Student's Assessment Number.....................................

PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT
UBUNGO MUNICIPAL COUNCIL
FORM TWO MOCK EXAMINATION
031   **PHYSICS**

<u>**Time: 02:30 Hours**</u>   **Friday, 4th June, 2021 a.m**

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. Section A carries thirty (30) marks, section B carries fifty (50) marks and section C carries twenty (20) marks.

4. All answers must be in **blue** or **black** ink except diagram which must be in pencil.

5. Cellular phones, calculators and any unauthorized materials are **not** allowed in the assessment room.

6. Write your **Assessment Number** at the top right corner of every page.

7. Where necessary the following constants may be used:
   i. Acceleration due to gravity, $(g) = 10 \, m/s^2 \;\; or \; 10 \, N/kg$
   ii. Density of water $= 1000 \, kg/m^3$

FOR ASSESSOR'S USE ONLY		
QUESTION NUMBER	**SCORE**	**ASSESSOR'S INITIALS**
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
TOTAL		
CHECKER'S INITIALS		

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SECTION A (30 Marks)

Answer **all** questions in this section.

1. Choose the most correct answer for items (i-xx), and write its letter in the box provided.

   i. When matter is explained and relating it to energy, then we say, we are explaining
      A. Force   C. Physics
      B. Power   D. Energy

   ii. Laboratory rules are useful in
      A. Making students enjoy science subject
      B. Making students conduct experiments freely
      C. Ensuring safety while in the laboratory
      D. Ensuring good communication with other students and the teachers.

   iii. The term buoyant mean
      A. Float   C. Flying
      B. Push   D. Sink

   iv. A person standing in a bus which starts to move foward suddenly tends to fall backwards.
       This tendency obeys:
      A. Newton's first law of motion
      B. Newton's second law of motion
      C. Newton's third law of motion
      D. The principle of moments

   v. A mass of 1kg has a weight of 10N, when this mass is taken to the moon, the change will be observed in:
      A. Mass   C. Volume
      B. Density   D. Weight

   vi. A density bottle is an instrument in laboratory specifically for measuring
      A. Relative density of liquids
      B. Density of liquids
      C. Humidity
      D. Rigidity

   vii. Wrong position of an observer result to
      A. Instrumental error in measurements
      B. Paralax error in measurements
      C. Zero error in measures
      D. Technical error in measurements

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viii. The meniscus of mercury curves downwards in the barometer tube, because
   A. Adhesive force between molecules of mercury are greater than cohesive.
   B. Cohesive force between mercury molecules is greater than adhesive between mercury and glass.
   C. Mercury has larger atoms
   D. Glass has larger atoms compared to that of Mercury.

ix. Which of the following has the highest density?
   A. Liquid   C. Solid
   B. Gas   D. Plasma

x. Manometer is used for measuring
   A. Temperature   C. Gas pressure
   B. Wind speed   D. Density of liquid

xi. A lever which has its effort between the load and fulcrum is said to be
   A. Second class lever   C. First class lever
   B. Third class lever   D. Fourth class lever

xii. Materials which allow only a small portion of light to pass through are called
   A. Opaque   C. Transluent
   B. Penumbra   D. Transparent

xiii. Strong and permanent magnets are made up of:
   A. Aluminium and nickel   C. Iron and magnesium
   B. Cobalt and nickel   D. Nickel and silver

xiv. A p.d of 12V is applied across a resistor of resistance 24Ω, the amount of current flowing in a circuit is
   A. 0.5A   C. 0.25A
   B. 2A   D. 24A

xv. The point at which all weight of a body acts is called
   A. Gravitational force   C. Centre of gravity
   B. Upthrust   D. Centre of mass

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xvi.   Used to produce large number of positve charges
A. Electroscope   C. Electrophorus
B. Telescope   D. Magnet

xvii.   The speed of $72 \, km/hr$ is equivalent to
A. $120m/s$ C. $20 \, m/s$
B. $1200 \, m/s$ D. $200m/s$

xviii.   A pump raise 100kg of water steadily through a height of 30m in 10 seconds, what is the power developed by the pump?
A. 300 J/S   C. 3000 W
B. 1000 W   D. 1200 W

xix.   Apparent loss in weight is known as
A. Upthrust   C. Pressure
B. Apparent weight   D. Weight

xx.   The M.A and V.R of simple machine are equal when:
A. Machine is imperfect   C. Machine is perfect
B. Machine is running   D. Machine is working

