INTERSECONDARY SCHOOLS EXAMINATION SERIES
ISESE
FORM TWO OPENING TEST
PHYSICS

TIME 2:30 HRS

INSTRUCTIONS

1. This paper consist of section A, B and C with total of ten (10) questions
2. Answer all questions
3. Section A carries 15 marks, section B 70marks 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 $=\frac{1g}{cm^3} or \ \frac{1000kg}{m^3}$

   Pie, $=\pi 3.14$

QUESTION NUMBER	TICK (√)	SCORE	EXAMINER'S INITIAL
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

SECTION A (15 Marks)
Answer **ALL** questions

1. Write the letter of the most correct answer in the space provided

i)   Physics may be expressed as:

(a) A quantitative science

(b) The most basic of science

(c) An experimental science

(d) All (a), (b) and (c) are true

ii)   An apparatus in physics laboratory is

(a) Set of instruction to carry out experiments

(b) Instruments used in the laboratory for experimentation

(c) Containers used to keep chemicals

(d) A place where physicist used to store their instruments

iii)   The following are the fundamental types of forces, except:

(a) Force of gravity

(b) Electromagnetic force

(c) Strong nuclear force

(d) Pulling or pushing force

iv)   An object floats in water with 20% of its volume above the surface. What is the relative density of the object?

(a) 0.16

(b) 0.2

(c) 0.64

(d) 0.8

v)   The variation of pressure in liquid depends on:

(a) Shape

(b) Mass

(c) Depth

(d) Temperature

vi)   One of these properties of matter is used to remove salts from sea water

(a) Surface tension

(b) Diffusion

(c) Capillarity

(d) Osmosis

vii)   The power required to accelerate a Noah car of mass 3000kg from the rest to speed of 20m/s in 12seconds is:

(a) 50kW

(b) 72Kw

(c) 60Kw

(d) 20Kw

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viii) The property of light which is responsible for formation of shadow is
  (a) It travels in vacuum
  (b) It transfer energy
  (c) It radiates
  (d) It travels in straight line

ix) Which of the following instrument is used for measuring mass
  (a) Spring balance
  (b) Barometer
  (c) Beam balance
  (d) Eureka cane

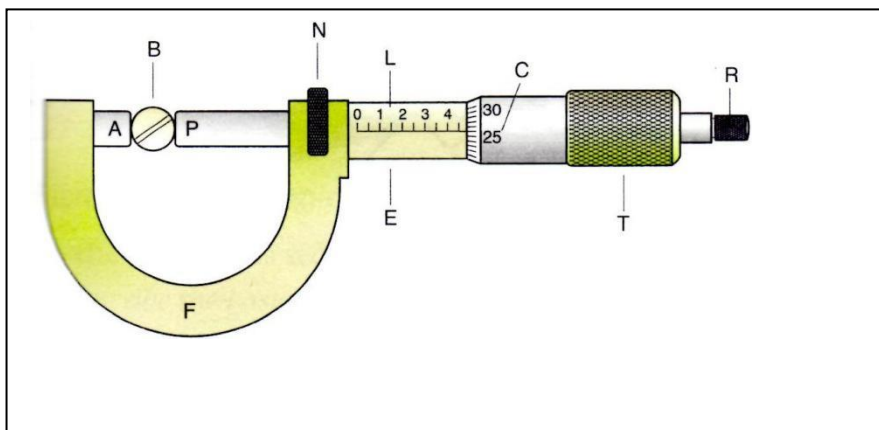2. Match correctly item in **list A** with **list B.**

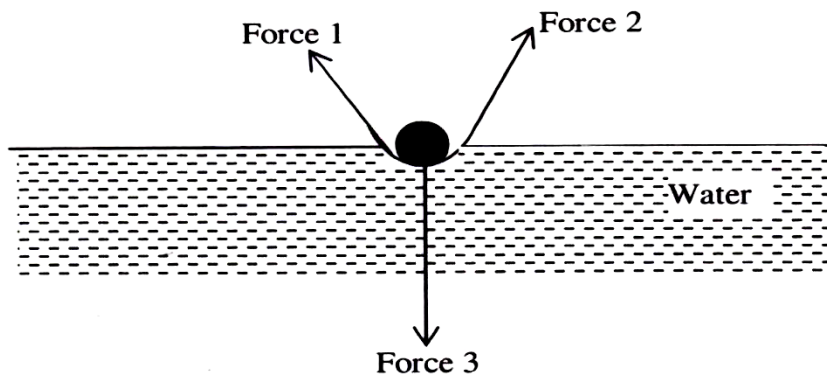| List A	List B
(i) An instrument that measures length, depth internal and external diameter.	A. Measuring cylinder B. Pipette C. Vernier calipers D. Glass tumbler
(ii) An instrument that measures volumes of liquids	E. Spring balance F. Clinical thermometer G. Magdeburg experiment
(iii) An instrument that measures force of pull	
(iv) An instrument that transfers specific amount of liquid from one container to another	
(v) An instrument that measures body temperature.	

