

KENYAPLEX EXAMS

KENYA CERTIFICATE OF BASIC EDUCATION

SENIOR SCHOOL ASSESSMENT

TERM 2: ENDTERM ASSESSMENT 2026

GRADE 10 – PHYSICS

Time: 2 Hours

LEARNER'S DETAILS

Name: _____ School: _____

Assessment Number: _____ Date: _____

School Code: _____ Signature: _____

INSTRUCTIONS TO CANDIDATES

1. Write the details as required in the spaces above.
2. This paper consists of two sections: A and B.
3. Answer all questions in section A and section B.
4. Answer the questions in English.
5. All answers MUST be written in the spaces provided in the paper.
6. Do NOT remove any page from this question paper
7. Silent non programmable calculators may be used.
8. Assume:
 - i. Acceleration due to gravity, $g = 10 \text{ m/s}^2$
 - ii. Density of water = 1000 kg/m^3

FOR OFFICIAL USE ONLY (EXAMINER'S USE)

SECTION	SECTION A	SECTION B	% SCORE	EE1	EE2	ME1	ME2	AE1	AE2	BE1	BE2
SCORE RANGE	30 MARKS	60 MARKS		90-100	75-89	58-74	41-57	31-40	21-30	11-20	1-10
	POINTS			8 POINTS	7 POINTS	6 POINTS	5 POINTS	4 POINTS	3 POINTS	2 POINTS	1 POINT
LEARNER'S TOTAL SCORE											

SECTION A (30 MARKS)

Answer ALL questions in this section.

1. Three learners at **Mang'u High School** are discussing the relevance of Physics.

- ✗ **Abdi:** "I want to study how stars and planets move."
- ✗ **Bakari:** "I am interested in how heat energy moves in car engines."
- ✗ **Chantal:** "I want to design circuits for the next Kenyan-made smartphone."

- (a) **Identify** the branch of Physics each learner is interested in: (3 marks)

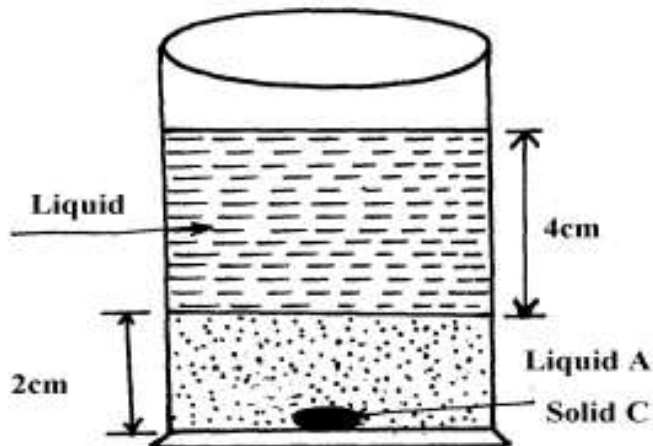
- i. Abdi: _____.

- ii. Bakari: _____.
- iii. Chantal: _____.

(b) **Outline** TWO importance of Physics in the field of Medicine. (2 marks)

- i. _____
- ii. _____

2. Two immiscible liquids are poured in a container to the levels shown in the diagram below.

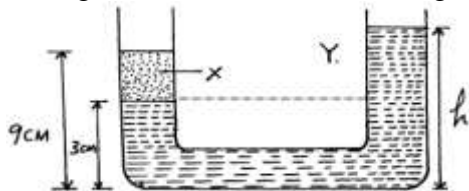


If the densities of the liquids A and B are 1g/cm^3 and 0.8g/cm^3 respectively, find the pressure acting upon solid C at the bottom of the container due to the liquids

(b) **Name** the two factors that affect pressure at a point in a liquid. (2 marks)

- i. _____
- ii. _____

3. In the diagram below, the U-tube contains two liquids; X and Y which do not mix. If the density of liquid Y is 900Kg m^{-3} and that of X is 1200Kg m^{-3} , calculate the height of liquid Y



