PRESIDENT'S OFFICE

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

MULEBA DISTRICT COUNCIL

FORM ONE JOINT TERMINAL EXAMINATION

031 **PHYSICS**

TIME: 2: 30 HRS **YEAR: MAY 2024**

INSTRUCTIONS

1. 1.this paper consists of section **A, B** and **C** with a total of **ten(10)** questions
2. Answer **ALL** questions in the space provided
3. All writings must be in blue or black ink except drawings which must be in pencil
4. Communication devices and any unauthorized materials are not allowed in the assessment room

   Where necessary the following constants may be used
   1. Acceleration due to gravity, g =10m/s^2
   2. π =3.14
   3. Density of water = 1000kg/m^3 or 1g/cm^3

SECTION A (15 Marks)

Answer all questions ion this section

1. For each of the items (i)-(x), choose the correct answer from the given alternatives and write its letter in the box provided
   i) What is the usefulness of laboratory rules when carrying out experiments in the physics laboratory?
      A. Making students enjoy science
      B. Helping students conduct experiment freely
      C. Ensuring safety in the laboratory
      D. Enhancing communication with other technicians

   ii) Which of the following is a set of effects of forces exerted when you are riding a bicycle?
      A. Compressional, viscosity and stretching
      B. Torsional, attraction and couple
      C. Frictional, couple and pulling
      D. Attraction, friction and restoring

iii) A hydrometer is an instrument for measuring the density or relative density of a liquid. What are you supposed to do in order to increase its density?

A. Increasing the size of the large bulb
B. Making the stem narrower
C. Reducing the lead shots in the weighed bulb
D. Increasing the length of the stem

iv) Which of the following best describes why the knowledge of physics is necessary to understand all other sciences

A. Physics explains how energy passes from one object to another
B. Physics explains how gravity works
C. Physics explains the motion of the objects that can be seen with the naked eye
D. Physics explains the fundamental aspects of the universe

v) To measure the length using a meter rule, wrong position of the eye leads to

A. parallax error B. eye error
C. zero error D. meter error

vi) What is the force acting on a book that is dropping in to the floor

A. Gravity only
B. Gravity and air resistance
C. Air resistance
D. Friction only

vii) The sea water is denser than fresh water due to;

A. Mixing of sand C. Mixing salts
B. Stagnation D. Evaporation

viii) The following are basic fundamental quantities

A. Mass, length, luminous intensity
B. Mass, time , electric current
C. Mass, length , time
D. Mass, length, electric current

ix) A block with length 3cm, width 4cm and height 10cm is made from wood. The actual volume of the block is

A. $240cm^3$ C. $120cm^3$
B. 2400ml D. $120m^3$

x) Instrument used for measuring the density the density or relative density of a liquid is known as

A. Spherometer
B. Mercury meter
C. Buoyancy meter
D. Hydrometer

2. Match the uses of instruments in LIST A with a correct name of the instrument in LIST B by writing a letter of the correct response below the item number in the table provided

LIST A	LIST B
i. An instrument used to measure density of the liquid	A. Density bottle
ii. An instrument used to determine the volume of irregular substance	B. Hydrometer
iii. An instrument used to transfer specific volume of liquid from one container to another	C. Eureka can
iv. An instrument used to determine the volume of displaced water	D. Pipette
v. An instrument used to determine the density of insoluble granules	E. Measuring cylinder
	F. Burette
	G. Test tube

Answer

LIST A	i.	ii.	iii.	iv.	v.
LIST B					

SECTION B (70 Marks)

Answer all questions in this section

3. (a) Briefly explain three applications of physics in your daily life

i) _____

ii) _____

iii) _____

(b)'Physics is a fun subject', what does the statement mean?_____

_____

4. (a) Why is it necessary to wear gloves when giving first aid to a bleeding person?_

_____

(a) i) What is a scientific method?_____

_____

ii) Use a diagram to name all the steps involved in a scientific investigation

5. (a) Explain how each of the following quantities differs from each other

(i) Mass and weight_____

_____

(ii) Density and relative density_____

_____

(b) A piece of brass metal of volume 5.2cm3 has a mass of 40.6g. Calculate the relative density of brass.

6. (a) Briefly explain four effects as a result of unbalanced forces on an object

i) _____

ii) _____

iii) _____

iv) _____

(b)(i) What does it mean by the term force_____

_____

(ii) An object weighs 200N on the earth. What would be its mass on the moon?

7. (a) State the following principles as applied in physics

(i) Archimede's principle_____

_____

_____

(ii) Law of floatation_____

_____

(b) Calculate the resulting buoyant force, if an aluminum ball of radius 8cm is immersed in water. Assume density of water is 1000kg/m3 and acceleration due to gravity is 10N/kg.

8. (a) With the aid of diagrams, describe the steps involved when using an overflow can to measure the volume of an irregular object.

(b) Briefly explain four reasons which leads to errors during measurements in physics laboratory.

9. (a) With vivid examples distinguish fundamental physical quantities from derived physical quantities

(b) When a screw gauge with a least count of 0.01mm is used to measure the diameter of a rod, the reading on the sleeve is found to be 1.8cm and the reading on the thimble is found to be 38 divisions. What is the correct diameter of the rod, if the zero error for the gauge is -0.003cm?

SECTION C (15Marks)

Answer question ten (10)

10. (a) Draw the following apparatus and state its uses

(i) Beaker (ii) thermometer (iii) micrometer screw gauge (iv) spring balance

(b) (i) what are warning signs

(ii) With the aid of diagrams state what do the following warning signs mean

i) Toxic ii) health hazard iii) flammable