535/1
PHYSICS THEORY
Paper 1
Jul. /Aug. 2024
2½ hours

JINJA JOINT EXAMINATIONS BOARD

Uganda Certificate of Lower Secondary Education

MOCK EXAMINATIONS AUGUST-2024

PHYSICS

Paper 1

2 hours 15 minutes

INSTRUCTIONS TO CANDIDATES:

This paper consists of **two** *sections;* **A** *and* **B**. *It has* **seven** *examination items.*

Section **A** *has* **three** *compulsory items.*

Section **B** *has* **two** *parts;* **I** *and* **II**. *Answer* **one** *item from each part.*

Answer **five** *items in all.*

Any additional question(s) answered will not be scored.

All answers **must** *be written in the booklets provided.*

SECTION A

Answer **all** *the items from this section*

Item 1.

On a sunny-hot day, Majambere from his garden, carrying some maize and moving towards a tall wide tree to take shelter, hears an explosion of a seed near him and after a short time, he hears another successive similar explosion which appears to come from the tree. On his way, very thirsty, he notices a pool of water in front which appears to move away from him as he approaches it. On reaching the tree, he realizes that the tree does not contain explosive seeds. Majambere sees a circular glass under the tree and recalls that he can start fire to roast his maize and eat, after which he sleeps off until dark. The fire was lit successfully when the glass was 20 cm from the dry grass. Looking for Majambere, is a friend, with a torch who finds him in a black shirt with yellow spots at night. The colour of the shirt leaves Majambere and his friend confused.

Hint:

The glass is curved outwards on both surfaces.
Majambere's cloth was blue with red spots during day time.
The second sound was heard after 1.8 s.

Use:
Speed of sound in air = 330 ms $^{-1}$.

Task:

As a student of physics,

(a) (i) help Majambere to know why he hears two similar successive sounds. ✓
(ii) write down the two major natural phenomena that resulted into the appearance of the pool of water that is seen by Majambere. ✓

(b) describe to Majambere how, the

(i) pool of water appeared in front of him. ✓
(ii) glass managed to burn the grass. ✗

(c) help Majambere and the friend to clear their confusion about the colour of the shirt. ✓

(d) using calculations and giving an appropriate reason where necessary, what is the;

(i) power of the glass? ✓
(ii) distance from the tree to where Majambere heard the first explosion. ✓

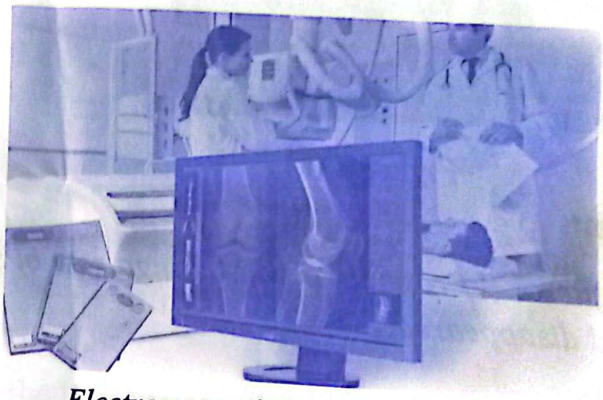
Item 2

Two students **A** and **B** started an argument about how the sun gives out heat and light. Student **A,** says some two materials inside the sun combine resulting into another, which makes heat and light to be produced. Student **B,** says a material in the sun splits to form other smaller ones, then heat and light are produced. With no agreement reached, they started fighting. Student **A,** falls to the ground and can not walk. On-lookers rush him to the hospital where they are told he has to go to a machine which uses electromagnetic waves to find out if any of his bones is broken. Student **B,** left scared, goes to ease himself and accidentally enters a room prohibited from unauthorized hospital staff without noticing it and he is rushed away to a quarantine room for examination. One **doctor** tells him that the room he entered had dangerous materials that release some things making them reduce in weight but Student **B,** could not believe it. The doctor brings one which weighs 160g and after 140 seconds, it weighs 1.25 g. The On-lookers have no idea about the electromagnetic wave machine and worried of what it might do to student **A**.