2. Match each item in **LIST A** with a correct response in **LIST B** by writing a letter of a correct response below the corresponding item number in the table provided:

LIST A	LIST B
i. The force which one object is attracted to another ii. The resistance of a third from being poured out iii. The force transmitted through a string, cable, rope or wire iv. The force which applied to an object results in a decreases of its volume v. The resistance force that an object encounters when resting or moving over another object	A. Compressional force B. Friction C. Tension D. Air resistance E. Normal force F. Attractive force G. Viscosity

Answers:

LIST A	i	ii	iii	iv	v
LIST B					

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3. Complete each of the following statements by writing the correct answer in the space provided.
    i.   In the velocity-time graph, the slope represent.............................
    ii.   .... refers how fast the work is done
    iii. The degree of hotness or coldness of a body is its.............................
    iv.   ....is the rise or fall of liquid level in a narrow tube.
    v.   A collection of parallel rays of light is known as...............................

SECTION B (50 Marks)

Answer **all** questions in this section.

4. (a) A boy of 1.5m tall lift a box 12kg on his head. What work has he done against gravity?

    ....
    ....
    ....

    (b) Why pushing a wall the whole day gives no work done?

    ....
    ....
    ....

    (c) The energy possessed by a bob of mass 0.2kg is 24J. What is the height of the bob above the ground?

    ....
    ....
    ....

5. (a) What is a neutral point?

    ....
    ....

    (b) State the baic law of magnetism

    ....
    ....
    ....

(c) Given the figure below:
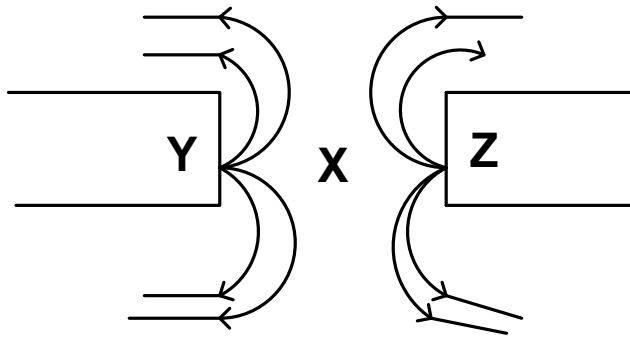
Name:
  i. X ....
  ii. Y ....
  iii. Z ....

6. (a) State Archimedes' Principle

....
....
....

(b) A body weighs 12N when on air and 10N when completely immersed in water. Calculate
  i. Upthrust

....
....
....

  ii. Relative density of the body

....
....
....
.

(c) Explain why does hydrometer have wide bulb and narrow stem

....
....
....

7. (a) State two conditions for a body to be in equilibrium.
  i. ....
  ii. ....

(b) Distinguish between centre of mass and centre of gravity.

....
....
....

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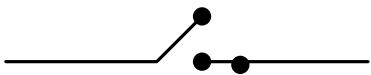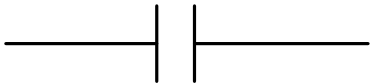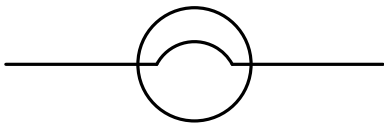
(c) A uniform metre ruler AB is balanced horizontally on a knife edge placed 5cm from B with a mass of 72g at B. Find the mass of the ruler.

....

....

....

8. (a) Name the following electrical symbols

	Symbol	Name
(i)		
(ii)		
(iii)		
(iv)		
(v)		

(b)(i) State Ohm's law.

....

....

....

(ii) Mention three (3) factors that affect the resistance of the wire.

....

....

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SECTION C (20 Marks)
Answer **all** questions in this section.

9. (a) Why students like a thick stick compared to a thin stick when punished?

....

....

....

(b) Pressure in liquids on two things, which are:

i. ....

ii. ....

(c) The doctor apply a force of 2N when injecting medicine to the patient, if the cross section area of the needle is $0.000001 m^2$, what will be the pressure experienced by the patient?

....

....

....

10. (a) State three factors that determine the capacitance of a capacitor

i. ....

ii. ....

iii. ....

(b) List down three types of capacitor.

i. ....

ii. ....

iii. ....

(c) Three capacitors of capacitance $2\mu F$, $4\mu F$ and $6\mu F$ are connected in the circuit. Calculate the total capacitance when capacitors are connected in

i. Series

....

....

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ii. Parallel

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