*Candidate's Assessment Number:* ……

# PRESIDENT'S OFFICE

# REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

# KIBAHA TOWN COUNCIL

# PRE-MOCK FORM TWO EXAMINATION – 2023

# PHYSICS

**Code: 031**

**DAY: FRIDAY, Morning**
**DATE: 24/03/2023**

**Time: 2:30 Hours**

PRE-MOCK 2023

## Instructions

1. This paper consists of section A,B and C with a total of ten (10) questions
2. Answer ALL questions
3. Section A and C carries fifteen (15) marks each and B carries seventy (70) marks
4. All answers must be in the spaces provided
5. All writing must be in black or blur ink excepts drawing which must be in pencil
6. Write your examination number at the top of right drawing which must be in pencil
7. Write your examination number at the top of right Conner of your paper
8. Write necessary the following constant may be used gravity g= 10m/s$^2$

| FOR EXAMINER'S USE ONLY | | |
|---|---|---|
| **QUESTION NUMBER** | **SCORE** | **EXAMINER'S INTIAL** |
| **1** | | |
| **2** | | |
| **3** | | |
| **4** | | |
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| **7** | | |
| **8** | | |
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| **10** | | |
| **TOTAL** | | |

## SECTION A (15 MARKS)
## Answer ALL questions

1. For each of the items (i)-(x) , choose the most correct answer from the given alternatives and write its letter in the box provided

i) When a large body of experimental evidence supports or does not support a hypothesis, what may the hypothesis eventually be considered?
   A. Observation
   B. Analysis
   C. Law
   D. Conclusion

ii) Which of the following instrument is most suitable for measuring the internal diameter of 100ml beaker?
   A. Meter rule
   B. Vernier caliper
   C. Measuring tape
   D. Micrometer screw gauge

iii) The formation of image on plane mirror is due to
   A. Diffusion of light
   B. Refraction of light
   C. Reflection of light
   D. Diffraction of light

iv) If an object has a mass of 240g on the earth, how much mass will it weigh on the moon?
   A. 2400N
   B. 40g
   C. 24N
   D. 240g

v) Which one of the following items shows the correct comparison of the average kinetic energy of the particles in solid , liquid and gas for a given substance
   A. Solid > liquid > gas
   B. Solid < liquid < gas
   C. Solid = liquid= gas
   D. Solid = liquid > gas

vi) Why are magnets often fitted to the doors of refrigerators and some of cupboards?
   A. To keep away heat
   B. To keep the inside environment warm
   C. To keep the door tightly closed
   D. To keep iron away

vii) Which of the following is a clear difference between moment of force and work done?
   A. Moment is product of force and distance while work done is the product of force and displacement
   B. Moment is the product of force and displace
   C. Moment of force is the product of force and perpendicular distance while work done is the product of force and distance in the direction of applied force
   D. Moment of force is the product of force and distance in the direction of applied force while work done is the product of force and perpendicular distance.

viii) Which of the following is the readings of the micrometer screw gauge drawn below
   A. 7.78 mm
   B. 5. 28mm
   C. 5.48mm
   D. 7.28mm

ix) Three capacitor 10Mf, 20Mf and 30MF are arranged in series. What single capacitor can replace them
   A. 60 MF
   B. 4.54 MF
   C. 5.45MF
   D. 6.25MF

x) Which of the following aquarium condition apply to walking
   A. Unstable equilibrium
   B. Stable equilibrium

C. Neutral equilibrium
D. Both stable and unstable equilibrium

2. Match each of the descriptions of the terms used in Archimedes principle in list A with the corresponding concept used in Archimedes principle in list B by writing a letter of the correct response below the item in the table provided

| LIST A | LIST B |
|---|---|
| i) The ability of an object to float on fluid suspended on it<br>ii) Weight of liquid displaced<br>iii) Weight of object in air<br>iv) Weight of object in fluid<br>v) Tendency of an object to go to the lower level of the fluid | A. Sinking<br>B. Up thrust<br>C. Floating<br>D. Real weight<br>E. Buoyance<br>F. Apparent weight<br>G. Apparent light<br>H. Relative density |

| i | ii | iii | iv | v |
|---|---|---|---|---|
| | | | | |

**SECTION ''B"**

**Answer ALL questions**

3. (a) Recommend why a bus with seated passengers and luggage in the compartments is more stable than one with standing passengers and loaded at the top?

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(b) A uniform meter rule is freely pivoted at the 35cm mark and it balances horizontally when a body of mass 75g is hung from the 10cm mark.

i) Clear draw a diagram of the arrangement

ii) Calculate the mass of the meter rule

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4. (a) Differentiate between mass from weight

| **MASS** | **WEIGHT** |
|---|---|
| i) | |
| ii) | |
| iii) | |
| iv) | |
| v) | |

(b) An irregular solid x has a mass of 50g. When it is totally immersed in the water of volume 60cm$^3$ the final water volume is 70cm3, calculate the density of the irregular solid x

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5. (a) Briefly explain why the sky is blue on clear sunny day when viewed from the earth but is dark when viewed from the moon

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(b) Two plane mirrors inclined at an angle of $60^0$. If an object is placed in the mid of the mirrors how many images of the object will be formed.

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6. (a) By using a bar magnets create a neutral point

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(b) Briefly explain four (4) ways in which magnets are used in daily life.

i) ……
ii) ……
iii) ……
iv) ……

7. (a) What happens when force and displacement are in opposite direction?

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(b) A man whose mass is 80kg walks up a flight of 25 steps each 20cm high in 10 seconds, find the power developed by the man in kilowatts

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8. (a) Petrol is flammable substance and fire caused by it can be extinguished by class B extinguisher which have dry power or carbon dioxide. Briefly explain why petrol road tankers usually have a length of metal chain hanging down touching the ground.

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(b) A physics teacher use a gold leaf electrons cope to test the presence and type of charge present on the substance. Draw a well labeled diagram of a gold - leaf electroscope

9. (a) John has inflated balloons. He tries to hit them with a hammer but they didn't but when he hit them a sharp pin they all bust. Briefly explain why hitting an inflated balloon with a hammer will not cause it to burst but sticking it with a pin will?

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(b) A TPA engineer want to raise a car weigh 5000N through a height of 0.3m using a hydraulic press. If the pistons area are $0.02m^2$ and $0.1m^2$ respectively.

i) How much force must be applied to the smaller piston?

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ii) How far must the smaller piston pushed down to raise the car.

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## SECTION ''C" (15 MARKS)

### Answers question ten (10)

10. Suppose you are sked by your physics teacher to prepare electrical components and instruments for experiment to determine the relationship between voltage and current.

(a) Give six electrical components and their symbols that can be used in this experiment

| Component | Symbol |
|---|---|
| i) | i) |
| ii) | ii) |

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|---|---|
| iii) | iii) |
| iv) | iv) |
| v) | v) |
| vi) | vi) |

(b) Draw a simple electric circuit which will be suitable for that experiment

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(c) From the simple electrical circuit in 10(b), how will you connect the electrical devices used for measuring the current and the potential difference?

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