers not to use the water until the counts are 40 counts per day

As physics student ;

a) Advise the villagers about the time the villagers should wait for the water to be safe again

b) Sensitise the members of the village on **risks** associated with radioactive materials and how they water in th river should be handled before it becomes safe again

**ITEM THREE**

Conflicts have broke up between people of different beliefs , they argue about issues like the ; all stars **have one colour** and they will **never die,** the sun **gets its energy** from burning millions firewood inside it, and the different **seasonal changes** occur due to small god's will .This has brought burning issues in the minds of people in the community which is about to bring division among people in the community

TASK

As a physics student how can you help and address the above problems to stop divisions among people of the community

SECTION B

ITEM FOUR

Your father after receiving all his savings from National Social Security Fund (NSSF) has decided to engage in a small scale business. In a available business he has decided to sale paraffin. He has made an order of four 20 litre jerrycan from a certain fuel sellselling station in the nearby town. However the prices of each litre of paraffin is somehow low compared to the expected price, this has made him doubt the **purity** paraffin brouht .

**TASK**

Assuming you have been given a sample of this paraffin, carry out a scientific investigation on the paraffin of paraffin your dad has bought ( hint density of paraffin is 800kg/m³

ITEM FIVE

The **National Environmental Management Authority (NEMA)** has destroyed a number of people's residential houses claiming that they were built in swampy areas which is one of the major cause of **high temperatures both during day and night** and this has always caused suffering to many people. Your father is also planning to buy land in a swampy area to construct a residential house. Th engineer has advised him to buy material that will form a **firm foundation** so that water may not **rise up the floor of the house**

**TASK**

Explain to your father

a)how swampy reclamation may lead to **high temperatures during day and night**

b)which materials can be used to lay **strong foundation of the house in a water logged area** and how the materials may be arranged

c) how the wetting of a house floor due to raising of water from the ground **occurs** and how it may be prevented

**END**