

535/1

PHYSICS (THEORY)

NOVEMBER. 2024

2 HOURS

MARIOLETT MODEL SECONDARY



SCHOOL

P.O. BOX 15 LORO-OYAM

NEW LOWER SECONDARY CURRICULUM (NLSC)

S.1 END OF CYCLE EXAMINATION 2024.

Time 2 HOURS

**INSTRUCTIONS TO CANDIDATES:**

ATTEMPT ALL ITEMS IN THIS PAPER.

**ITEM 1**

Long time ago, solar eclipses were considered as a message from the gods since the people in that age dwelt so much in the spiritual realm than the scientific world. However, with the development of science and technology, eclipses can now easily be explained scientifically instead of spiritually. Whenever eclipses occur, many people gather out in open places to watch the beautiful view of the heavenly bodies as they align themselves in a beautiful display. However, in most remote areas of Uganda some people still observe the eclipse directly using naked eyes not aware of the risk they are exposing their eyes to in the long run. The science club of your school has taken an initiative to always once in a while go out into the community and teach the community members about scientific facts. You are expected to organize for the presentation about eclipses.

**TASK**

As a student of physics and science club at the school, you are required to organize for the presentation about eclipses that you will use to address the community members on the day the eclipse is expected to occur. Conclude your presentation by recommending the best safe ways to watch an eclipse. **(20 scores)**

## ITEM 2

A S.1 child and her mum have gone to buy some cooking utensils. The mum explains to the shop attendant that she usually gets problems in cooking beans since they take long to get ready when being boiled in water, leading to wastage of energy and time. The attendant shows her an appliance made of steel, painted black at the bottom, and having plastic handle claiming it cooks fast due to its features. The lady is not convinced about the appliance and wishes to get more information before buying it; so she asks the child to explain more.

### Task:

Assuming that the lady is your parent or guardian, use knowledge of Physics to educate her on: why:

- (i) The steel pan should have a plastic handle. **(4 scores)**
- (ii) Why steel is an important property in this appliance. **(4 scores)**
- (iii) why the bottom of the pan and its sides are made of different colors respectively. **(4 scores)**
- iv) the different means by which heat from the heat source can reach the beans **(8 scores)**

## ITEM 3

Tobby , has just completed her primary seven at Yahweh Yerha nursery and primary school and admitted to Mariolett model high school . On reaching the school, he was told by his friends that he needs to take 10 books to class each day for the lesson. He was given 20 black books from the bursar's office, each of dimensions 30cm by 21cm by 2cm. And was given a bag that has a volume  $10080 \text{ cm}^3$ . He is really wondering of how she will be carrying the books to class in the bag every morning. Tobby reported late and he found that the teacher had already taught about fundamental and derived quantities,

Task.

- a) If Tobby can only take the books that can fit in the bag, help him determine how many books he can carry at a time and the number of books that will remain out of the 10 books. **( 10 scores)**
- b) If he sits on a single sitter of the upper deck of dimensions 105cm by 18cm. how many books can she put on the upper deck at a time. **(6 scores)**
- c) How best can you help her differentiate between the two quantizes giving two examples in each case? **(4 scores)**

#### ITEM 4

b) Rita and Dolly were seated in a house after returning from school. They noticed that the mother was frying chicken from a kitchen that was 20m away from the house. They found their room full of dust and yet all the door and windows were locked. As they were making stories dolly told Rita that she observed the following along the way as they were traveling, gaps where lift between successive rails of railway lines in lira, small insects were walking on top of water in okole swamp, one of the vehicle burst in front of them. Both of them could not understand those happenings.

Task.

As a physics student,

- a) Explain how the two sisters were able to detect the process that was taking place in the kitchen and why. **(4 scores)**
- b) Explain three factors that affect the process that is taking place in the kitchen. **(6 scores)**
- c) Help dolly understand the observations she made on the way. **(10 scores)**

**THE END. Happy x-mass and prosperous New Year 2025.**