**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ADM NO: \_\_\_\_\_\_\_\_\_\_CLASS:\_\_\_\_\_\_\_\_\_\_**

**DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ SIGN: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_TARGET\_\_\_\_\_\_\_\_\_**

**FORM TWO**

**PHYSICS**

**MID-TERM EXAM**

**TERM 1, 2024**

**INSTRUCTIONS: (Answer all the questions) TIME: (1 ½ HOURS)**

1. State any two modes of heat transfer. (2mk)
2. Give a reason why water is not suitable for use as a barometric liquid. (1mk)
3. Give a reason why heat transfer by radiation is faster than heat transfer by conduction. 1mk
4. State the number of images formed when an object is between two plane mirrors placed in parallel. (1mk)
5. Explain why the image formed in a pin hole camera gets blurred when the hole is enlaged. (2mk)

1. State the law of electrostatic charges. (1mk)
2. Two mirrors are inclining at **600** to each other. Determine the number of images observed and state one application of this arrangement. (3mk)
3. State two factors that determine the kind of image formed by a pinhole camera. (2mk)
4. A pinhole camera forms an image of size **10cm**. The object is **5m** tall and **20m** away from the pinhole. Find the length of the pinhole camera. (3mk)
5. Figure below shows a ray of light being incident on a mirror. (2MKS)

**480**

1. A sharp point of a pin is held in the bare hands and brought near the cap of a positive charged electroscope. **State** and **explain** the observation made on the electroscope. (2 mk)
2. State two uses of a gold leaf electroscope (2mk)
3. Two identical spheres A and B each standing on an insulating base are in contact. A negatively charged rod is brought near sphere **A** as shown below.

**A**

**B**

**Insulating rods**

**-**

**-**

**-**

**-**

**-**

In what way will **A** differ from **B** if separated while the rod is near? Explain. 2mk

1. An uncharged metal rod brought close to but not touching the cap of a charged electroscope caused decrease in the divergence of the leaf. Explain this observation. (1 mk)
2. Distinguish between electromotive force and potential difference (2mks

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1. The figure below shows a simple cell made of copper and zinc electrodes dipped in dilute sulphuric acid.

**Bulb**

**DilH2SO4**

**Zinc plate**

**Copper plate**

a) Identify the cathode and the anode. (2 mks)

Cathode ………………………..

Anode ………………………..

b) State the two common defects in a simple cell. (2 mks)

c) Explain how the defects in b) are minimized (2mk)

1. State two properties of magnets. (2mk)
2. Give a reason why attraction in magnetism is not regarded as a reliable method of testing for polarity. (1mk)
3. In an attempt to make a magnet, a student used the double stroke method as shown below.

**Magnetic material**

**Magnetic material**

**Y**

**X**

**N**

**S**

**S**

**N**

State the polarity at end X and Y. (2mk)

1. State the principle of moments. (1mk)
2. A uniform meter rule is pivoted at the **30cm** mark by a force of **16N** placed at the **0cm** mark.

**30cm**

**16N**

**0**

**100cm**

Calculate the weight of the meter rule**. (3mk)**

22. A micrometer screw gauge has a zero error of 0. 12mm.Sketch the reading of the micrometer screw gauge when used to measure the size of a ball of diameter 3.44mm. (2 mark)

23. In **figure 2** ammonia gas and an acid gas diffuse and react to form a white deposit on the walls of the glass tube. Explain why the white deposit forms nearer end B than A. (3mark)

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8. **Figure 3** shows a uniform bar of mass 0.8kg supported by a spring balance at its centre and the bar is at equilibrium.

////////////////////// support

Spring balance

0.8m 0.6m

XN 24N

**Figure 3**

Determine the:

(a) value of X (3 marks)