THE UNITED REPUBLIC OF TANZANIA

TUNDUMA TOWN COUNCIL

FORM TWO JOINT EXAMINATION

CODE: 031 **PHYSICS**

Time: 2:30 Hours **Year: MAY 2025**

Instructions

1. This paper consists of section A, B and C with a total of **ten (10)** questions.
2. Answer **all** the questions in each section.
3. All answers must be written in the spaces provided.
4. All writings must be in **blue** or **black** ink, **except** drawings which must be in pencil.
5. Communication devices and unauthorized materials are **not** allowed in examination room.
6. Write your **name** at the right corner of every page.
7. Where necessary the following constants may be used.
   (i) Acceleration due to gravity, g = 10 m/s^2
   (ii) $\pi = 3.14$

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

SECTION A (15 Marks)

Answer **all** questions from this section.

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

(i) Why physics, chemistry and biology are natural science subjects?

A They need practical and theory work for leaning

B They need only theory for learning

C They need practical work only

D They need observation and theory work for leaning.

(ii) Which of the following is a safety precaution in the physics laboratory?

A Doing experiment in the laboratory

B Handling apparatus in the laboratory

C Use equipment with care in the laboratory

D Use equipment with help in the laboratory

(iii) A current of 0.2 A flow through a resistor of 4 Ω. The potential difference across a resistor is.

A 20 V

B 0.8 V

C 0.05 V

D 8 V

(iv) Which of the following statement is correct about mass?

A it is measured by beam balance

B it is measured by spring balance

C it varies with place

D It can be zero

(v) A hydrometer is an instrument used to measure

A The volume of the liquid

B The density of the liquid C The density of the solid D The volume of the solid

(vi) When a body of mass m. is lifted through a height h, it possesses the energy known as

A kinetic energy

B light energy

C chemical energy

D potential energy

(vii) If the angle between two plane mirror is 60^{o}, what will be the number of images? A 2

B 4

C 5

D 3

(viii) The presence of charge in a material can be demonstrated by

A electrophorus

B gold leaf

C electroscope

D earth wire

(ix) The process of removing magnetism from the material is known as

A polarization

B magnetizing

C magnetization

D demagnetization

(x) Why an atom is electrically neutral?

A It consists of equal number of electrons

B It consists of equal number of protons and electrons

C It consists of equal number of electrons and neutrons

D It consists of equal number of protons and neutrons

2. Match the description of measuring device in **List A** with the name of corresponding measuring devices in **List B** by writing a letter of correct device below the item number in the table provided.

List A	List B

(i)	An instrument that measures volume of liquids	A	Measuring cylinder
ii)	An instrument that measures body temperature	B	Pipette
iii)	An instrument that measure force of pull	C	Vernier calipers
iv)	An instrument that transfer a specific amount of liquid from one container to another.	D	Glass tumbler
v)	An instrument that measures length, depth, internal and external diameters.	E	Spring balance
		F	Clinical thermometer
		G	Beam balance

Answers

List A	i	ii	iii	iv	v
List B					

SECTION B (70 Marks)

Answer **all** questions from this section.

3. (a) Briefly explain the relationship between physics and biology. Give three points.

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(b) Explain two application of physics in your daily life at school.

(i) ……..

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(ii) ……..

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4. (a) What do you understand by the following terms?

(i)Work ……...

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(ii) Energy

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(iii)Power ……..

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(b) Calculate the power of a pump which can lift 200 kg of water through a vertical height of 6 m in 10 seconds.

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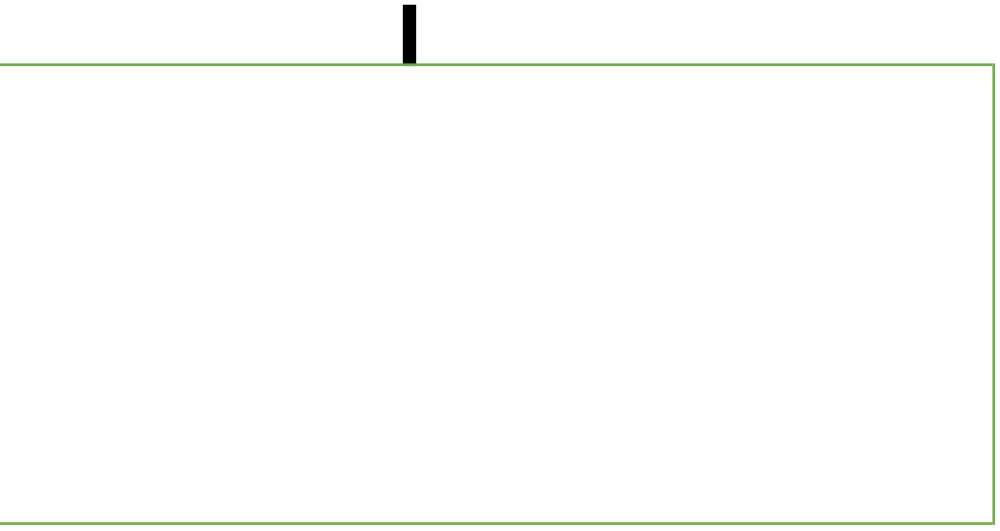
5. (a) Light is the form of energy. State any two characteristics of it which can be distinguished from other sources of energy.

(i) …….

(ii) ……..

(b) With the aid of diagram, state the laws of reflection



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6. (a) With examples explain types of forces

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(b) Briefly explain any three contact forces

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(ii) ……..

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(iii) ……..

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7. (a) State Archimedes principle and the law of floatation

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(b) Your physics teacher has assigned you to verify Archimedes principle

(i) Name the materials which should be used in the task given

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(ii) With the aid of diagram, explain how you will verify Archimedes principle.

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8. (a) (i) State kinetic theory of matter

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(ii) Briefly explain three classes of matter

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(b) (i) State Hooke's law

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(ii) Briefly explain three application of elasticity in your daily life in various fields.

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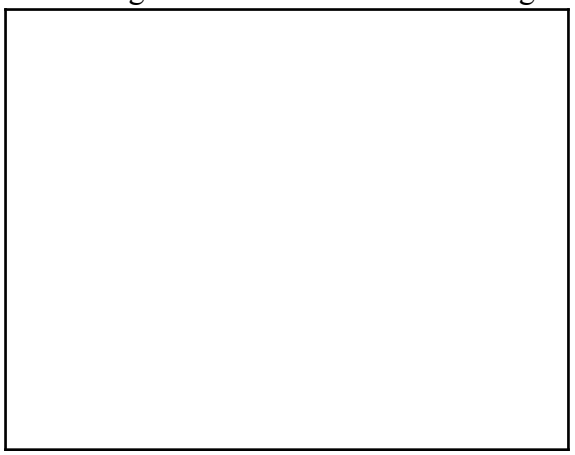
9. (a) With the aid of diagram describe the structure of gold leaf electroscope.



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(b) An electric circuit has three capacitors arranged in parallel to a cell. If the potential difference, V across each plate is the same, calculate the total capacitance.

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SECTION C (15 Marks)

Answer question **ten (10)**

10. (a) What are the uses of the following devices

(i) Manometer ……..

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(ii) Hare's apparatus (inverted U-tube) …….

(iii) U-tube …….....

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(iv) Barometer ……....

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(b) Why a big elephant manages to walk comfortably in muddy soil without sinking while a human being may sink easily?

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(c) Draw a well labelled diagram which demonstrate that liquid pressure depends on depth