SECTION B (70 marks)

Answer **ALL** questions

3. Electricity is the energy that has several uses in our daily life. We use electricity for lighting, heating, cooling, refrigeration and operating electrical and electronic appliances. In physics laboratory, electricity is used to conduct several experiments. Thus, the presence of electricity is an important feature of a physics laboratory. However, when an electric current passes through a human body it cause an electric shock. Write seven (7) guidelines a first aider should follow to help electric shock victim

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4. Robert Msaki is a form one student who abscond physics subject, assuming that is less important to his life. By giving five points (5), convince Robert the importance of attending physics periods.

5. Using examples, explain how the following subjects related to physics
   (a) History
   (b) Geography
   (c) Biology

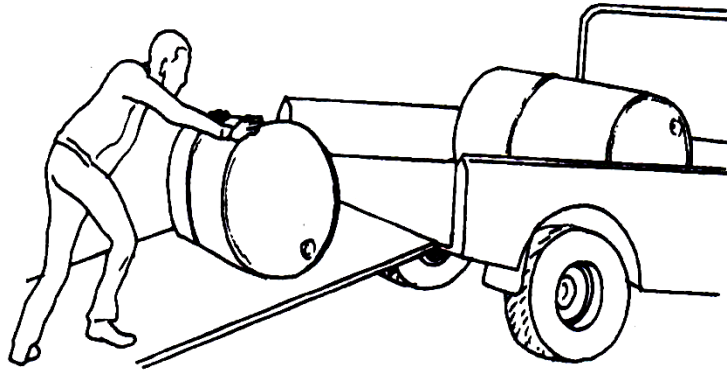6. (a) Label the parts F,B,N,E,L C,T,R,A,P by giving roman number respectively

(b) Make a sketch of a micrometer screw gauge showing a reading of 6.49mm.

7. Study the diagram below then answer the question that follows

(a) Force 1 and 2 are forces due to _____
(b) Force 3 is force due to _____
(c) _____ Force balances the force _____ acting on a needle.

8. (a) The figure below shows a man pushes a barrel, when the barrel move we say he is do a work but when the barrel does not move we say he is not doing a work why?
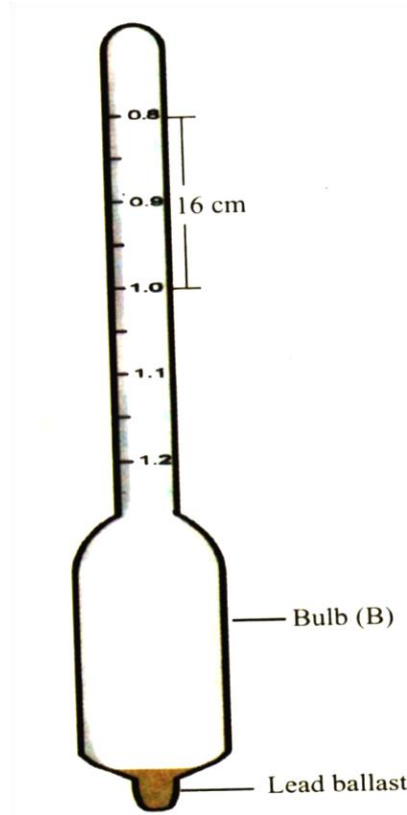

(b) Explain why a rotating wonder wheel becomes hot after a sudden stop.

(c) How much power is required for a car 1000kg in charging speed from 10m/s to 40m/s in 8s?

9. Pilato is a form one student at UBN Secondary School, the physics teacher has instructed him to cut a piece of soap by using two wires varying in thickness. Pilato at first used very thin wire to cut a bar of soap into half. What is the difference when a bar of soap is cut using a thin wire and when a thick wire?

10. The hydrometer shown below is used to measure the densities of liquids between 1g/cm^3 and 0.08g/cm^3. Assume that density of water = 1g/cm^3, the cross-section area of the stem is 0.5cm^2 and the height of the stem above the liquid level is 16cm. Determine the volume of the hydrometer below mark 1.0

U.B.N COOPERATION O-LEVEL EXAMINATION SERIES 2025
TIME TABLE FOR ALL SUBJECTS
FORM TWO AND FORM FOUR
JANUARY SERIES

ALL SUBJECTS	DATE	TIME
SERIES – 01	20th January 2025	03:00 – 6:00 pm
SERIES – 02	27th January 2025	03:00 – 6:00 pm

CONTENTS COVERED
1. SERIES FORM TWO
(ALL TOPICS IN FORM ONE AND ONLY ONE TOPIC IN FORM TWO)
2. FORM FOUR
(ALL TOPICS IN FORM ONE, FORM TWO, FORM THREE AND ONLY ONE TOPIC IN FORM FOUR)

ADA : FORM TWO 15,000 MUHULA MZIMA
     : FORM FOUR 15,000 MUHULA MZIMA
OFA : UKIFANYA MALIPO YA SERIES KABLA YA TAREHE 13 JANUARY
MALIPO NI TSH 10,000 KWA KILA KIDATO
NB : ***MWISHO WA MALIPO NI TAREHE 20/01/2025
*** ADA ZA MALIPO YA MUHULA HUPANDA KILA DEADLINE
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KWA MAWASILIANO TUCHEKI KWENYE NAMBA 0624 254 757 WHATSAPP TU