Support material

Figure 1

Symbol on a door to un-authorized room



Electromagnetic wave machine

Task:

As a learner, using your knowledge of physics, help student **A**, student **B** and the On-lookers on the following;

(a) state and define the natural processes that caused the argument.

(b) using a simple well labelled structure of the electromagnetic wave machine in the picture above, describe for them how the waves used in the machine are produced.

(c) (i) using calculation, find the time it takes the mass of the material brought by the **doctor** to reduce to 20 g.

(ii) mention the most likely dangers that student **B** may face.

(d) What advice would you give the people who would wish to work in the un-authorized room in the future?

Item 3

Yonga, a 15-year-old boy, on the day when Moslems stopped fasting, observed a small curved object in space that emitted light at night and after a number of days, it became bigger, circular and emitted light much more intensity. One day when the object could not be seen, he observed tinny shinny bodies in space that seemed to move closer and at the same time appeared to recede from him. When he went back to the house there was a live day time football broadcast from Japan on their TV, "confused"! and on changing the TV channel to National Geographical Science, he saw the pictures in figure 2.

Support

Figure 2 (a)

Figure 2 (b)

Hint:

Figure 2 (b) resembles what Yonga saw in space during the days the bright object had disappeared.

Task:

As a student of physics ready to explore the wonders of the space;

(a) help Yonga to explain why the

(i) object changed the size and its brightness and eventually disappeared as days increased from the first day Moslems stopped fasting.

(ii) tinny-shinny bodies appear to move closer and recede from him at the same time.

(b) Explain to Yonga;

(i) how it is possible to be day time in Japan and night time at his place.

(ii) how the football in Japan and pictures in figure 2 (a) and (b) are ably seen on his TV screen.

(c) Briefly describe one theory that explains the existence of objects seen in the picture in figure 2 (b).

SECTION B

PART I

Answer **one** *item from this part.*

Item 4

Calypso intends to put up a water storage tank with a good pressure supply pump. On the sides of the tank should be a ladder with steps each of height $0.35m$ in order to easily climb and clean the tank when it gets dirty. For the pipes used not to burst due to harsh weather conditions (that cause expansion and contraction), Calypso was told to purchase pipes made of suitable materials and he needs assistance on installation process. On his way back, Calypso increased the car's speed from 30 ms^{-1} to 42 ms^{-1} which made the tyre to burst after temperature increase.

Hint:

The supply pump pressure should be $1\times10^{4}\,Nm^{-2}$.
Distance travelled during temperature increase is 180 m

Use:

Density of water = $1\times10^{3}\,kgm^{-3}$.
Acceleration due to gravity, $g = 10ms^{-2}$.

Task:

As a learner of physics help Calypso to

(a) get the height to which the tank must be raised and the number of steps to be put on the ladder.

(b) understand how the

  (i) pipes would be connected to the tank to ably supply water.
  (ii) suitable material of the pipes to be used would be determined.

(c) determine the time taken during velocity increase above which the tyre would not burst and advise Calypso on how to avoid such breakdown circumstances in the future.

Item 5

Makhoha is a young business man who operates a dairy business and buys five jerry cans of milk every day from your farm. Before giving him milk, you always test its purity using a hydrometer. One morning, your hydrometer failed to work yet milk had to be tested to convince Makhoha to buy it. You advised him to put milk in a refrigerator which switches off itself automatically. This resulted into the temperature of milk dropping from room temperature to 3°C, leaving Makhoha worried in fear of his milk getting spoilt.

Hint:

Volume of the jerry can is 20 litres
Specific heat capacity of pure milk is 3930 J kg^{-1} °C^{-1}
Density of pure milk is 1030 kg m^{-3}
Room temperature of milk is 25 °C
Measuring cylinder, beaker and a digital electronic balance can be used.

Task:

As a person who studied physics, offer Makhoha assistance on how to

(a) determine the purity of milk without the hydrometer.

