Student's Full Name: ……

THE CATHOLIC DIOCESE OF SAME
KINDOROKO GIRLS' SECONDARY SCHOOL
FORM ONE SEPTEMBER MID–TERM EXAMINATIONS

031 **PHYSICS**

Time: 2:30 Hours **Year: 2024**

Instructions

1. This paper consists of sections A, B and C with a total of **ten (10)** questions.
2. Answer **all** questions in the spaces provided.
3. Section A and C carry **fifteen (15)** marks each and section B carries **seventy (70)** marks.
4. All writing must be in **blue** or **black** ink.
5. Cellular phones, calculators and any unauthorized materials are **not** allowed in the examination room.
6. Write your **Name in Full** on the top right hand corner of every page.
7. Where necessary the following constants may be used:
   Acceleration due to gravity, g = 9.8m/s^2
   Density of water = 1g/cm^3 or 1000kg/m^3
   1k*g* = 10N

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

SECTION A (15 Marks)

Answer **all** questions in this section

1. For each of the items (i) – (x) choose the correct answer from among the given alternatives and write its letter besides the item number in the answer table provided.

(i) Physics is:

A Quantitative science
B Experimental science
C Most basic science
D Analytical science

(ii) Which of the following best describes a variable?

A A trend that shows an exponential relationship
B Something whose value can change over multiple measurements
C A measure of how much a plot line changes along the y-axis
D Something that remains constant over multiple measurements

(iii) To measure the length using metre rule, wrong position of the eye leads to:

A Parallax error
B Eye error
C Zero error
D Metre error

(iv) The force acting on a stone falling from the roof of a house is an example of:

A Falling force
B Magnetic force
C Force of gravity
D Electrostatic force

(v) Which of the following is not a force at a distance?

A Electrostatic force
B Force of gravity
C Frictional force
D Magnetic force

(vi) Cuboids with length 3cm, width 4cm and height 10cm is made from wood of density 0.5g/cm^3. The mass of the cuboids is?

A 17.5g
B 60g
C 120g
D 240g

(vii) An object of weight 500N is floating in the liquid. The magnitude of buoyant force on it is:

A 500N
B 400N
C 200N
D 100N

(viii) Which of the following items shows the correct comparison of 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

(ix) If the relative density of a substance is 11.3, the density of the substance is:

A 11.3kg/m^3
B 11.3g/cm^3
C 113000kg/m^3
D 11300g/cm^3

(x) Which of the following apparatii is not used to measure the volume of liquid?

A Measuring cylinder B Pipette

C Burette D Gas Jar

ANSWERS

S/N	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
ANS										

2. Match each item in **List A** with the correct response in **List B** by writing its letter below the number of the corresponding item in the answer table provided.

LIST A	**LIST B**
(i) Flexible ruler used to measure long distance and length of an object	A Meter rule
(ii) Instrument used to measure small length with greater degree of accuracy than meter rule	B Tape measure
(iii) Accuracy of 0.001cm	C Triple beam balance
(iv) Used to show the time elapsed	D Micrometer screw gauge
(v) Used to measure the mass of an object	E Vernier caliper
	F Spring balance
	G Stopwatch
	H Eureka can

ANSWERS

S/N	(i)	(ii)	(iii)	(iv)	(v)
ANS					

SECTION B (70 Marks)

Answer **all** questions in this section

3. For each of the items (a) – (d), fill in the blank spaces by using an appropriate word or phrase in relation to the knowledge you have in physics.

(a) ……...…… always oppose the motion of the body.

(b) ……..…is used to measure the density of granules.

(c) ……..is an upward force exerted by fluid on the object.

(d) …….……..... and …… are two types of intermolecular forces.

4. (a) What is relative density? Express the relative density in terms of mass.

