

NAME:.....INDEX NO:.....

SCHOOL:.....

Candidates Signature:

Date:

232 / 2
PHYSICS
PAPER 2
JULY / AUGUST 2008
2 HOURS

LARGER BUNGOMA DISTRICT MOCK EXAMINATION Kenya Certificate Of Secondary Education 2008

232 / 2
PHYSICS
PAPER 2

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in number in the spaces provided above.
- Sign and write the date of examination in the spaces provided.
- This paper consists of TWO sections A and B
- Answer ALL the questions in Section A and B in the spaces provided.
- All working must be clearly shown in the spaces provided in this booklet.
- None programmable silent electronic calculators and KNEC Mathematical tables may e used except where stated otherwise.

FOR EXAMINER'S USE ONLY

Section	Question	Maximum Score	Candidate's Score
A	1 – 13	25	
	14	15	
	15	15	
	16	13	
	17	12	
		80	

This paper consists of 12 printed pages. Candidates should check the question paper to ensure that all the pages are printed as indicates and no questions are missing.

SECTION A (25 MARKS)**Answer all questions in this section in the spaces provided.**

1. An object O is placed near a plane mirror as shown in **fig. 1** below

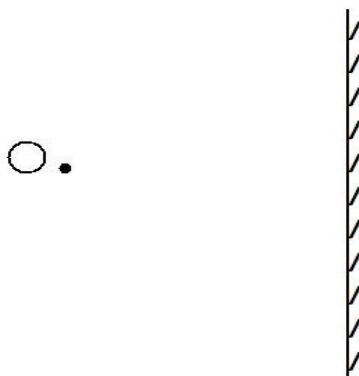


Figure 1

Using two rays **complete** the diagram showing the position of the image. (2mks)

2. **Explain** with an aid of a diagram why to a diver under water, most of the surface looks silvery. Bubbles of air rising from the diver look silvery. (2mks)

3. **State** the type of electromagnetic spectrum emitted by warm objects. (1mk)

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4. A soldier standing between 2 cliffs fires a gun. He hears the first echo after 2s and the next after 5s. **Determine** the distance, between the two cliffs (3mks)

(Take speed of sound as 340 m/s.)

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5. **Explain** why soft iron keepers are suitable for storing magnets (2mks)

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6. **Fig. 2** below shows a conductor carrying current placed in the magnetic field of two magnets. **Complete** the diagram by showing the field pattern and the direction of force F that acts on the conductor. (2mks)



Figure 2

7. You are provided with a polythene rod, an Electroscope, two bars; one a conductor and another one an insulator. **Briefly describe** how you will use the electroscope to determine which one is an insulator. (3mks)

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8. **State two** quantities that are used to determine whether accumulator require recharging or not. (2mks)

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9. **Complete** the table by stating the different types of electromagnetic radiations. (3mks)

Type of radiation	Use
	Sending information to and from satellites
	Emitted by a remote control unit
	Producing shadow pictures of bones

10. **State any one** safety feature present in modern mains plug. (1mk)

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11. **Draw** a circuit diagram to show how you would use a voltmeter, ammeter, variable resistor and connecting wires to find the resistance of a lamp. (1mk)

12. **State** the Flemings left hand rule. (1mk)

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13. A time- base is adjusted so that it draws a horizontal line as shown, 50 times per second.

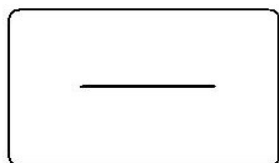


Figure 3

Draw a diagram of what is seen when the following are connected.

(a) A battery which makes the upper y- plate positive. (1mk)

(b) an a.c supply of 50Hz. (1mk)

SECTION B (55 MARKS)**Answer all questions in the spaces provided after each question.**

15 (a) A student hung a magnet next to coil of wire to make a door chime as shown in fig. 4

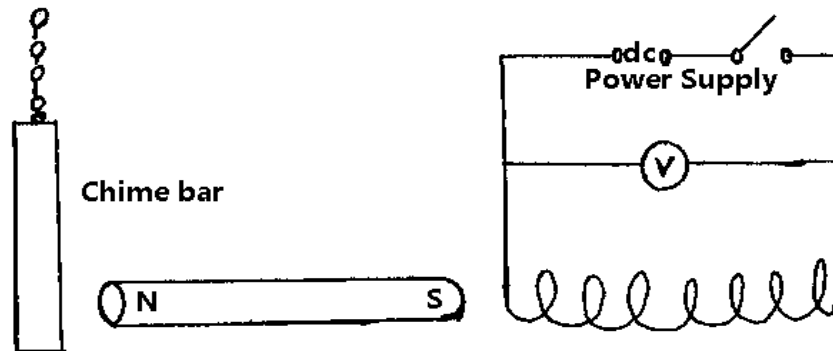


Figure 4

When the current was switched on the magnet hit the chime bar which made a noise.