(b) know how much heat energy is withdrawn from the milk by the refrigerator.

(c) understand how the features of the device you proposed, can preserve milk and prevent it from getting spoilt.

PART II

Answer **one** *item from this part*

Item 6

Parents are to visit your school on Science fair day and among things to be exhibited is house wiring. On the exhibition day, three excited parents approach you with three bulbs labelled 240*V*, 30*W*, 240, *20W* and 240*V*, 25*W* whose meaning is not known to them. One parent complains that he had such bulbs connected in his house and when one bulb blew up, the rest went off but there was electricity as seen from the main switch and another one with the same type and number of bulbs complained of paying a bigger bill than the neighbour who also had three bulbs in the house. The electricity transmitted to your place is 130*V*.

Task:

As a student carrying out a science fair on house wiring in physics,

(a) help the parents to

(i) understand the meaning of the labels on the bulbs.
(ii) know the wiring mistake that made the other bulbs to go off and correct the mistake.

(b) with an explanation, having the problem of low energy supplied to you, assist the parents on how all the bulbs can work effectively at the same time assuming they are all new. Find the effective resistance in the whole system.

(c) guide the parents on why one of them was paying a bigger bill and advise them on how to avoid it. If one unit of electricity is UGX 950, what is their bill when the bulbs remain on the whole day?

Item 7

A maid at home has just prepared porridge for breakfast and on pulling out the bucket with sugar to mix in porridge, your two little siblings carrying small iron nails happen to accidentally throw the nails into the bucket and on rushing to remove, the nails just sunk into the sugar crystals. She is in trouble from your parents. You start shouting, any magnet?!! but no one has it. In your search, you come across connecting insulated wires, an iron bar and four "*Tiger Head* " cells in the radio receiver.

Hint:

Each cell has a P.D of 1.25 V and the insulated wires have a total resistance of 7.5 Ω.

Task:

As a student of physics, help the scared maid and your siblings

(a) to understand the meaning of a magnet.

(b) (i) to design and describe the system that will solve the problem at hand in absence of a magnet.

(ii) to find the total power supplied to the system.

(c) how to improve the strength of the system because as you try to lift the nails, some of them fall into the sugar and tell them the necessary precautions that must be taken when you are dealing with such a setup.

