

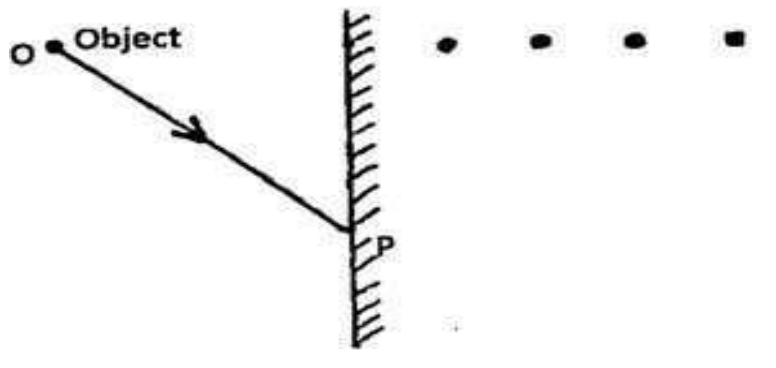
FORM FOUR CLUSTER KCSE MODEL 3

PHYSICS PAPER 2 QUESTIONS

SECTION A (25 Marks)

Answer ALL the questions in this sections in the spaces provided.

1. Figure 1 below shows an object O placed in front of a plane mirror. A ray of light is drawn coming from Object O and striking the mirror at P. After striking the mirror, the ray of light is reflected.

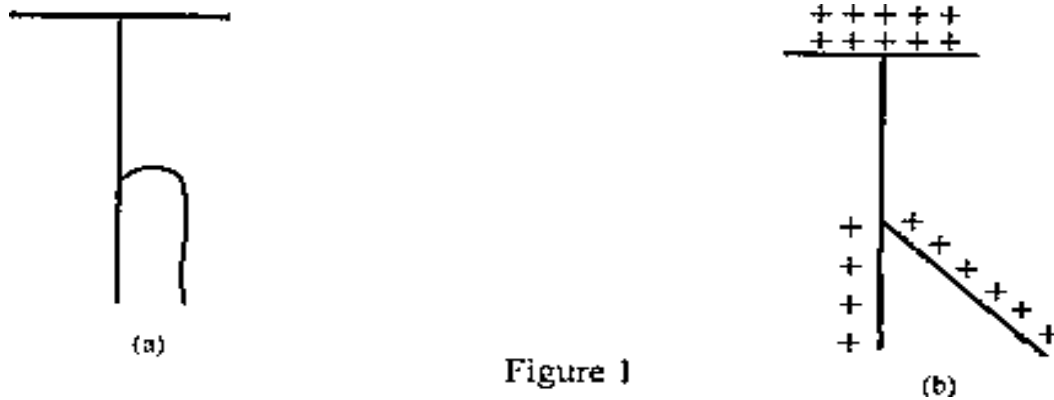


(i) Which of the four dots represents correct position of the image O? Label this Q1. (1mark)

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(ii) By drawing a line on the diagram above to represent the reflected ray at P, mark the angle of reflection and label it r. (1mark)

2. The figure 2 below shows two identical electroscopes. The one on the right is charged but the one on the left is not.



With the aid of the diagram show the charge distribution after the caps of the two electroscopes are connected by a thin conducting wire. (2marks)

3. What position should a small boy stand in front of a concave mirror to view his:

(i) Enlarged and upright image in a barber shop? (1mark)

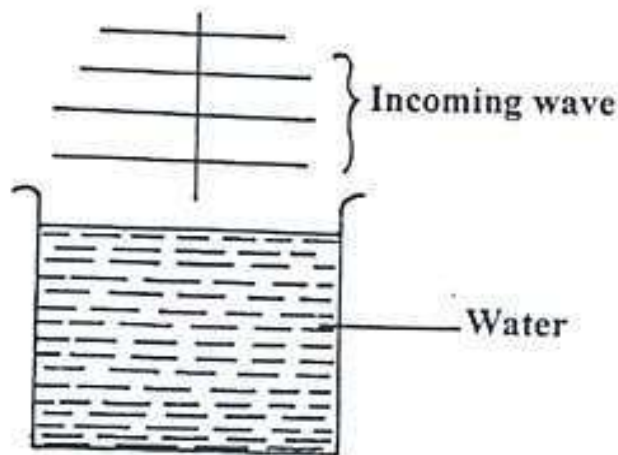
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(ii) Enlarged and inverted image in a fashion modelling room? (1mark)