- (i) **Explain** how the current made the magnet move towards the chime bar. (2mks)

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- (ii) The student wanted the magnet to hit the chime bar harder, **suggest two** changes that would make it happen. (2mks)

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- (iii) The student was told to describe the energy transfers inside the device. **Give two** changes that will happen to the energy as the current flows through the coil. (2mks)

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- (b) A coil of wire is connected in series with a battery a rheostat and a switch as shown in figure 5.

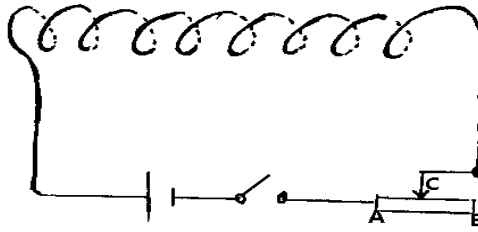


Figure 5

- (i) **Draw**, on the diagram, the shape of the magnetic field inside and outside the coil when the switch is closed. (2mks)

If the slider, C on the rheostat is moved towards B, **What** is the effect on:

- (ii) the resistance of the circuit (1mk)

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- (iii) The current through the coil (1mk)

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- (iv) The magnetic field in the coil. (1mk)

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- (c) i) **Explain** why a transformer will only transform alternating voltages not dc voltages.

(2mks)

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- (ii) **Explain** why transformers are widely used throughout the national grid (2mks)

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- 16 a) Three radioactive substances have to be stored safely. Details of the substances are given below.

Substance	Half life	Type of radiation given out
A	5000 years	Alpha (α)
B	4 years	Beta (β)
C	156 years	Gamma (γ) Alpha (α)

Which of the following containers would you use for each substance.

- (i) Aluminium (ii) Thin plastic (iii) lead lined (3mks)

A:

B:

C:

Give a **reason** to your answer to part (iii) (1mk)

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- (b) **Copy and complete** the table below for substance B (2mks)

Date	Mass of original radioactive substance left.
1 March 1992	8 Kg
1 March 1996	
1 March 2004	

- (c) A Geiger counter was used to measure the activity (In count per minute) from a radioactive sample in the laboratory over a period of years. Over this period the background radiation was regularly measured at 4 counts/minute.

The table of results is shown below.

