**Name: …………………………………………..………… Adm No.: ………… Class: ………**

**PHYSICS**

**FORM TWO**

**MID-TERM EXAM**

**TERM 2 - 2024**

**TIME:**

**INSTRUCTIONS**

**Answer ALL questions.**

1. Define the following terms as used in reflection. (3mks)
2. Center of curvature (c)
3. Focal plane.
4. Focal length (f)
5. An object is placed (a) 18cm (b) 6cm in front of a concave mirror of focal length 12cm. determine the position and nature of the image formed in each case. (4mks)
6. State and explain one advantage and one disadvantage of using a convex mirror as a driving mirror. (2mks)
7. State the Maxwell’s Right-hand grip rule for a call carrying current. (2mks)
8. State the factors that affect the strength of an electromagnet. (3mks)
9. Draw the magnetic field pattern due to two isolated straight conductors carrying a current. (2mks)
10. State three applications of an electromagnet. (3mks)
11. (a) State the Hooke’s law. (2mks)

(b) A metal cube suspended freely from the end of a spring causes it to stretch by 5.0cm. A 500g mass suspended from the same spring stretches by 2.0 if the elastic limit is not exceeded.

Find the weight of the metal cube. (2mks)

a.

b.

(c) By what length will the spring stretch if a mass of 1.5kg is attached to its end. (2mks)

1. A single spring extends by 3.6cm when a supporting a load of 2.0kg. Assuming that all the springs are identical and of negligible weight, what is the extension in the arrangement shown below. (4mks)

6Kg

1. Explain the following characteristics used the describe materials as used in Hooke’s law. (4mks)
2. Ductility –
3. Elasticity –
4. State two advantages of an electromagnet as compared to a permanent magnet. (2mks)
5. (a) Name the three states of equilibrium. (3mks)

(b) State two conditions for a body to be in a state of equilibrium. (2mks)

1. In an experiment to estimate the size of a molecule of olive oil, a drop of oil diameter 0.5mm was placed on clean water surface. The oil spread into a patch of diameter 0.2m; estimate the size of a molecule of olive oil. Write your answer in standard form. (4mks)
2. Express the following in grams giving the answer in standard form.
3. 25 kg. (2mks)
4. 3.0 tonnes. (2mks)
5. State three uses of magnets. (3mks)