JINJA JOINT EXAMINATIONS BOARD

Uganda Certificate of Lower Secondary Education

SCORE GUIDE 2024

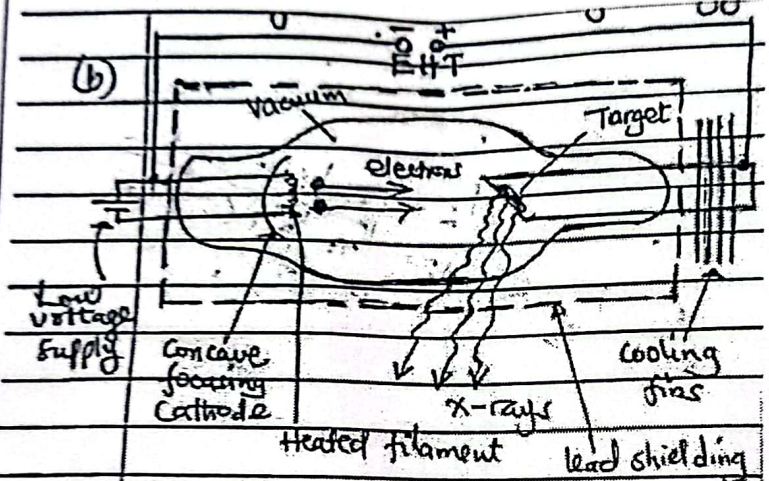
535/1

PHYSICS THEORY

Paper 1

ITEM NO.	ITEM SOLUTION	ITEM SCORES
m 1 (a) (i)	The first sound heard is due to the explosion of the seed and the second sound heard is due to the sound reflected by the tree.	2 scores for two sources of sound. 1 score for one source of sound.
(ii)	– Refraction – Total internal reflection	2 scores and 1 score for @
(b) (i)	– Air near the ground is hotter than that up in space and so, it is progressively less dence optically from the sky to the ground. – Light travelling at an angle greater than zero from the sky is therefore gradually bent away from the normal. – When the angle of incidence exceeds the critical angle at some layer, total internal reflection takes place. – Light then begins to travel upwards towards the observer, who sees what appears to be a pool of water on the ground, and so, seeing the virtual image of the sky.	4 scores for different optical densities, progressive refraction away from the normal, angle of incidence exceeds critical angle to total internal reflection and formation of virtual image of the sky. Otherwise progressively reduce scores for missing concepts as long as logically explained.

ITEM NO.	ITEM SOLUTION	ITEM SCORES
(ii)	— When the curved surface of the glass is directed towards the sun, the rays of light therefore come from an object at infinity and so, travel parallel to each other and strike the surface parallel and close to the principal axis — After refraction, a large intensity of the rays meet at the principal focus of the glass on the remote side, resulting the transformation of light to heat energy, consequently burning the grass.	1 score for object at infinity and paraxial rays, 1 score for converging at the principal focus and 1 score for transformation of energy from light to heat energy.
(c)	— Yellow is a combination of red and green. This means that Majembere's friend has a torch which produces green light. — When green light falls on blue, it is absorbed, hence producing black and on falling on red, it produces a colour addition, making red look yellow. This makes the cloth look black with yellow spots.	1 score for yellow = red + green and green light form the torch. 1 score for absorption of blue to black and red turning to yellow.
(d) (i)		
(ii)	Power, $P = \frac{1}{f(in\ m)} = \frac{1}{(20\times10^{-3})}$ $\therefore P = +5D$. The power is positive since the glass is a convex lens.	1 score for expression, 1 score substitution and 1 score for answer with unit.
	Velocity, $v = \frac{2x}{t}$ $v = 330ms^{-1}$, $t = 1.8s$ $\Rightarrow 330 = \frac{2x}{1.8}$ $\Rightarrow x = \frac{330\times1.8}{2} = 297m$	1 score for expression, 1 score substitution and 1 score for answer with unit.
		Total = 10

ITEM NO.	ITEM SOLUTION	ITEM SCORES
em 2 – (a)	– Nuclear fusion. It is the process in which two unstable light nuclei combine to form a heavier stable nucleus, with the emission of a significant amount of heat energy. – Nuclear fission. It is the process in which an unstable heavy atomic nucleus splits into two stable light nuclei, along with the release of energy.	1 score for the two processes and 2 scores for the definitions, @ 1 score
(b)	 The cathode is heated by a low voltage source and electrons are emitted from it. The electrons are then accelerated to the anode by an E.H.T voltage supply, connected across the cathode and the anode. Upon reaching the metal target, 99% of the K.E is converted into heat which is emitted to the surrounding by the cooling fins and 1% of electrons' K.E is converted into X-rays, that can then be directed to the affected area (fracture area).	2 scores for the well labelled structure. 3 scores for the whole process. Otherwise reduce scores for missing concepts as long as the arrangement is logical.

ITEM NO.	ITEM SOLUTIONS	ITEM SCORES
(c) (i)	New mass / Time taken for decay 160g / 0 80g / $t_{\frac{1}{2}}$ 40g / $2t_{\frac{1}{2}}$ 20g / $3t_{\frac{1}{2}}$ 10g / $4t_{\frac{1}{2}}$ 5g / $5t_{\frac{1}{2}}$ 2.5g / $6t_{\frac{1}{2}}$ 1.25g / $7t_{\frac{1}{2}}$ $\Rightarrow 7t_{\frac{1}{2}} = 140s \therefore t_{\frac{1}{2}} = 20s$ Thus, the time taken for the mass to become 20g $= 3 \times 20$ $= 60s$	1 score for the decay chain, 1 score for equating the decay time, 1 score for half-life and 1 score for time of decay to 20g
(ii)	- Severe skin burn - Body cell mutation, hence genetic changes - Growth of blood cancer - Damage of eye sight and body tissues. - Slow body resistance to low risk diseases. - Sterility (inability) to produce.	2 scores for four to three dangers and 1 score for two dangers.
(d)	- Wearing of protective clothing when handling radioactive elements - Handle radioactive elements using long pair of tongs - Avoiding unnecessary exposure to radioactive materials. - Seeking relevant information from expertise who work in rooms containing radioactive elements - Should keep the radioactive elements and also transport them in thick lead containers.	2 scores for four and above precautions, 1 score for three to one precaution.
		Total = 18 scores