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4. The figure 3 below shows a wave approaching water surface. Show how the wave moves in the water. (1mark)

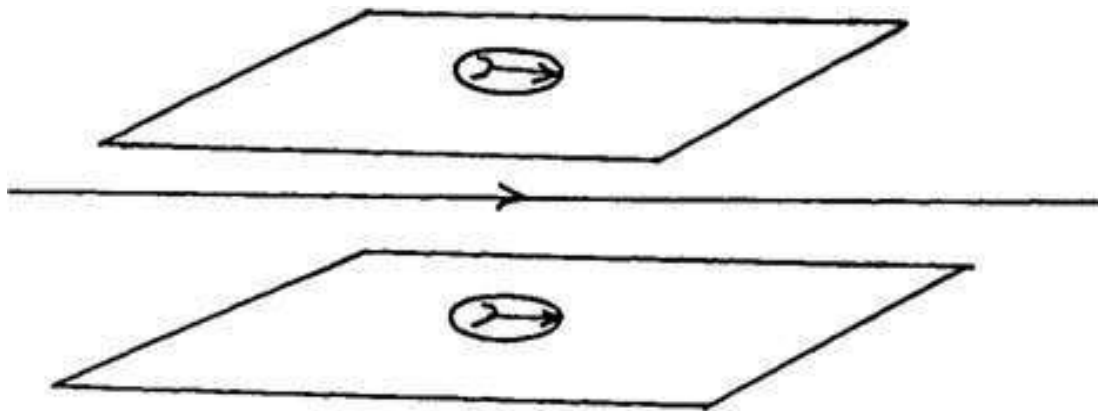
Figure 3



5. State two uses of the pulse –echo technique. (2marks)

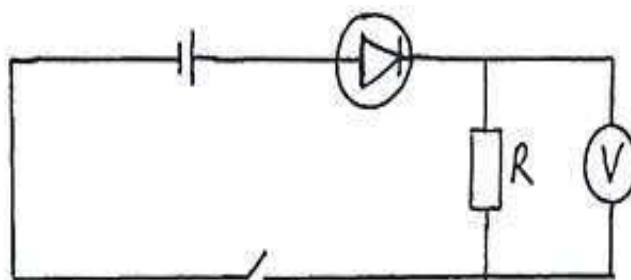
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6. The figure below shows a current carrying conductor passing between two cardboards. Show the direction of the deflection on each compass on the cardboard. (2marks)



7. In the figure below, the voltmeter shows a reading when the switch S is closed.

Figure 4.



When the cell terminals are reversed and switch closed, the voltmeter reading is zero. Explain these observations. (2 marks)

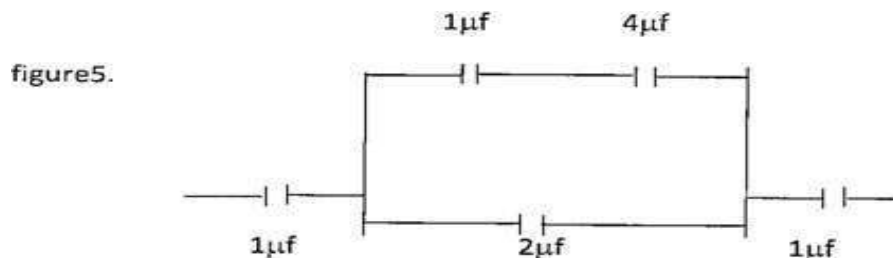
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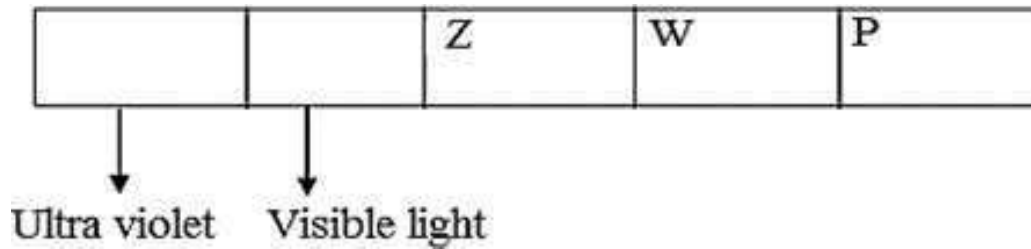
8. Cheryl had eight dry cells each of 1.5V. She arranged the cells to light a 12V bulb but realized her set up could only produce 7.5 V. In the space below draw the cell connections that she arranged.

