**SECONDARY SCHOOL**

**TERM II CAT EXAMS, 2019**

**PHYSICS FORM TWO**

**NAME……………………………………………………..ADM NO……………STREAM…....**

*SECTION I (25 MARKS)*

1. The figure below shows a vernier calipers (3mks)

 7 8

 0 5 10

State the correct reading of scale if the instrument has a zero error of -0.02cm

1. A burette shows a liquid level as 20cm3. Ten drops of the same liquid each of 0.5cm3 are added. Calculate the new liquid level. (2mks)
2. The mass of a lump of gold is constant everywhere, but its weight is not explain this (1mks)
3. Tracks which carry heavy loads have many wheels. Explain (2mks)
4. Define surface tension (1mk)
5. State factors affecting surface tension (2mks)
6. Define diffusion (1mk)
7. Name and explain the factors that affect the rate of diffusion in gases (2mks)
8. The figure below shows a bimetallic strip at room temperature (250c)

 Aluminum

 Copper

1. Draw a bimetallic strip when at 900c. Explain the observation. (2mk)
2. Draw the bimetallic strip when at -250c. explain the observation (1mk)
3. State three method of charging a materials (3mks)
4. A pinhole camera of length 15cm forms an image 3cm high of a man standing 9m in front of the camera what is the height of man (3mks)
5. State two liquids that can be used in thermometer (2mks)

***SECTION II 55MARKS***

1. In an experiment to estimate the diameter of oil molecules 100drops of oil are released from burette and level of oil in burette changes from 0.5cm3 to 20.5cm3. one of the drops is placed on water and spreads over a circular patch of diameter 20cm
2. Determine
3. The volume of the oil drop (2mks)
4. The area of the patch covered by the oil (3mks)
5. The diameter of the oil molecule (3mks)
6. Sketch a micrometer screw gauge scale reading
7. 0.23mm (2mks)
8. 5.05mm (2mks)
9. Define the following terms (3mks)
10. Centre of curvature

1. Focal length
2. Radius of curvature
3. State the laws of reflection (2mks)
4. The mirror AB and CD are at right angles to each other

 A P D

 400

 Q

 900

 B C

1. What is the value of the angle of incidence of the ray PQ on the mirror AB (2mks)
2. Complete the diagram to show the path taken by the PQ after reflection at both mirrors(2mks)
3. Determine:
4. Angle of reflection on AB (1mk)
5. Angle incidence on CD (1mk)
6. Angle of reflection on CD (1mk)
7. State three application of plane mirrors (3mks)
8. Find the number of images formed when mirrors are inclined at 200  (2mks)
9. State pascal’s principle (1mks)
10. A block of copper of density 9g/cm3measures 5cm by 3cm by 2cm. given that g is 10N/kg, determine:

2cm

 3cm

 5cm

1. The maximum pressure (3mks)
2. The minimum pressure that can exert on a horizontal surface (3mks)
3. The barometric height in a town is 70cm mercury. Given that the standard atmospheric pressure is 76cm mercury and the density of mercury is 13600kg/m3, determine the altitude of the town. (density of air is 1.25kg/m3) (4mks)
4. Differentiate between magnetic and non-magnetic materials (2mks)
5. Sketch the magnetic field patterns for the arrangement below (1mks)

N

N

1. Explain the meaning of the following (2mks)
2. Magnetic field

1. Magnetic lines force
2. The graph below are for two magnetic material:

 A

 B

Magnetizing force

Strength of magnet

1. Which material is easier to magnetise? (1mk)
2. Which material forms a stronger magnet? (1mk)
3. State one application of each. (1mks)
4. Define dipoles (1mk)

1. Define moments of force and state its SI units (1mks)
2. State the principle of moment (law of lever) (1mks)
3. The diagram below shows uniform bars of negligible weight balanced about its centre by different forces. Calculate F (3mks)

 F

 6cm 5cm

 12cm

 2.5N 10N

1. A uniform metre rule is balanced at the 30cm mark when a mass of 50g is hanging from its zero cm mark. calculate the weight of the rule (3mks)