

**THE PRESIDENT'S OFFICE  
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT  
JOIN THE REVOLUTION PROGRAM  
FORM TWO MONTHLY TEST  
PHYSICS**

**TIME 2:30 HRS**

**February 2024**

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**INSTRUCTIONS**

1. This paper consist of section A, B and C with total often (10) questions
2. Answer all questions
3. Section A carries 15 marks, section B 70 marks and section C caries 15 marks
4. Where necessary the following constants may be used
  - Acceleration due to gravity,  $g = 10 \frac{N}{Kg}$
  - Density of water  $= \frac{1g}{cm^3} \text{ or } \frac{1000kg}{m^3}$
  - Pie,  $\pi = 3.14$

### SECTION A (15 Marks)

Answer **All** questions in this section

1. . For each of the items (i) – (ii), choose the correct answer among the given alternatives and write its letter

i. Each scientific instrument is limited in accuracy. What is the shortest length that can be accurately recorded or measured by a meter rule?

- (a) 0.01mm                      (b) 0.1mm  
(c) 0.1cm                      (d) 0.01m                      (e) 0.1m

ii. A body weights 10N in air and 8N when completely immersed in water. Neglecting upthrust in air its weights in liquid of density  $1.5\text{g/cm}^3$  will be

- (a) 3N                      (b) 18N  
(c) 10N                      (d) 2N                      (e) 7N

iii. Mercury forms spherical drops when split on a wooden bench because

- (a) Its velocity is very high                      (b) It has high relative density  
(c) It has high cohesive force                      (d) It has low surface tension  
(e) It is subjected to high atmospheric pressure

iv. A mass presses more weight on earth at

- (a) Seating position                      (b) Standing position  
(c) Lying position                      (d) Jumping position  
(e) Running position

v. When two surfaces are coated with lubricant then they

- (a) Stick to each other                      (b) Slide upon each other  
(c) Roll upon each other                      (d) Stick upon each other  
(e) Slow down to each other

vi. If earth loses its gravity, then for a body to balance

- (a) Both mass and weight becomes zero  
(b) Neither mass nor weight becomes zero  
(c) Mass becomes zero but not the weight  
(d) Weight becomes zero but not the mass  
(e) Only mass becomes zero

vii. Where will it be profitable to buy 1kg of sugar?

- (a) At pole                      (b) At equator  
(c) At  $45^\circ$  latitude                      (d) At  $45^\circ$  longitude                      (e) At  $40^\circ$  latitude

viii. It is easy to roll a stone up a sloping road than to lift it vertically upward because

- (a) Work done in rolling is more than in lifting  
(b) Work done in lifting the stone is equal to rolling it  
(c) Work done in both is the same but rate of doing work is less in rolling  
(d) Work done in rolling a stone is less than in lifting it  
(e) The power in rolling is equal to lifting

ix. Siphon will fail to work if

- (a) The densities of the liquid in the two vessels are equal  
(b) The level of the liquid in two vessels is at the same height  
(c) Both its limbs are of unequal length

- (d) The temperature of liquid in the two vessels is the same  
 (e) The volume of the liquid in the two vessels is the same

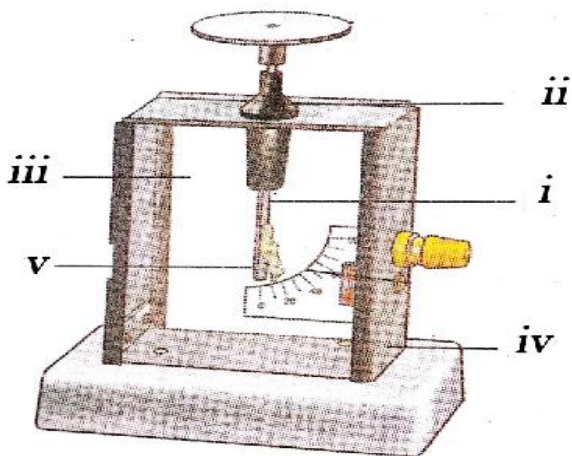
x. It is more difficult to walk on sandy road than on a concrete road because:-

- (a) Sand is soft and concrete is hard  
 (b) The frictional between sand and feet is less than that between concrete and feet  
 (c) The friction between sand and feet is more than that between concrete and feet  
 (d) The sand is grainy but concrete is smooth  
 (e) The sand is soft but concrete is hard

#### ANSWERS

I	II	III	IV	V	VI	VII	VIII	IX	X

2. Match the item in Column A against its corresponding item from column B by writing the correct response in the answer column provided.

