

THE PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
LINDI REGION



FORM TWO REGIONAL MOCK EXAMINATIONS – 2022

PHYSICS

Time: 2:30 Hours

Year: 2022

Instructions

- This paper consists of section A, B and C with a total of eleven (11) questions.
- Answer all questions in sections A and B and two (2) questions from section C.
- Non – programmable calculator may be used.
- Where necessary the following constants may be used:
 - Acceleration due to gravity, $g = 10\text{m/s}^2$
 - Density of water = 1000kg/m^3

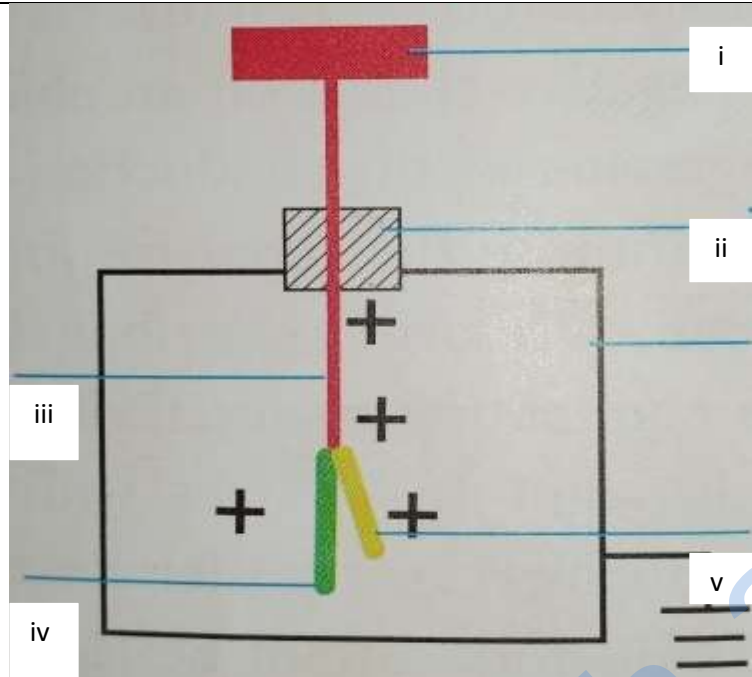
SECTION A (30 Marks)

Answer **all** questions in this section.

1. For each of the items (i) – (ii), choose the correct answer from among the given alternatives and write its letter beside the item number in the answer booklet provided. (10 marks)
 - i. Which pair of instruments is used for measuring lengths?
 - A. A ruler and a measuring cylinder
 - B. A micrometer screw gauge and a beam balance
 - C..A vernier caliper and a micrometer screw gauge
 - C. A pipette and a vernier caliper
 - D. A beam balance and a spring balance
 - ii. What are the two factors that determine Buoyancy?
 - A. Volume of fluid displaced and mass of the object
 - B. Weight and mass of the object
 - C.. Density of the fluid and weight of the object
 - D. Volume of the fluid displaced and density of the fluid
 - E. Mass of the object and density of the object
 - iii. Which physical phenomenon is observed when a tea bag is dipped into a cup of hot water?
 - A. Steaming
 - B. Diffusion
 - C. Osmosis
 - D. Evaporation
 - E. Boiling
 - iv. In a light experiment, the results showed that less light was transmitted and the image was distorted. Which type of material was used?
 - A. A translucent material
 - B. An opaque material
 - C. A luminous material
 - D.. A transparent material
 - E. A non – luminous material
 - v. The presence of positive and negative charges in a body can be detected by using:
 - A. Voltmeter
 - B. electroscope
 - C. hydrometer
 - D. compass
 - vi. A body which gains excess electrons becomes
 - A. Negatively charged
 - B. Positively charged
 - C. Electrified
 - D. Both A and B are correct

