535/1

PHYSICS

Paper 1

OCT/.2023

2 1/4 HRS

UGANDA CERFICATE OF LOWER SECONDARY EDUCATION (UCLSE)

BEGINNING OF TERM III ASSESSMENT 2023

SENIOR THREE

PHYSICS

Time allowed: 2 hours 15 minutes

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*Learner’s Identification Number:*

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*Name:*

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*Signature:*

INSTRUCTIONS:

* Attempt all questions in both sections; A and B.
* Each question in section A carries 5 marks altogether whereas each question in section B carries 15 marks.
* There are 80 marks available in the whole paper.
* All answers in section A should be written in the spaces provided only otherwise a number will be considered undone.
* Tidy work is a must otherwise a mark will be lost.

*Where necessary, use:*

* *Acceleration due to gravity = 10ms-2*

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**SECTION A**

1. A measuring cylinder has water level of what will be the new water level if of a metallic block of density is added?

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1. Michael who is a trader in Central Region deals in selling of Mercury-in-glass thermometers in contrast with traders who deal in thermometers of different thermometric liquids.
2. What might be the other two thermometric liquids that other traders deal in? ………………………………………………………………………………………………………………………………………………………………………………
3. It is noticed that Michael’s thermometers are on a high demand in the market. With three reasons, explain why it is so? ………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………
4. Bodies are said to be always in a state of equilibrium and have a Centre of Gravity.
5. Briefly distinguish between Stability and Centre of Gravity of a body.

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1. Name the three states of equilibrium.

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1. Among the forces that we have in nature is the friction force.
2. This force is said to be a nuisance, explain why?

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1. Of what importance can this force be?

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1. Jane always finds it hard to open her door and she discovered that all the problem is originate from the hinges failure to move well. She tried to ask the neighbor and she was told that oil can help. With your knowledge of with help Jane to understand why she was facing the difficult in opening the door and how oil is going to do make it easy.

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1. Jenifer has a plane mirror that she always uses to see her face.
2. State any other two mirrors that she can use to see her image of the face.

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1. What are some of the characteristics of the image of her face that she will see in the plane mirror?

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1. (a) State the following principles as applied to Physics;
2. Principle of conservation of energy

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1. Principle of transmission of pressure in fluids

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1. Principle of moments

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1. Rectilinear propagation of light.

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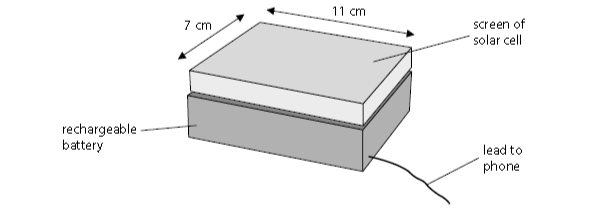
1. A box containing 20 physics new curriculum books for senior 3 each of weight 1. .5N of dimensions 0.25m x 2m x 3m weighs 1.5kg was placed on a surface made of soft wood. calculate;
2. Minimum pressure exerted on the surface by the box. …………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….......................................................................................................................................
3. Maximum pressure exerted on the surface by the box.

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1. Which side of the box is advisable to be place on the surface? Give a reason for your answer.

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1. The figure below shows a solar-powered charger for a mobile phone.



The screen of the solar cell takes in energy from the Sun.

**i)** Describe the energy transformations from the Sun to the phone battery

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(ii) Each second, 0.12 J of energy from the Sun reaches of the screen.

Calculate the total amount of energy reaching the whole screen in 10 seconds()

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**SECTION B**

1. During working hours, every man would want to hire a highly efficient machine to complete a task at hand.
2. Machine A performs 900J of work when supplied with 1000J of energy.

Machine B performs 800J of work when supplied with 900J of energy

1. Which machine wastes less energy?
2. In part (a) above, machine A performs the work in one hour and machine B performs work in 45 minutes. Which machine gives the greater power output?
3. Why is it important to determine the efficiency of a machine?
4. Why is there no machine 100% efficient in the whole world?
5. How would you improve on the efficiency of a machine?
6. What is the efficiency of the two machines and which machine would you recommend
7. The Earth is surrounded by a layer of air termed as the ‘Atmosphere’. This layer of air exerts pressure on every object on the surface of the Earth.
8. What term is given to the pressure in question (3) above?
9. Describe an experiment to show that the above pressure exists.
10. Explain the following observations in pressure;
11. A person feels more pain when pierced with a needle than when pierced with a nail provided the same amount of force is applied.
12. When one moves from lowland to the top of a high mountain, he may experience nose bleeding.
13. Water splashes out of a tap through its cylindrical pipe of radius 0.003 meters. If it comes out with a force of 8.5N, find the pressure with which the water splashes out of the tap.
15. a) Define the following terms
16. Displacement
17. Speed
18. Velocity
19. Acceleration

b) The diagram below represents a **velocity- time** graph of motion of a man who was riding a bicycle from the work place as he was going to visit his friend in the next village however on his way he remembered that he had forgotten the gift he had for him and this made him to go back to his house.

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6 12 18 time(s)

1. Describe the motion of the man
2. Calculate the total distance travelled
3. Calculate the displacement of the man

**THE END**

(LIFE IS DETERMINED BY OUR LOVE FOR IT)