ITEM NO.	ITEM SOLUTIONS	ITEM SCORES
Item 3 (a) (i)	The moon is a non-luminous object and so, it reflects light that falls on it from the Sun to the earth. The moon rotates around the earth, implying that the changing positions of the earth around the Sun makes the moon to be partly obstructed from the Sun's light, hence waxing and waning Crescent (small size). When the moon fully gets the sunlight, it produces full brightness, hence waxing and waning gibbous. The light completely disappears when the comes between the Earth and the Sun.	1 score for how the moon gets light, 1 score for rotation of the moon and changing position of the sun and the earth, 1 score for phases of the moon and 1 score for cause of full brightness.
(ii)	The tinny-shinny bodies moving in space are stars. The twinkling of the stars are due to the star's actual motion through space and the motion of the solar system (which the earth is part). Nearby stars appear to shift closer and away from the solar system offenly than distant stars relative to the observer on earth.	1 score for proper motion (apparent motion of the star across the sky) and 1 score for the relative motion of nearby stars relative to the distant stars.
(b) (i)	The earth rotates about it's axis around the Sun. This means that part of the earth faces the Sun and the other part is remote to the Sun. The side that faces the Sun, receives its light and it is in day time, while the part on the remote side does not receive the Sun's light and it is in night time.	1 score for rotation of the earth 1 score for position of the earth relative to the sun and 1 score for how day and night exist.

ITEM NO.	ITEM SOLUTIONS	ITEM SCORES
(ii)	The TV stations transmit their programs using satellite dishes positioned on earth to the space satellite in form of signals (uplink). The space satellite then resends the same signal to other ground satellite dishes in different parts of the world, which then convert these signals into images and sound that are displayed in TV screens.	1 score for uplink, 1 score for downlink and 1 score for signal conversion.
(c)	- Big bang theory: The universe originated from a singularity expanding over billions of years. - Steady state theory: The universe has always existed in its current form, with continuous creation of matter.	1 score for the name of the theory and 1 score for the explanation. NB: only one theory is needed. Total = 14 scores
Item 4 (a)	Pressure, $P = \rho hg$; where: $P = 1 \times 10^4 Nm^{-2}$; $g = 10ms^{-2}$ and $\rho = 1000kgm^{-3}$. $\Rightarrow 1 \times 10^4 = 1000 \times h \times 10$ $\Rightarrow h = \frac{1 \times 10^4}{10000}$ $\therefore h = 1m$ The height should be 1 metre.	1 score for the formula, 1 score for substitution, 1 score for height, h and 2 score for the number of steps.
(b) (i)	Number of steps = $\frac{\text{Height to which the tank is raised}}{\text{Height for each step}}$ $= \frac{1}{0.35} = 2.85$ ≈ 3 steps	
(ii)	The pipe that supply supplies water into the tank is connected to the top part of the tank and the pipe that takes water into the house is connected to the bottom part of the tank since the house supply is by gravity mostly.	1 score for the positions of the pipe connections and 1 score for the reason of connection positions.

(ii)

- Should be resistant to corrosion
- Avoid leaks and contamination
- The materials should be strong enough to withstand the internal pressure of water
- The materials should not leach harmful chemicals into the water supply
- The materials should be relatively cheap for initial costs and also maintenance and replacement costs.
- The materials should be recyclable for environmental sustainability

2 scores for three and more properties and 1 score for one or two property(ies).