4. Grade 10 learners at **Kisumu Boys** are testing a copper wire and a glass rod.

(a) **Identify** the property of the material represented by the curve that snaps suddenly without stretching. (1 mark)

(b) **Define** *Hooke's Law*. (2 marks)

(c) **Distinguish** between *Ductility* and *Malleability*. (2 marks)

5.

a.

i. State coulombs law of electrostatic force

ii. Define capacitance

b. Describe how the type of charge on a charged metal rod can be determined

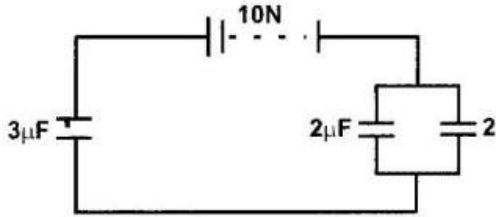
c. The fig. Shows hollow negatively charged sphere with a metal disk attached to an insulator placed inside. State what would happen to the leaf of an uncharged electroscope if the metal disk were brought near the cap of the electroscope. Give a reason for your answer.



d. State two ways of charging the magnitude of the deflection of the leaf of an electroscope.

- i. _____
- ii. _____

e. The fig below shows an arrangement of capacitors connected to a 10V d.c supply.



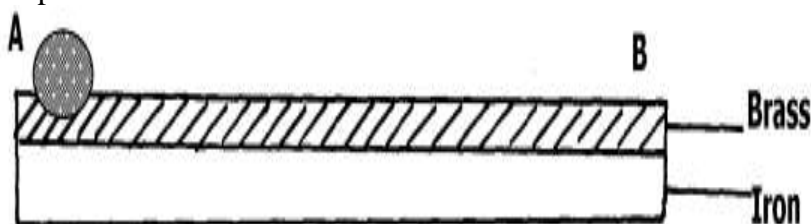
Determine:

i. The charge stored in the 2µF capacitor.

ii. The total capacitance of the arrangement.

iii. **Explain** the process of *Earthing*. (2 marks)

6. The figure below shows a bimetallic strip made of brass and iron. A marble is placed at end A of the bimetallic strip as shown below:-



(a) State and explain what will be observed when the bimetallic strip is strongly cooled

(b) **Identify** which metal expands more between Brass and Iron based on the curve. (1 mark)

(c) **Mention** two applications of bimetallic strips in home appliances. (2 marks)

- i. _____
- ii. _____

(d) **State** the SI unit of Temperature. _____ (1 mark)

(e) **True or False:**

Water contracts when cooled from 4°C to 0°C. [_____] (1 mark)

7. (a) **Identify** the material type (Insulator, Conductor, or Semiconductor) if the forbidden gap is very large. (1 mark)

(b) **Name** the process of adding impurities to an intrinsic semiconductor. (1 mark)

(c) **Distinguish** between an **n-type** and a **p-type** semiconductor. (3 marks)

N-type	p-type

SECTION B: [50 MARKS]

Answer ALL questions in the spaces provided.

8. A bus company in **Eldoret** is designing a new double-decker bus. The engineers must ensure it does not topple on sharp corners.

(a) **Define** *Centre of Gravity (C.O.G)*. (2 marks)

(b) **Explain** why the bus with luggage on the roof is less stable than the empty one. (3 marks)

- i. _____
- ii. _____
- iii. _____

(c) **State** the two conditions for a body to be in static equilibrium. (4 marks)

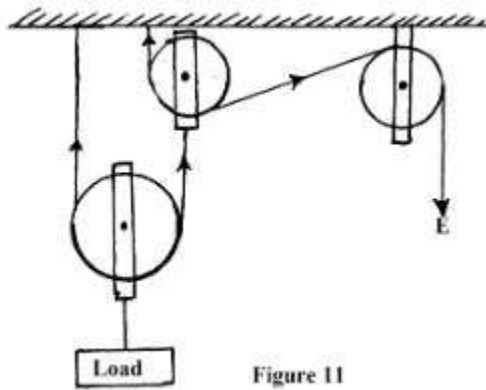
- i. _____
- ii. _____

(d) A uniform meter rule is pivoted at the 50cm mark. A 2N weight is placed at the 10cm mark. **Calculate** where a 5N weight should be placed to balance the rule. (3 marks)

9. Construction workers in **Kilifi** are using a pulley system to lift bags of cement to the third floor.

a. Define the term mechanical advantage of a machine. (1mk)

b The figure shows a pulley system being used to raise a load.