9. The figure below is an arrangement of five capacitors.



Calculate the resultant capacitance.

10. The figure below shows part of the electromagnetic spectrum.



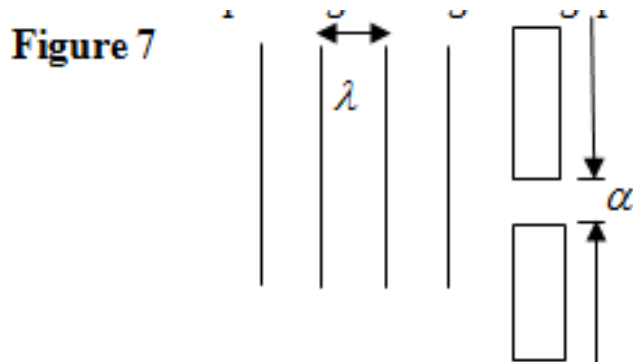
Identify radiation W. State one of its uses. (2marks)

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11. The figure below shows a series of plane waves approaching a gap. Complete the diagram to show the wave after passing through the gap if



12. The diagram below shows a method of magnetization.

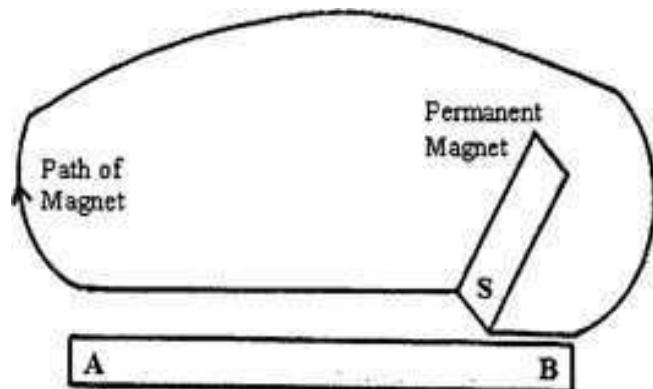
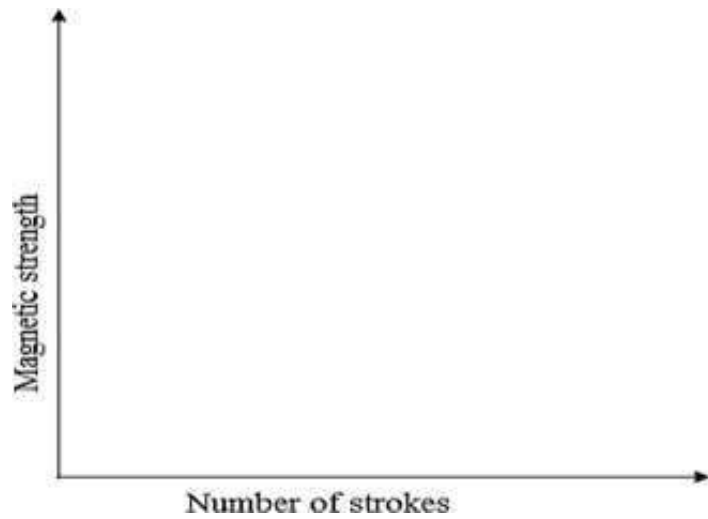


Figure 8.

Ferromagnetic material is being magnetized sketch a graph to show how the strength of a magnetic being created varies with the number of strokes.



13. The figure below shows a ray of light incident on a glass air-interface.

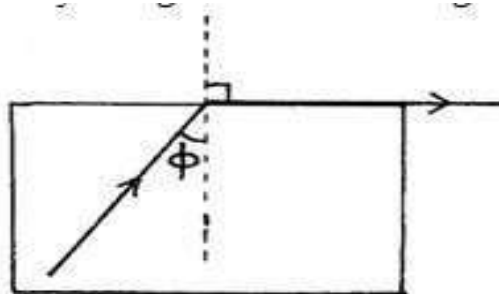


Figure 9

Given that the relative index of glass is 1.48, determine the value of ϕ