(c)

Using $v^2 = u^2 + 2as$, where $v = 42 ms^{-1}$, $u = 30 ms^{-1}$ and $s = 180m$

$\Rightarrow \quad 42^2 = 30^2 + 2 \times a \times 180$

$\Rightarrow \quad a = \frac{1764 - 900}{360}$

$\therefore a \cong 2.4 ms^{-2}$

1 score for expression and substitution and 1 score for final value with unit.

Using $t = \left(\frac{v-u}{a}\right)$

$\Rightarrow$ time, t taken $= \left(\frac{42-30}{2.4}\right)$

$= 5$ seconds.

1 score for expression, 1 score for substitution and 1 score for final value with unit.

Advice:

Calypso should always drive the car at an acceleration lower than $2.4 ms^{-2}$ or take time longer than 5 seconds to cover such a distance (180m).

1 score for the relevant advise. Not limited to what is in the score guide.

Total = 16 scores

Item 5 (a)

1 score for weighing mass of the cylinder, 1 score for transferring known volume, V of milk.

— Using the electronic balance, a clean dry measuring cylinder is weighed and the mass, m_1 is noted.

— By use of a clean dry beaker, some milk is transferred from the jerry can to the cylinder to a known volume, V.

EM NO.	ITEM SOLUTIONS	ITEM SCORES
	— The cylinder with milk is weighed again and the new mass, m_2 is noted. — The volume, V of the milk in the cylinder is also noted. — The mass, m of the milk in the cylinder is obtained from: $m = (m_2 - m_1)$ — The density, ρ of milk is then calculated from: $\rho_m = \frac{m}{V}$	1 score for mass of the combination, 1 score for getting density of milk, and 1 score for comparison of experimental and actual densities of milk.
(b)	= If the density obtained is the same or closely equal to that of the theoretical value, then the milk is pure. Otherwise the milk is not pure.	
	Volume, V of one jerrycan of milk $= 20 \times 1000$ $= 20000\ cm^3$ $= 0.02\ m^3$ Volume, V_5 of five jerrycans $= 0.02 \times 5$ $= 0.1\ m^3$	1 score for volume of milk in one jerry-can and 1 score for volume of milk in five jerry-cans.
	Mass, m_5 of all the five jerrycans $= V_5 \times \rho_m$, where $\rho_m = 1030\ kgm^{-3}$ $\Rightarrow m_5 = 0.1 \times 1030$ $= 103\ kg.$	1 score for expression of mass and 1 score for value of mass with unit.
	Heat absorbed, $Q = mc\Delta\theta$, where $c = 3930\ J\,kg^{-1}\,°C^{-1}$ $\Delta\theta = (25-3) = 22°C$ $\Rightarrow Q = 103 \times 3930 \times 22$ $= 8.905 \times 10^6\ J$	1 score for the expression, 1 score for substitution and 1 score for final value with unit.

NO.	ITEM SOLUTIONS	ITEM SCORES
c)	— The refrigerant liquid flows in the evaporator coils in the freezer compartments. The refrigerant evaporates as it absorbs heat from the freezer. — The refrigerant gas then flows to the compressor, where it is compressed to high temperature and pressure, making it to flow to the condenser pipes (coils) at the back of the refrigirator. — The condenser coils then allow the refrigerant to dissipate heat to the surroundings, leaving it a high-pressure liquid. — The high-pressure refrigerant liquid is then sent back to the evaporator coil by the expansion valve, making it to decrease in pressure. — The cycle repeats, making the milk to become cold to a temperature where no germ in the milk can survive, hence preservation of milk.	1 score for absorption of heat, 1 score for evaporation of the liquid, 1 score for compression, 1 score for heat dissipation, 1 score for gas condensation to liquid again, 1 score for opening of the valve and cycle repetition. Total = 18 scores

i)

(i) 240V, 30W means the bulb consumes 30 J of energy per second when connected to a 240V supply.