- vii. The flow of electrons in a materials is called:
A. Charging B. Potential difference C. Electric current D. Resistivity
- viii. When a dynamo of bicycle is rotated by a wheel, there is a transformation of energy from:
A. Electrical energy to mechanical energy B. Mechanical energy to heat energy
C.. Electrical energy to heat energy
D.. Mechanical energy to electrical energy to light energy
- ix. A soft iron hollow cylinder can be used to concentrate magnetic lines of force on its body, leaving the hollow part free of magnetic influence. This phenomenon is called _____.
A. Neutral point B. Magnetic shielding C. Magnetic reduction D. Magnetization
- x. Which of the following unit could be used for kinetic energy?
A. Kg B. N C. Js D. NM
- xi. In a solid state the force of attraction between molecules is greater because particles are:
A. Closely packed together B. Somehow apart
C.. Not closely packed together D. Moved so randomly
- xii. A vernier caliper is used to measure:
A. Distance of a car B. Diameter of a wire C. Mass of a car D. Length of a table
- xiii. A force which prevents a body to slide is called:
A. Stretching force B. Restoring force C. Frictional force D. Compressional force
- xiv. The ability of a body to float in a fluid is known as:
A. The law of upthrust B. The law of Archimedes
C.. The law of floatation D. Floating
- xv. A set of techniques used by scientists to investigate a problem refers to:
A. Data interpretation B. Scientific method
C.. Performing an experiment D. Data presentation
- xvi. The SI unit for charge is _____.
A. Farads B. Coulombs C. Volts D. Joules
- xvii. For each of the following pairs of materials being rubbed together identify the one that would become positively charged.
A. Glass and silk B. Ebonite and far C. Fur and amber D. Plastic and cotton cloth
- xviii. Material that do not allow electric charge to flow through them are called _____.
A. Resistors B. Semi – conductors C. Insulators D. Accumulators
- xix. Which is not form of energy?
A. Heat A. Light C. Weight D. Sound
- xx. $p \propto \frac{1}{A}$. This means that:
A. On decreasing area, pressure decreases B. On decreasing pressure, volume increases
C.. On increasing area, pressure decreases D. On changing area, nothing happens

2. Match the items in List A of Gold leaf electroscope with responses in List B by writing the letter of the corresponding response beside the item number.

List A	List B
	A. Brass plate B. Brass rod C. Insulator D. Brass cap E. Earthed F. Gold leaf

SECTION B (50 marks)

Answer all question

3. Complete each of the following statements by writing the correct answer in the space provided
- Measurement has two parts, which is number part and _____ part.
 - Weight has the same SI unit as _____
 - _____ is the materials that allow light to pass through them.
 - _____ is the sound produced by lightning.
 - _____ is always connected parallel to electrical device.
4. a). Mention four differences between Mass and Weight.
b). State three conditions for a body to float.
c). Explain why coin sinks in water while a ship made of steel float.
5. A body weighs 8N when immersed in oil. Also weighs 6N when immersed in water. If its real weight is 12N, find:
- Upthrust in (i) Oil (ii) Water
 - Relative density of oil
 - Density of oil.
6. Define the following terms
- Define the following terms
 - Matter
 - Elasticity
 - Surface tension
 - Adhesive force
 - Explain why hot soup is tastier than cold soup?
 - State Hooke's law

- 7.
- Why is it easier to cut a bar of soap using a thin piece of wire than a thick one?
 - State four applications of atmospheric pressure.
 - Calculate the pressure at the bottom of a tank of water 15m deep due to the water above it.
- 8.
- Which kind of energy is stored in objects like springs as a result of reversible deformation?
 - Why there is no work done on the books when carried horizontally?
 - Mr. Ramadhan has a mass of 50 kg walks up a flight of 15 steps. If each step is 30 cm high. Calculate the work done by him.

SECTION C (20 marks)

Answer all questions

- 9.
- Define static electricity.
 - Explain why petrol road tankers usually have a length of metal chain hanging down touching the ground.
 - Find total Capacitance for the following:



10. Two resistors of 4 ohm and 6 ohm are connected in parallel to a battery of e.m.f 48V and have negligible internal resistance.
- Draw the circuit diagram including the battery, ammeter, switch and the two resistors.
 - Calculate the current through each resistor.
 - Calculate the value of ammeter reading.