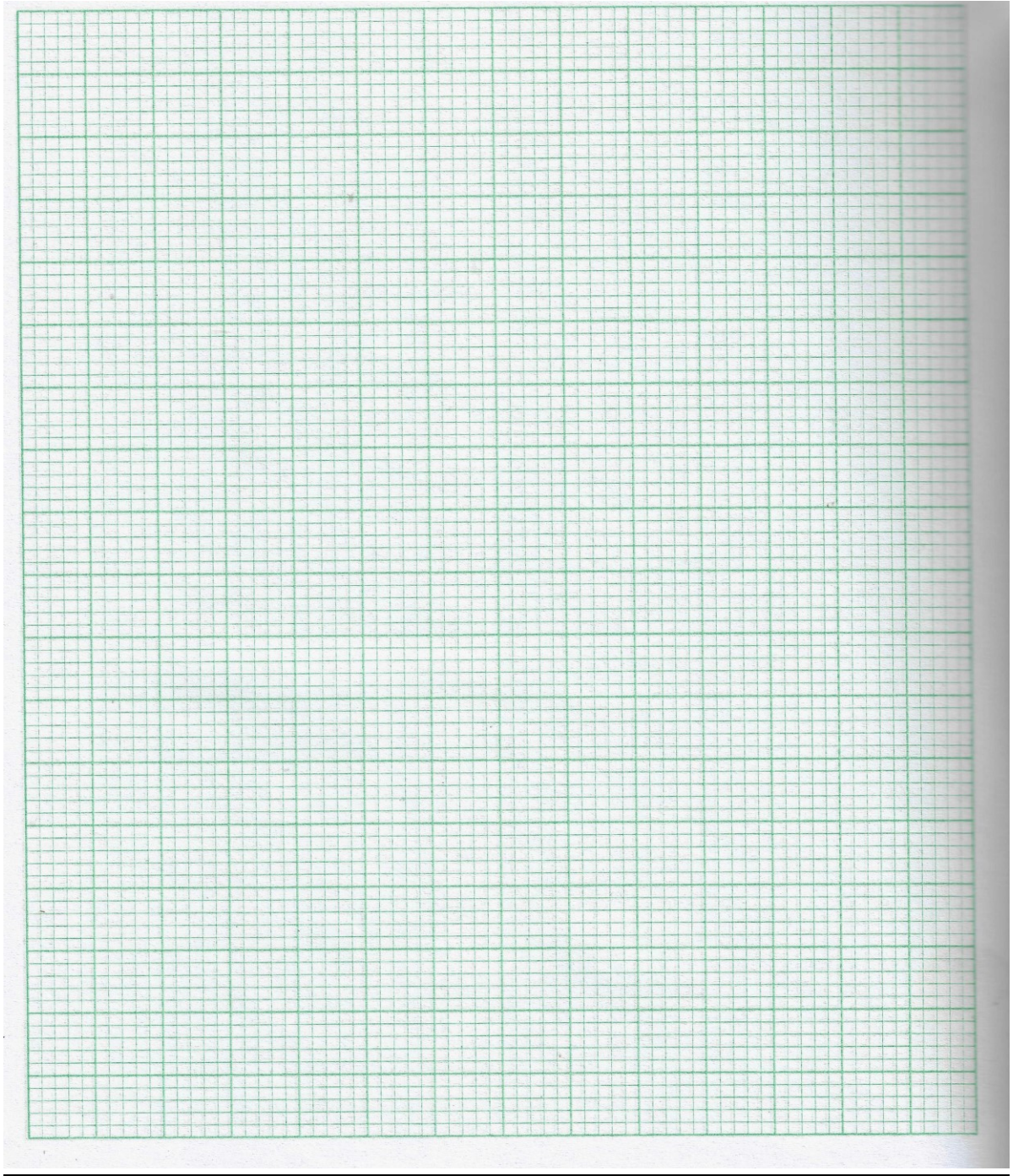
Time in years	0	1	2	3	4	5	6
Recorded activity in counts/min	124	80	52	34	23	16	12
Activity due to sample alone							

(i) **Complete** the table by giving the activity of the sample alone. (1mk)

(ii) **Explain** what is meant by background radiations. (1mk)

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(iii) On the grid provided plot a graph of activity of the sample alone against time. (4mks)



- (iv) **Find** the half life of the substance from your graph. (1mk)

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- (d) While animals or plants are living, the proportion of $^{14}_6\text{C}$ in them remain constant but once they die, the carbon 14 decays. Suppose a modern born contains 80 units of C – 14, and an old born contains just 10 units. **How** old is the bone? (2mks)

(Take the half life of carbon – 14 to be 5700 years).

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17. (a) A vibrating source S produces circular water waves near, a straight reflector as shown in fig. 6.

