**STUDENT’S NAME………………………………………………...**

**ADM NO……………………………………...FORM…………………………..**

**SCHOOL ….DATE**

**COUNTY MULTILATERAL EXAMINAITON**

**PHYSICS 232**

**FORM ONE TERM TWO 2016**

**TIME: 2 HOURS**

INSTRUCTIONS

*Write your name and admission number in the space provided Answer all questions in the space provided. A graph paper is attached.,*

*All working must be clearly shown The paper is out of 100 marks*

*Calculators are not allowed. KNEC Mathematical tables may be used. \**

*The paper has* 7 *printed pages. The student should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

*Take:*

*Earth gravitation strength, g=10N/kg*

*Density of water as l,000kg/ms*

*Density of mercury as 13,600kg/m3*

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|  |  |  |
| --- | --- | --- |
| Question | Maximum Score | Candidates Score |
| 1 -20 | 100 |  |

1. a) Define the term physics (1mk)

1. A part from physics, name other three natural sciences. (3mks)
2. i) An empty density bottle has a mass of 23.5g. When completely filled with water its mass is 39.0g. What will be its mass if it’s completely filled with an acid of density 1.25g/cm? (Take the density of water to be 1,0g cm3) (4mks)

ii) Distinguish between solid and liquid as states of matter in terms of intermolecular fcrces. (2mks)

2. a) Complete the table below (5mks)

|  |  |  |
| --- | --- | --- |
| Quantity | S.I. Unit | Symbol |
| Mass |  |  |
| Temperature |  |  |
| Time |  |  |
| Length |  |  |
| Electric current |  |  |

b) Define the following terms.

1. Fundamental quantity (2mks)

ii) Derived quantity (2mks)

In an experiment to measure the radius of a wire, a form one student cut a piece of wire into 50 identical pieces of length 14mm each. She dipped the pieces into water in a beaker. The Water level rose from 30.5cm3 mark to 80cm3mark. Determine the radius of the wire giving your answer to two decimal places. (4mks)



Explain why h2 is greater than h1



1. The diagram in figure 2 below shows a drop of liquid X and Y carefully put on a clean flat glass slab.
2. Explain the shapes of the drops (4mks)

b) Identify the drop which is likely to be for the following liquids,

1. Mercurv (lmk)
2. Matter (1mk)
3. a) A part from Newton per square metre (N/m2), name any other two units used in measuring pressure. (2mks)

i)

ii)

b) In a hydraulic brake the master piston ha§ an area of,5mm2while the wheel piston each has an area of 6cm2. Find the forces applied to the wheel when a force of 12N is applied on the master piston. (4mks)

7. a) What do you understand by the term particulate nature of matter? (2mks)

1. What is Brownian motion? (2mks)
2. Some cotton wool was soaked in ammonia solution and concentrated hydrochloric acid (HCl)and then placed at the ends of a glass tube as shown in figure 3below.
3. After sometime a white deposit of ammonium chloride forms on the walls of the tube. Using a cross x show where the deposit was formed. (2mks)
4. Explain your observation (2mks)
5. The experiment is repeated at a lower temperature. Explain how time taken to form the white deposit would be affected. (2mks)
6. a) The diagram in figure 4 below shows a bimetallic strip at room temperature.



Sketch a diagram to show the appearance of the bimetallic strip if put below 0°C. (2mks)

b) Give four reasons why mercury is a better liquid to use in thermometers over otherliquids (4mks)

i)

ii)

iii)

iv)

1. a) State four factors that determine the thermal conductivity in a material. (4mks)

i)

ii)

iii)

b) i) Explain why the inner surface of the lampshade is whitened. (2mks)

1. Explain why plants in greenhouse, experience higher temperature than ones outside (2mks)
2. a) Distinguish between real and virtual images. (2mks)
3. A ray of light is incident on a plane mirror as shown in figure 5 below



 What is the angle of reflection? (2mks)

1. What will be the angle through which the reflected ray rotates if the mirror is rotated anticlockwise through an angle of 35°? (2mks)

1. What would be the new angle of reflection?
2. An object of height 8.5cm stands 30cm in front of a pin-hole camera of length 15cm as shown in figure 6 below.



1. In the figure draw a ray diagram to show the image is formed. (2mks)
2. Describe the image formed. (2mks)
3. Calculate the magnification of the image. (3mks)
4. Find the height of the image. (1mk)
5. a) Define the following term; surface tension. (3mks)
6. a) Give three conditions necessary for a siphon to work i)

i)

ii)

b) Give two advantages of a force pump compared to a lift pump, i)

i)

ii)

1. Study the diagram in figure 7 below.



1. Sketch in the diagram the path of the smoke from the shouldering paper. (2mks)
2. What conclusion can be made from the path in (a) above. (4mks)
3. Explain the features in a thermos flask by which heat loss is reduced through;
4. Conduction –
5. Convection –

iii) Radiation - (6mks)