

NAME.....ADM NO.....

SCHOOL.....SIGN.....

232/2

PHYSICS

PAPER 2

TIME :2 HOURS



KCSE ACHIEVERS PREDICTION



Kenya Certificate of Secondary Education

INSTRUCTION TO CANDIDATES

- 1 write your name and admission number in the spaces provided.
- 2 Answer all the questions both in section A and B in the spaces provided below in each question .
- 3 All working must be clearly seen, marks may be awarded for correct steps even if the answers are wrong .
- 4 silent electronic calculator and KNEC mathematical table may be used.

For examiners use only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE SCORE
A	1 12	25	
B	13	11	
	14	12	
	15	13	
	16	12	
	17	7	
TOTAL SCORE		80	



SECTION A(25 MKS)

1. State two properties of magnetic field lines around a bar magnet. (2mks)

2. Recharging is one of the practices of maintenance of accumulators; state two measurements which need to be taken to help you decide when the accumulator is ready for recharging. (2mks)

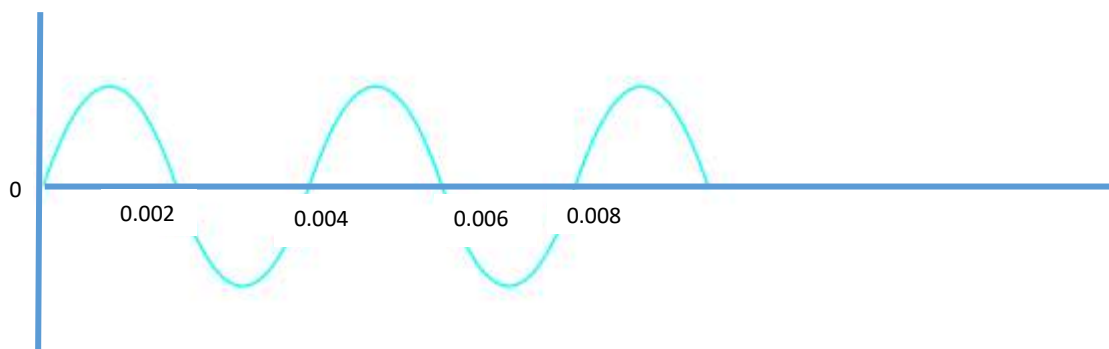
3. Two students stand 300m from a wall. One bangs two pieces of wood together and at the same time the other starts a stop watch. They hear an echo after 1.8 seconds. Determine the speed of sound in air. (3mks)

4. State one use of gold leaf electroscope. (1mk)

5. Arrange the following electromagnetic waves in order of increasing frequencies
Infrared, X rays ,visible light, Radio waves . (1mk)

6. The figure represents displacement time graph for a wave.





Determine the frequency of the wave.

(3mks)

7. Describe the change on the image formed when the following adjustment are made on a pinhole camera:

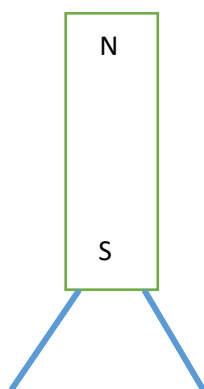
(a) Size of the hole increased

(1mk)

(b) Length of the pinhole camera increased

(1mk)

8. Two pins are hanging from a magnet as shown in the diagram below.



State and explain why they do not hang vertically downwards

(2mks)

9. The figure below shows magnetic field pattern due to current flowing through a conductor





Using $\cdot$ or $\times$ State the direction of electric current in the conductor. (1mk)

10. (a) What do you understand by the label 100W, 240v indicated on an electric bulb? (1mk)

(b) What property does a fuse wire have that makes it suitable for protecting excessive current in the circuit? (1mk)

(c) What is the operating resistance of an electric lamp rated by manufacturer at 80W , 240 V (3mks)