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(b) Asha is a form one student at Nyamwezi Secondary School. She obtained the following results from an experiment:

- Mass of an empty beaker = 48g
- Mass of beaker + liquid M = 60g

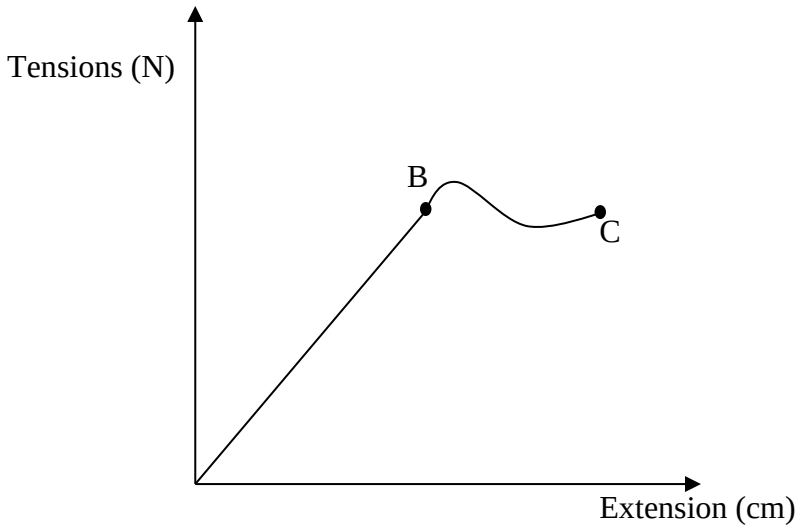
If she used a 25cm^3 pipette to transfer liquid M to the beaker, calculate the density of the liquid M

5. With aid of diagrams, differentiate between the instrument of measurements having accuracy of 0.01cm and 0.001cm.

	Accuracy of 0.01cm	**Accuracy of 0.001cm**
Name of the instrument		
Diagram		

6. Explain why:
   (a) It is important for all apparatii used in electrical experiment to be thoroughly dried. ……
   ……..
   ……..
   (b) It is important to form the hypothesis before doing an experiment. ……
   ……..
   ……..
   (c) It is necessary to wear gloves when giving first aid to a bleeding person……
   ……..
   ……..
   (d) The smell of rotten body is felt at a bit far distance. ……
   ……..
   ……..
   (e) Mosquitoes can manage to walk on the surface of water. ……...
   ……..
   ……..

7. Carefully study the graph below and then answer the questions that follow:



   (a) Name and state the law that relate tension and extension of a stretched spring.
   Name of the law: ……..
   How does it state: ..……..
   ……..
   ……..
   ……..

(b) Name and define point B.

Name: ……..

Definition: ……..

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(c) Name and define point C .

Name: ……..

Definition: ……..

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8. Complete the table below by showing the application of physics in other natural science subjects and the principles governing the working of instruments used in such application.

S/N	**Subject in which physics is applied**	**Application or principles governing the working of instruments applied**
(i)	Chemistry	
(ii)	Biology	
(iii)	Mathematics	
(iv)	Geography	

9. (a) How is the apparent weight of an object in a fluid related to its actual weight in air?

(b) (i) Calculate the resulting buoyant force if a steel ball of radius 6m is immersed in water. Assume density of water to be 100kgm^3 and acceleration due to gravity is 10N/kg.

(ii) Distinguish between floatation law and Archimedes principle.

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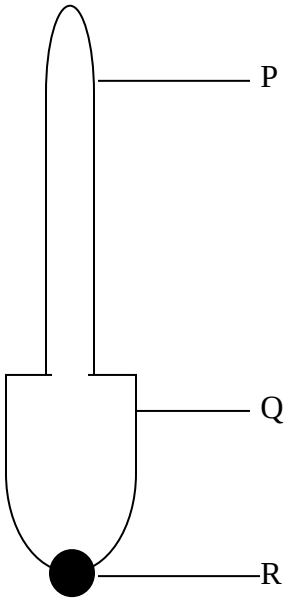
SECTION C (15 Marks)

Answer the question **ten (10)** below

10. Carefully study the diagram below and then answer the questions that follow:



(a) Give the name of the apparatus above. ……...

(b) Label the parts P, Q and R.

P ……..

Q ……..

R ……..

(c) Explain why:

(i) Part P is narrow. ……..

……..

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(ii) Part Q is wide. …….

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(d) Explain the uses of the apparatus above.

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