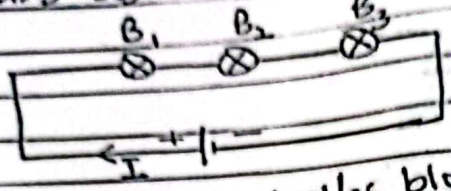
240V, 20W means the bulb consumes 20J of electric energy per second when connected to a 240V supply

240V, 25W means a bulb consumes 25J of energy per second when connected to a 240V supply.

2 scores for three correct explanations and 1 score for two or one correct explanation.

(ii) Wiring mistake

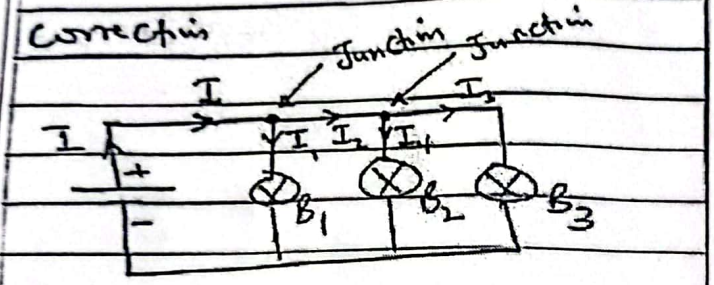
The bulbs were connected in series as below.



When one of the bulbs blows, the circuit becomes open, no current flow in the circuit and so, other bulbs go off.

1 score for the mistake and 2 scores for the circuit diagram and explanation

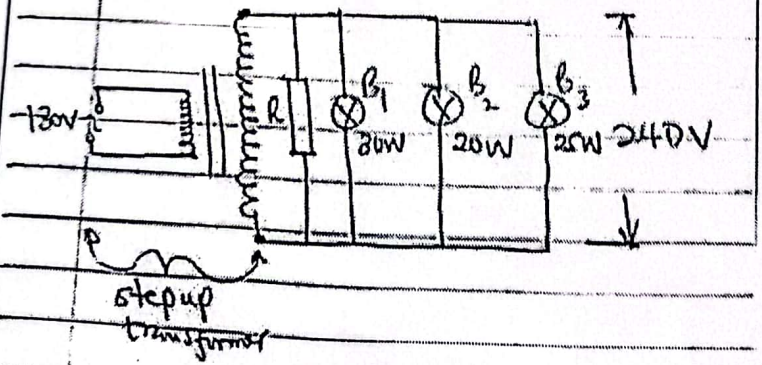
Correction



1 score for the circuit diagram used for correction and 1 score for the explanation of the correction of the mistake.

(b) The bulbs should be connected in parallel such that if one of the bulbs blows, current the divides continues to flow in the other bulbs and so, they don't go off.