11. Sound waves cannot travel through vacuum. Explain. (1mk)

12. Other than the same frequency, state other two conditions for formation of stationary wave. (2mks)

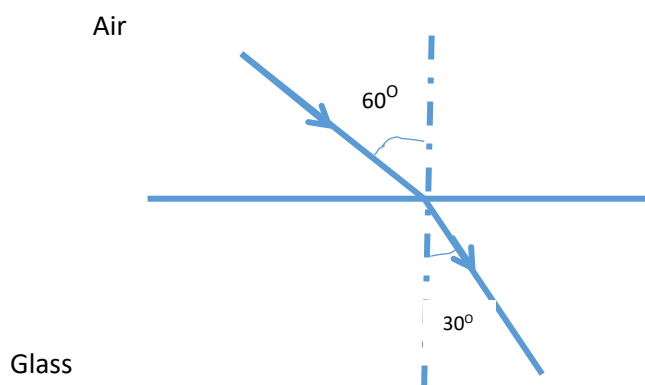
SECTION B (55 MKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

13 (a) State Snell's law. (1mk)

(b) The figure below shows a ray of light incident on air glass interface. Study it and answer the questions that follow.





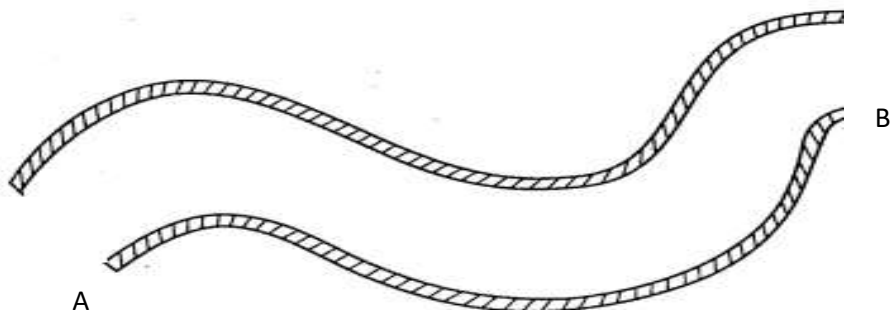
From the diagram determine

(i) The refractive index of the medium (2mks)

(ii) The critical angle of the medium (3mks)

(c) State two conditions under which total internal reflection occurs. (2mks)

(c) The figure below shows an optical fibre. Study it and answer the questions that follow.



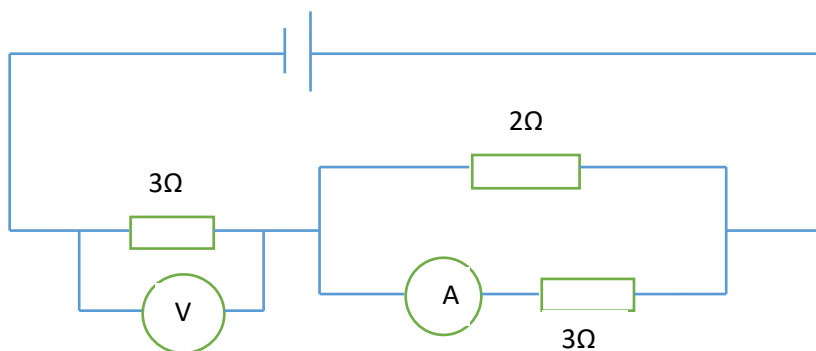
(i) Explain how the ray of light is transmitted from one point of incidence until it emerges at B through the tube. (1mk)



(ii) State two advantages of using optical fibre in communication. (2mk)

14. (a) State two physical quantities that affect the electrical resistance of a conductor at a constant temperature. (2mks)

(b) The cell in the figure below has an emf of 1.8V and negligible internal resistance.



Determine

(i) Total resistance in the circuit. (3mks)

(ii) Current in the circuit. (2mks)

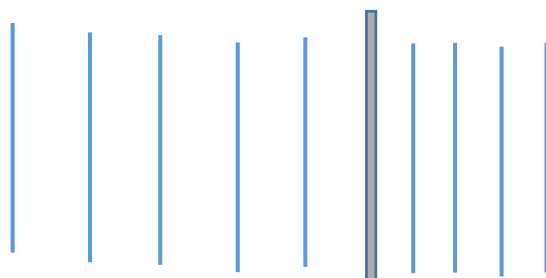
(iii) Reading of the voltmeter. (2mks)



(iv) Reading of the ammeter.

(3mks)

- 15 (a) Plane water waves produced in a ripple tank are passed from a region of deep water into a region of shallow water. The figure below shows the top view of the tank .



(i) State what happens at the boundary to the frequency of the waves.

(1mk)

(ii) The waves have a speed of 24cm/s in the deep water. Consecutive waves crests are 0.08M apart in the deep water. Calculate the frequency of the source producing the waves.

