

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
HOJAJEMMWA CLUSTER
FORM TWO TERMINAL EXAMINATION
PHYSICS

TIME: 2:30 HRS

MAY, 2025

INSTRUCTIONS

1. This paper consists of sections A, B and C with a total of ten (10) questions
2. Answer all questions in the space provided
3. Write your name at the top of every page
4. Wherever necessary use the following constants Acceleration due to gravity (g) = 10N/Kg
Density of water = 1000kg/m^3 or 1g/cm^3

SECTION A (15 Marks)

1. For each of the items (i)-(x), choose the correct answer among the given alternatives and write the letter in the box provided:
 - i.) Why Physics, Chemistry and Biology are natural science subjects? **A)** They need practical work only **B)** They need observation only **C)** They need practical and theory for learning **D)** They need only theory
 - ii.) Which of the following is a safety precaution in the physics laboratory? **A)** Doing experiment in the laboratory **B)** Do anything in the laboratory **C)** Use equipment with care in the laboratory **D)** Handling of apparatus in the laboratory
 - iii.) Micrometer screw gauge measures the length in cm to an accuracy of **A)** Two decimal places **B)** One decimal place **C)** Three decimal places **D)** Four decimal places
 - iv.) Liquid A has density of 1.03g/cm^3 and liquid B has density of 0.97g/cm^3 . A hydrometer sinks **A)** More in B than A **B)** More in A than in B **C)** Equally in both liquids **D)** None of the above
 - v.) When a plastic pen is rubbed against dry hair, the pen attracts small pieces of paper. This means that; **A)** Hair becomes negatively charged **B)** Hair becomes positively charged **C)** Pen loses electrons **D)** Hair gains electrons
 - vi.) A piece of cork of volume 100cm^3 is floating on the surface of water. If the density of the cork is 0.25 g/cm^3 , what volume of the cork is immersed in the water? **A)** 100cm^3 **B)** 0.25cm^3 **C)** 100.25cm^3 **D)** 25cm^3
 - vii.) Diarra throws a ball upward; the energy changes are **A)** K.E Changes to G.P.E **B)** G.P.E Changes to K.E **C)** K.E Changes to Mechanical energy **D)** Mechanical energy to K.E

viii). In home theatre system several speakers are connected in a specific way to produce a balanced surrounding sound. This configuration is an example of which resistors connection? **A)** Series connection **B)** Alternating connection **C)** Parallel connection **D)** Isolate connection

ix). What is the SI-Unit of the Capacitance? **A)** Coulomb **B)** Ampere **C)** Volts **D)** Farad

x)deals with matter relation to energy

(A) mathematics **(B)** chemistry **(C)** physics **(D)** civics

2. Match the items in list A with the response in list B by writing the letter of the correct response beside the item number in the space provided

LIST A	LIST B
i)Keep magnet away from the source of heat.	A. Magnetic field
ii)The substance which cannot be magnetized or attracted by magnet	B .Magnetic induction
iii)The point in which the magnetic field is zero.	C. Storage of magnet
iv)The region around magnet which can attract magnetic materials.	D. Storage of point charge
v)The arrangement of magnetic dipoles in groups	E. Neutral point
	F. Magnetic domain
	G. Non-magnetic material

SECTION B (70 MARKS)

Answer all questions in this section

3. (a) Use the concept of pressure to explain why buildings are constructed with wide foundations **(3 marks)**

(b) A woman of mass 64kg is standing on sand soil with high heel shoes of area 2cm²

i. Find the pressure exerted by the woman on the ground **(5 marks)**

ii. Why does her heel sink into the ground? **(2 marks)**

4. a). (a) An object is dropped and falls to the ground, is any work done while it is falling? If so what force is experienced? **(3 marks)**

(b) A box contains chalks is having a mass 10kg which is raised to a height of 4m above the ground in 2seconds.

i) What is the energy possessed by the body after raising it. **(03 marks)**

ii) What power developed by the body **(4 marks)**

5 (a) Why is it important to keep the center of gravity of a motor-bus as low as possible? **(02 Marks)**

(b) Your Physics teacher has assigned you to determine the weight of a meter rule using the concept of forces in equilibrium.

i. Name three types of material which should be used in the task given **(03 Marks)**

ii. With an aid of a diagram, explain how you determine the weight of a meter rule **(05 Marks)**

6 (a) Form two students was performing an experiment about current electricity and use the following apparatus, two resistors of resistances 15Ω and 5Ω are connected in parallel across a supply of $37.5V$.

(i) Draw the complete circuit in this connection **(2mark)**

(ii) Determine the effective resistance in the circuit **(3mark)**

(iii) The total current in resistor **(3mark)**

(b) By using two advantages talk to an electrical engineer who visited to your school on why Most of domestic electric equipment such as bulb are preferred to be connected in parallel**(2mark)**

7. a) i) Asha was travelling with her mother and suddenly asked her mother that why Travelling bags have wheels? Help her mother to give the answer. **(2mark)**

ii) Again, the next question to her mother was why efficiency of a machine is always less than 100%? Also help mother to answer those questions**(2mark)**.

b) A machine with a velocity ratio of 6 required 800J of work to raise a load of 600N through a distance of 1m vertically. Find the efficiency and M.A**(6mark)**

8 a) Light is a form of energy. State any four characteristics of it which can be distinguished from other form of energy. **(04 Marks)**

b) Transmission of light depends on different types of materials. By using knowledge of physics explain three different category of material which contribute to transmission of light. **(06 Marks)**

9.a) State Archimedes principle. **(02 Marks)**

b) In an experiment to determine the Relative density of a liquid, a solid Q weighed as follows

Weight in air (W_0) = 8.6N

Weight in water (W_1) = 6.0N

Weight in liquid (W_2) = 5.4N

Calculate the density of a liquid and use it to determine Relative density of a liquid. **(08 Marks)**

SECTION C (15 Marks)

Answer question ten (10)

10 (a) Though we always try to avoid accidents in science laboratory, sometimes they do occur. When an accident occurs, we have a duty of taking immediate actions to assist the victims. Why **(5 reasons)**

(b) The group of form two students conduct an experiment to test presence of charge of a body in physics laboratory. Use your knowledge of physics to:

(i) Identify the name of device that form two students can use for their experiment. **(2mark)**

(ii) Draw a well labelled diagram of the device you identified above. **(5mark)**

(iii) Analyses the applications of the devices named in 10 (i) above. (give two points) **(3mark)**