Connection

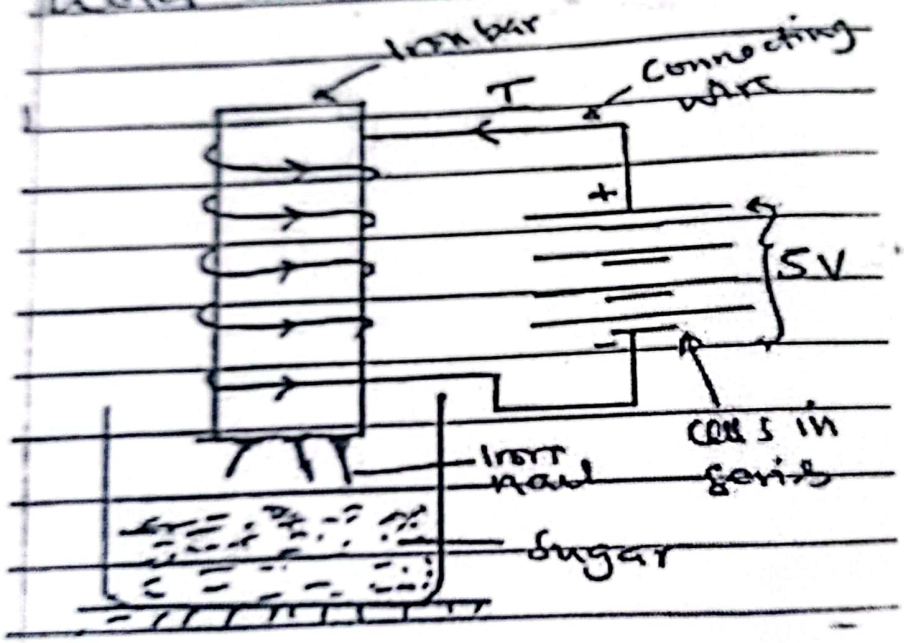


1 score for the step-up transformer, 1 score for the parallel connection of the bulbs,

The bulbs are connected in parallel via a protective resistor to a step up transformer, which steps up the 130V to 240V. This makes the bulbs to light up effectively at the same time.

M NO.	ITEM SOLUTIONS	ITEM SCORES
(c)	Effective resistance Bulb, B_1: $R_1 = \frac{V^2}{P_1} = \frac{240^2}{30} = 1920\Omega$ Bulb, B_2: $R_2 = \frac{240^2}{20} = 2880\Omega$ Bulb, B_3: $R_3 = \frac{240^2}{25} = 2304\Omega$ Effective resistance, R is got from $\frac{1}{R} = \frac{1}{1920} + \frac{1}{2880} + \frac{1}{2304}$ $\Rightarrow R = \frac{12441600}{5529600+4423680+6635520}$ $\therefore R = 768\Omega$	3 scores for all the resistances of the bulbs @ 1 score and 2 scores for the effective resistance, R.
	The high electric bill was due to a high power rating of the bulbs being used. The neighbour was using low power rating bulbs, hence a lower electric bill. Cost of electricity = Power (KW) x time (hr) x unit cost $= \left(\frac{30+20+25}{1000}\right) \times 24 \times 950$ $= 0.75 \times 24 \times 950$ $= 1710$ Kshs	1 score for difference in power ratings of the bulbs used by the parent and the neighbour, 1 score for the expression, 1 score for arithmetic and 1 score for the cost vale (Shs.1710) Total = 18 scores

A magnet is a substance (or amaterial) that has the ability to attract and hold other materials.



1 score for the meaning of magnet.

3 scores for the setup of the system.

ITEM SOLUTIONS	ITEM SCORES
- The four cells are arranged in series and connected to the wire coiled around the iron bar. The bar is then lowered into the sugar bucket. - When current passes through the wire coiled around the iron bar, the iron gets magnetized (becomes a magnet) - Iron nails are ferro-magnetic materials and therefore get attracted to the magnetized iron bar by induction process, hence pulled out of sugar.	1 score for coiling the wire around the iron bar, 1 score for magnetization of the iron bar by electrical method, 1 score for attraction of the nails by induction.
Power, $P = V^2/R$; $V = 5V$ $R = 7.5\Omega$ $\Rightarrow P = \frac{5^2}{7.5}$ $= 3.33\ W$	1 score for total voltage, 1 score for the expression of power, 1 score for the substitution and arithmetic and 1 score for the value with unit.
Increasing the strength. - Add more cells to increase the voltage, hence current supply. - Increase the number of turns of the coiling around the iron bar. - Use wires of materials with low resistance such as copper. - Move the iron bar very closer to the sugar.	3 scores for three or more ways of increasing the strength and 1 score for one or two ways.
Precautions - Do not touch any part of wire in the system using bare hands. This can cause an electric shock or current current leakage to the earth. - Do not use many wires in the system since this can increase the resistance in the circuit, reducing the current and strength of the magnet. - Do not connect the wires direct into the wall sockets at home since this act can cause an electrical accident or even death of the person involved.	2 scores for three or more precautions, but 1 score for two or one precaution given.
	Total = 16 scores