(2mks)

(b) Explain how an increase in temperature affects the speed of sound in air.

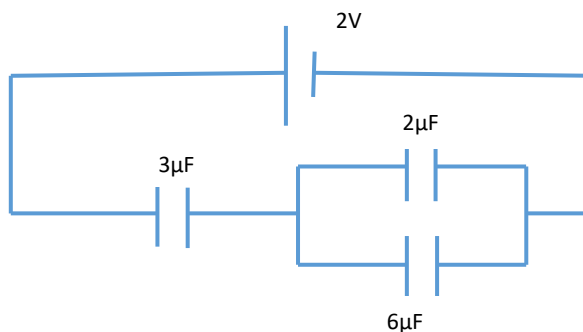
(1mk)

(d) State one application of a capacitor.

(1mk)



(e) The figure below shows three capacitors connected in a circuit



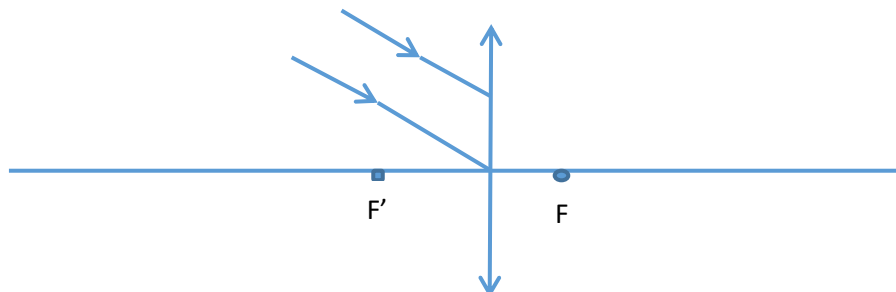
Calculate

- (I) The total capacitance of the circuit. (3mks)
- (II) The charge stored in the circuit. (2mk)
- (III) The potential difference across the 2μF capacitor. (3mks)

16. (a) Define the following terms as used in mirrors

- (i) Principal axis. (1mk)
- (ii) The pole. (1mk)

(b) The figure shows two rays of incident on a converging lens.



Complete the ray diagram to show the rays after passing through the lens. (2mks)

(c) (i) State two differences between the human eye and the camera lens. (2mks)

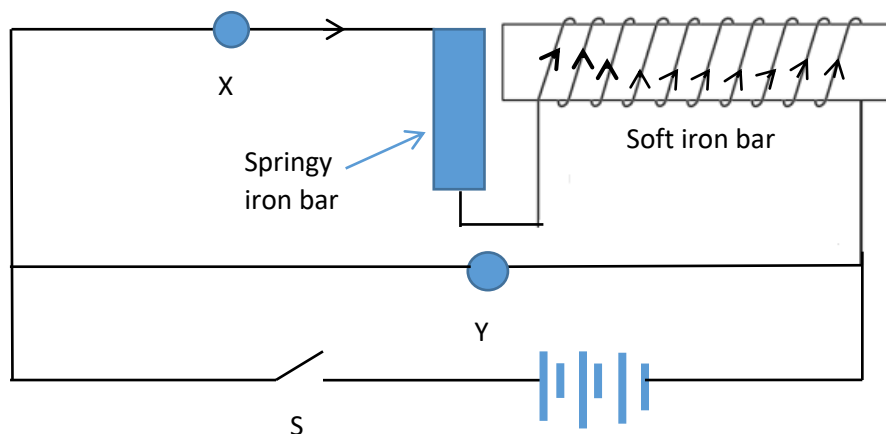
(ii) State the name of the part of the eye that enables the lens to focus images of objects at different distances. (1mk)

(f) An object which is 3cm tall is placed 20cm from a converging lens of focal length 12 cm. Calculate:

(i) The distance of the image from the lens. (3mks)

(ii) Magnification. (2mks)

17 (a) The figure below shows a circuit with two bulbs X and Y study the diagram and answer the question that follow.



Explain the following observations

(i) When the switch S is closed, bulb Y lights continuously. (1mk)

(ii) When the switch S is closed bulb X flickers. (3mks)

(b) You are provided with the following apparatus; a white screen, a metre rule, and a concave mirror and a mirror holder. Using the apparatus describe an appropriate method to determine the focal length of the mirror. (3mks)