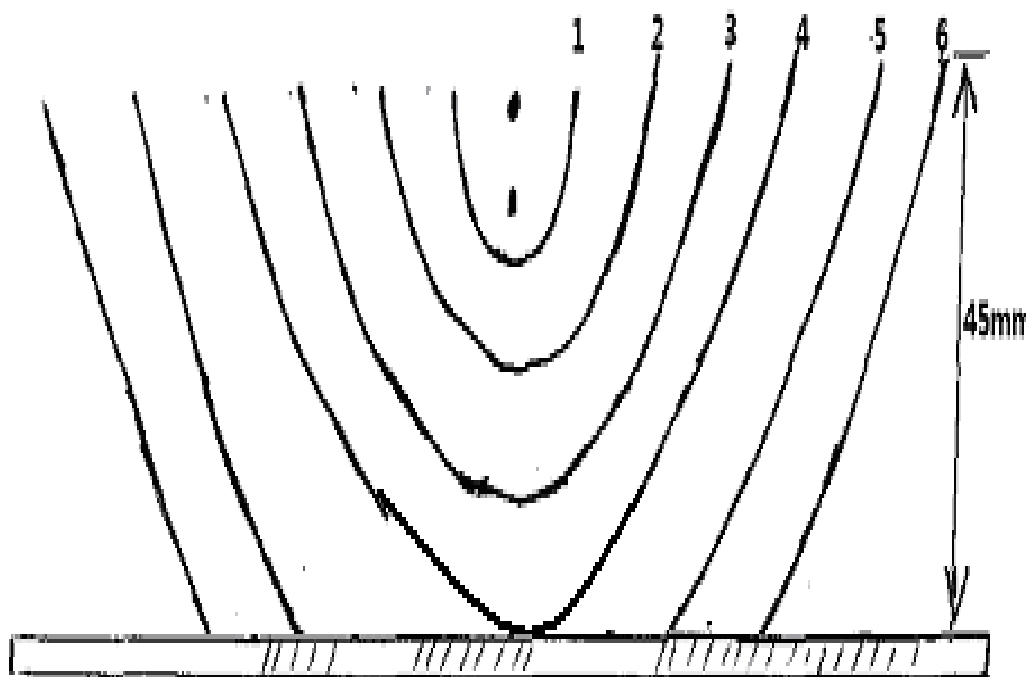


Figure 6

- (i) **Copy and complete** the diagram to show how crest 5 and 6 are reflected (1mk)

- (ii) From the figure **determine** the wavelength of the water waves. (1mk)

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- (iii) **Find** the frequency of the waves if their speed is 60mm/s. (2mks)

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- (b) The figure below show a simple diagram of an eye as shown in **fig. 7**.

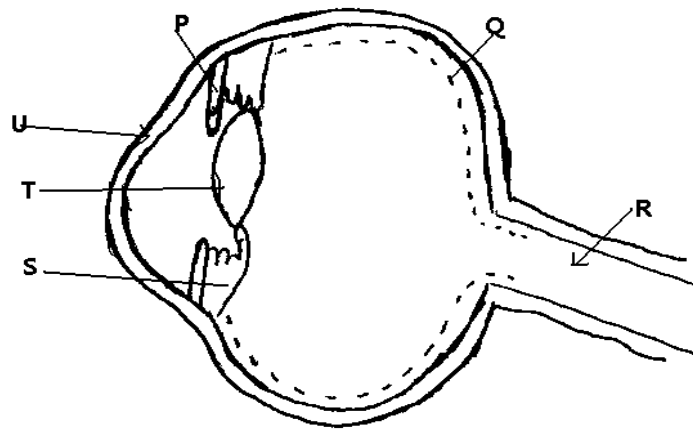


Figure 7

- (i) **Identify** the following parts of the eye by indicating the letter against them.

The cornea:.....

The Retina:.....

(2mks)

- (ii) A person enters a brightly lit room from a dark corridor.

- I. **State** the effect on the pupil of the eye. (1mk)

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- II. **How** does this affect the amount of light entering the eye? (1mk)

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(iii) **Copy and complete** the table below

Part of the eye	Description
	Sensitive to light
	Carries to light
	Alters the size of the pupil

(3mks)

(iv) A normal eye is able to produce sharp images of objects at different distances.

Describe and explain how it does this

(2mks)

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17. (a) A car battery is used to light a 12V lamp A constant current of 3 A passes round the circuit.

(i) **Explain** what happens to the energy of the electron as they flow through the lamp wire.

(3mks)

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(ii) **How** much energy is transferred by the lamp in 20 seconds?

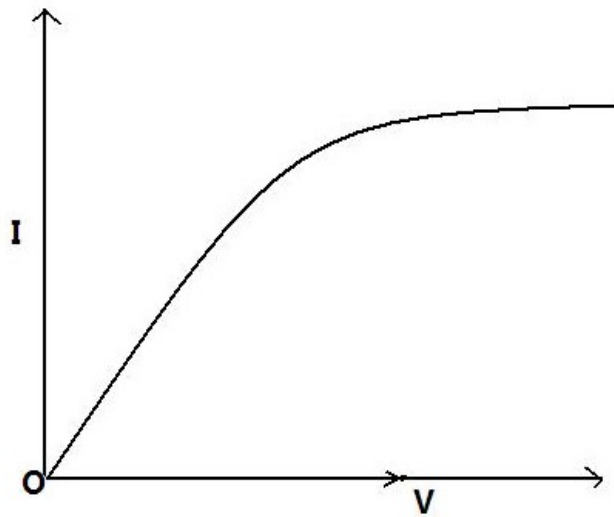
(2mks)

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- (b) For a particular specimen of wire, a series of readings of the current through the wire for different potential differences across it is taken and plotted as shown.



- (i) **Explain** how the resistance of the wire changes (3mks)

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- (iii) **How** would the resistance of a piece of wire change if

- (I) the length were doubled (2mks)

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- (II) the diameter were doubled (2mks)

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