COLUMN A	COLUMN B
 <p>The diagram shows a sensitive galvanometer. Label 'i' points to the coil, 'ii' to the magnet assembly, 'iii' to the permanent magnet, 'iv' to the scale, and 'v' to the zero adjustment screw.</p>	<p>A. Glass window          B. Glass plate          C. Brass rod          D. Leaf          E. Insulator          F. Earthed metal case          G. Brass cap          H. Galvanometer</p>

#### ANSWERS

I	II	III	IV	V

#### SECTION B (70)

Answer **All** questions in this section

3 (a) What do you understand about the Greek word "metron"

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(b) Suppose you are in the physics club and you have been appointed to give out the seven steps under taken when measuring length by using Vernier calliper.

- (i) \_\_\_\_\_  
 (ii) \_\_\_\_\_  
 (iii) \_\_\_\_\_  
 (iv) \_\_\_\_\_  
 (v) \_\_\_\_\_  
 (vi) \_\_\_\_\_  
 (vii) \_\_\_\_\_

4. An object is stationary when all forces acting on it are balanced. If a new force is applied to the object the forces become unbalanced. The result of unbalanced forces on object can cause various effects on the object. Those applied forces include

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_
- (iii) \_\_\_\_\_
- (iv) \_\_\_\_\_

(b) Assume a fixed mass rock in figure below moves from the earth to a planet X. If it weights 10,000N on the earth and 300N on planet X. Determine the acceleration due to gravity on planet X.



(c) The force that exerts on an object moving through a fluid depends on

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_
- (iii) \_\_\_\_\_

5. (a) When you are in the laboratory you are given an empty beaker of mass ( $M_0$ ) and known volume ( $V$ ) of the liquid. Explain four (4) steps on how you can find density of the given liquid. If the mass of beaker and liquid is  $M_1$ .

- (i) \_\_\_\_\_
- (ii) \_\_\_\_\_
- (iii) \_\_\_\_\_
- (iv) \_\_\_\_\_

(b) In an experiment to determine the relative density of liquid X Form one physics students obtained the following result after various measurements.

Mass of an empty relative density bottle = 15g

Mass of bottle + liquid X = 35g

Mass of bottle + water = 40g

Volume of bottle =  $25\text{cm}^3$

Calculate

(i) The density of water in  $\text{kg/m}^3$

(ii) The density of liquid X in  $\text{kg/m}^3$

(iii) The relative density of liquid X

(a) A practical hydrometer has three parts which are

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

(b) An ordinary hydrometer of mass 27g floats with 4cm of its stem out of water. The area of cross section of stem is  $0.75\text{cm}^2$ . What is the total volume of the hydrometer?

7(a) why a needle may floats on a clean water but sinks when some detergents are added to the water?

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(b) Briefly explain five applications of electricity in our daily life

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

(iv) \_\_\_\_\_

(v) \_\_\_\_\_

8. The figure below show a man using a catapult to project a stone



(a) Explain the meaning of the energy stored when he pull back on the catapult

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(b) Give the formula of the form of energy transformed when the stone is released

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9 (a) Write down the short summary that can help someone to understand the meaning of the sources of light mentioned below.

(i) Luminescent source \_\_\_\_\_

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(ii) Chemiluminescence source \_\_\_\_\_

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(iii) Bioluminescence source \_\_\_\_\_

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(iv) Fluorescence \_\_\_\_\_

(v) Phosphorescence \_\_\_\_\_

(vi) Incandescent source \_\_\_\_\_

(b) Explain two disadvantages of periscope

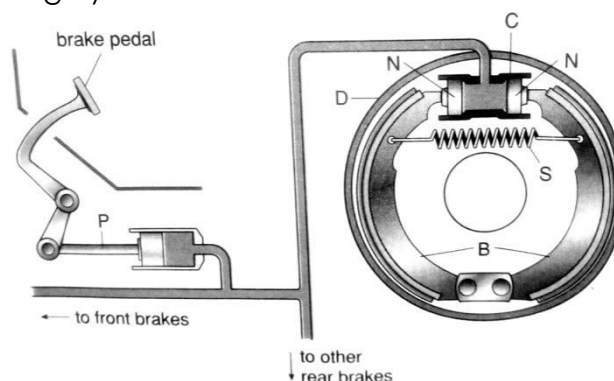
(i) \_\_\_\_\_

(ii) \_\_\_\_\_

### SECTION C(15 Marks)

Answer question **number ten (10)** in this section

10. (a) A modern car uses a braking system that retards each wheel equally to minimize the dangers of skidding or locking the wheel when the brakes are applied. This is best done by using hydraulic brakes as shown below.



From the diagram above labelled the parts shown by letter B, C,D, P and S then explain its mechanism

(b) Mention two (2) experiments to show the existence of the atmospheric pressure. Hence write down a short demonstration to explain one of the two experiments

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SERIES - 02	12 <sup>th</sup> February 2024	03:00 – 6:00 pm
SERIES – 03	19 <sup>th</sup> February 2024	03:00 – 6:00 pm
SERIES – 04	26 <sup>th</sup> February 2024	03:00 – 6:00 pm

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**1. SERIES FORM TWO**

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