NAME……………………………………………………………

 ADM. NO . …………………… date ……………………………

CLASS…………………………………………………………….

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PHYSICS

FORM TWO

2 HOURS

SERIES THREE TERM T

**THE CENTRAL PUBLISHERS**

**FORM TWO**

**Instructions to Candidates**

* Write your name and class register number in the spaces provided above.
* Sign and write the date of examination in the spaces provided above.
* Answer **ALL** the questions in the spaces provided.
* ALL working **MUST** be clearly shown.
* Mathematical tables and **non** programmable silent electronic calculators may be used

**This paper consists of 8 printed pages**.

 **For Examiner’s Use Only**

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| --- | --- | --- | --- |
| **Section**  | **Question**  | **Maximum****Score**  | **Candidate’s** **Score**  |
|  | **1-17** | **55** |  |

1. A butcher has a beam balance and masses 0.5 kg and 2kg. How would he measure 1.5 kg of meat on the balance at once**? (2 marks)**

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1. In an experiment to determine the density of sand using a density bottle, the following measurements were recorded:

Mass of empty density bottle - 43.2g

Mass of density bottle full of water = 66.4g

 Mass of density bottle with some sand = 67.5g

Filled up with water = 82.3g

Use the above data to determine the:

* + 1. Mass of the water that completely filled the bottle: **(2 marks**)

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* + 1. Volume of water that completely filled the bottle: (1 **mark**)

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* + 1. Volume of the density bottle: (**1 marks)**

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* + 1. Mass of sand (**2marks)**

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 v). Mass of water that filled the space above the sand.  **(1marks)**

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 vi).Volume of the sand:  **(2marks)**

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 vi).Density of the sand  **(2 marks)**

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1. Figure 2 shows a U tube containing two liquids L1 and L2 of densities 0.8 g cm-3

and 1.8 cm-3 respectively in equilibrium. Given that h2 = 8 cm determine the value

 of h1  **(3 marks)**

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1. State the reason why it may not be possible to suck liquid into your mouth using drinking straw on the surface of the moon**. ( 2marks)**

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1. The total weight of a car with passengers is 25,000N. The area of contact of each of the four tyres with the ground is 0.025m2. Determine the minimum car tyre pressure

**(3marks) .**

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1. What is meant by virtual image**? (1 mark)**

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1. **Figure 6** shows a ray of light being reflected from a mirror.



* + - 1. **Figure 6**
		1. What is the angle of reflection? (**1mark)**

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1. One property of a liquid that is considered while construction a liquid – in – glass thermometer is that the liquid expands more than the glass for the same temperature change. State any other two properties of the liquids that are considered ( **2marks)**

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1. a)In the set up shown in Figure 4, it is observed that the level of the water initially drops before starting to rise. Explain this observation  **(2marks)**
	* + - 1. Figure 4

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* 1. The temperature of water in a measuring cylinder is lowered from about 200 c to 00. On the axes provided, sketch the graph of the Volume against temperature assuming the water does not freeze. **(2marks)**

 Volume

 Temperature

1. In the Brownian motion experiment, smoke particles are observed to move randomly. Explain how this motion is caused  **(2 marks)**

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1. In the set up shown in figure 3, water near the top of the boiling tube boils while at the bottom it remains cold.

 Give a reason for the observation  **(1mark)**

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1. A wooden bench and a metal bench are both left in the sun for along time. Explain why the metal bench feels hotter to touch. (**1mark)**

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State Hooke's law  **(2marks)**

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1. The three springs shown in the figure are identical and have negligible weight. The extension produced on the system of springs is 20cm.
	* + 1. 

Determine the constant of each spring. **(3 marks)**

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 What is meant by the centre of gravity of a body? (**1mark)**

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1. State one advantage of fitting wide tyres on a vehicle that moves on earth roads. **(1mark)**

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1. Fig. 7 shows how magnets are stored in pairs with keepers at the ends



 Explain how this method of storing helps in retaining magnetism longer. **( 2marks)**

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1. Give one advantage of using a convex mirror as a driving mirror (**1mark)**

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17. The magnetic field between the poles of two permanent bar magnets is shown below. The neutral point is marked X



1. Explain what is meant by a neutral point? **(1 mark)**

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1. Identify the poles marked A, B, C and D. **(2 marks)**

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1. Which is the stronger pole? B or C. **(1 mark)**

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1. Give a reason to your answer in (c) above. **(1 mark)**

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1. The two magnets were prepared by a student in a college. Suggest two different methods by which she could have prepared the two magnets. **(2 marks)**

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1. Draw the magnetic domains in magnet AB showing clearly the north and south poles.

 **(2 marks)**

**A B**

1. (i) State one difference between the magnetic properties of steel and iron. **(2 marks)**

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1. Given the two materials state which you would use to make: **(2 marks)**
2. An electromagnet

…………………………………………………………………………………………

1. A compass needle.

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***BEST WISHES***