This pulley system has an efficiency of 75%.

i. Determine the velocity ratio of the system. (1mk)

ii. Calculate the mechanical advantage of the pulley system. (2mks)

iii What effort is required to raise a load of 240 kg? (2mks)

iv. Calculate the work done by a person using this machine in raising a load of 120 kg through a vertical distance of 2.5 m (3mks)

c. Give two reasons to explain why the efficiency of a machine cannot be 100%. (2mks)

i. _____

ii. _____

d. **Define** *Efficiency* of a machine. (2 marks)

e. **Explain** why the efficiency of this pulley system can never be 100%. (3 marks)

i. _____

ii. _____

f. A worker lifts a 50kg bag through a height of 10m in 20 seconds. **Calculate:**

i. Work done (2 marks)

ii. Power developed (2 marks)

g. **Name** three other types of simple machines used in construction. (3 marks)

i. _____

ii. _____

iii. _____

10. An ambulance is moving towards a hospital in **Machakos** with its siren on.

(a) **Name** the effect described where the frequency of sound changes due to relative motion. (2 marks)

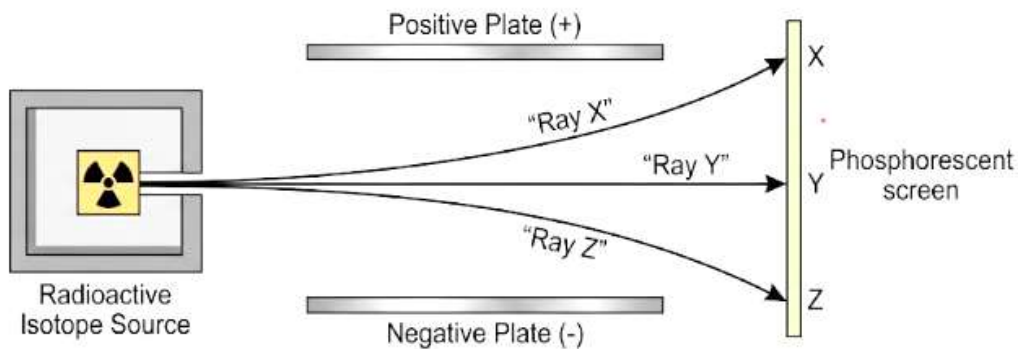
(b) **Describe** how the pitch heard by the observer changes as the ambulance approaches. (3 marks)

(c) **Identify** the wave property shown in the diagram below where waves bend around a corner. (2 marks)

(d) **Distinguish** between *Refraction* and *Reflection* of waves. (5 marks)

Refraction	Reflection

11. Doctors at **Kenyatta National Hospital** use radioactive isotopes for cancer treatment, while environmentalists discuss the **Greenhouse Effect**.



(a) **Identify** the three types of radiations emitted during radioactive decay from the diagram. (3 marks)

Ray X: _____

Ray Y: _____

Ray Z: _____

(b) **State** two safety precautions when handling radioactive materials. (2 marks)

i. _____

ii. _____

(c) **Explain** how the **Greenhouse Effect** leads to **Global Warming**. (4 marks)

i. _____

ii. _____

iii. _____

iv. _____

(d) **Mention** two human activities that contribute to the depletion of the **Ozone Layer**. (2 marks)

i. _____

ii. _____

(e) **Define** *Half-life*. (2 marks)

