ISESE

FORM TWO PHYSICS MARKING GUIDE

SECTION.A (15 MARKS)

1.

i	ii	Iii	Iv	v	vi	vii	viii	ix	x
D	B	D	D	C	D	A	D	B	C

@1marks

2.

i	Ii	iii	iv	v
C	A	E	B	F

@1mark

SECTION.B (70 MARKS)

3 (i) Do not touch the victim who is still in contact with electric current.

(ii) Break the contact by switching off the current at the switch or the main switch if it can be reached easily

(iii) If it is not possible to switch off the current, move the person from his or her position by using a non-conductor materials, for instance a piece of dry wooden plank or broom.

(iv) If you suspect that area has high voltage, call for professional help immediately

(v) If the victim is un conscious, check the breathing and pulse rate, if he or she has breathing problems, try to revive his or her breathing rate to normal.

(v) Administer first aid for shock, burns or other injuries sustained by the victim

(vi) Take the victim to the nearest heath facility @**2marks**

4 (i) The study of physics enables a person to answer questions about physical properties of matter.

(ii) Enable us to acquire knowledge and skills

(iii) Helps to recognize the universe

(iv) Helps to get professional people like doctors or engineers.

(v) Help to know light and its properties. **@ 2marks**

5 (a) Some devices such as Carbon 14 used in history are made of the application of physics

(b) The devices used to study weather in geography are made of the application of physics e.g. Wind vane, Anemometer, Rain gauge etc

(c) Physics simplifies the study of microorganisms in biology by using microscope. **@ 2marks**

6 (a) i) F- Metal frame

(ii) B-Object

(iii) N-Locking nut

(iv) E-Sleeve

(v) L-Sleeve scale

(vi) C-Thimble scale

(vii) T-Thimble

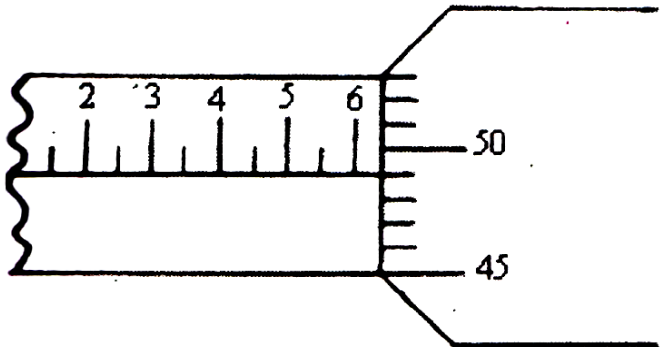
(viii) R-Ratchet

(ix) A-Anvil

(x) P-Spindle **@ (0.5mark)**

(b) Solution

Start by drawing main scale showing reading close to 6.5mm (i.e not touching the 6.5mm mark) then draw the thimble to show reading of 0.49 mm.



5 marks

7 (a) Surface tension **3 marks**

(b) Gravitational pull (weight) **3marks**

(c)Surface tension, due to gravity **2 marks**

8 (a) For the work to be done, the body should move through a certain distance since work is the product of force and distance moved in the direction of force.

(b) Due to transformation of energy from kinetic energy to heat energy

(c) Solution

The work done on the car increases its kinetic energy

Work done = ΔKE

$=\frac{1}{2}mv^2f - \frac{1}{2}mv^2\ i$

$= \frac{1}{2} \times 1000kg\ \times (40m/s)^2 - \frac{1}{2} \times 1000kg(10m/s)^2$

= 750000J

The energy used by the car is 750000J

The power required is given by:

P = $\frac{Energy\ used}{Time}$

$= \frac{750000J}{8s} = 93750W.$

Car engines are often rated in horsepower (hp) where 1 hp=746 watts.

What is the required power measured in horsepower?

P= 93750 $\times \frac{1hp}{746W}$

= 125.67hp

9. The difference when a bar of soap is cut using a thin wire and when using thick wire is that, it was easier to cut a bar of soap when he used a thin piece of wire than a thick one. This shows that the smaller the surface area it exerts greater pressure.

SECTION.C (15 MARKS)

10. The volume between 0.8 and 1.0 marks be V_2

The volume below the 0.8 mark be V_2

Then, V_2= Area x height

= 16cm x 0.5cm^3

=8cm^3

So, $V_3 = V_1 + V_2 = (V_1+8)$cm^3

The upthrust on the hydrometer when in water U= $\rho_{water} \times V_1 \times g$

Upthrust on the hydrometer when in the liquid U= $\rho_{liquid} \times V_3 \times g$

From the law of floatation,

The weight of the hydrometer = upthrust = upthrust is liquid

That is

$$\rho_{water} \times V_1 \times g = \rho_{liquid} \times V_3 \times g$$

Thus,

$V_1 = \frac{\rho_{liquid} \times V_3}{\rho_{water}} = \frac{\rho_{liquid}}{\rho_{water}} \times (V_1 + 8)$

$V_1 = \frac{0.8}{1.0} \times (V_1 + 8)$

$V_1 = 0.8V_1 + 6.4$

$0.2V_1 = 6.4$

$V_1 = 32$cm^3

Therefore, the volume of hydrometer below 1cm mark is 32cm^3

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 INAPOVUKA HIVYO LIPIA MAPEMA KUEPUKA GHARAMA KUBWA BAADAE**
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U.B.N COOPERATION
O-LEVEL MONTHLY TEST 2025
FORM TWO AND FORM FOUR

OFA OFA

U.B.N COOPERATION TUNATOA OFA MAALUM YA KUJIUNGA NA GROUP LETU LA "U.B.N COOPERATION" KWA WAKUU WA SHULE NA WATAALUMA KWA TSH 100,000/= KWA KIDATO KIMOJA AMBAPO UTAPATA MITIHANI YA KILA MWEZI (MONTHLY TEST NA MARKING SCHEMES ZAKE) KWA MASOMO YOTE NDANI YA MIEZI SITA (MWEZI JANUARI – JUNE). OFA HII NI KWA KIDATO CHA PILI NA CHA NNE TUU. MWISHO WA KUJIUNGA NA OFA HII NI TAREHE 15/01/2025

KWA MAWASILIANO TUCHEKI KWENYE NAMBA 0624 254 757 WHATSAPP TU