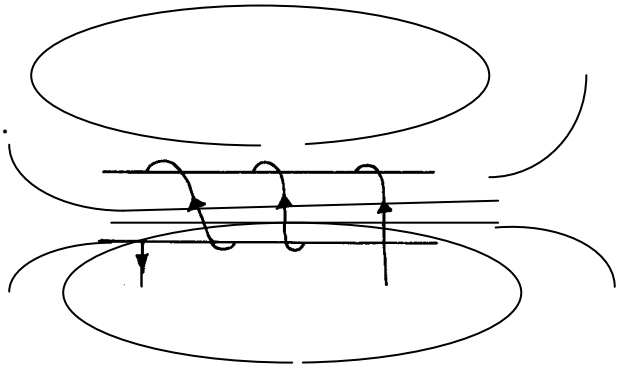
232/2 PHYSICS (2018)
KCSE *Trial Exam* ***MARKING SCHEME***

1.

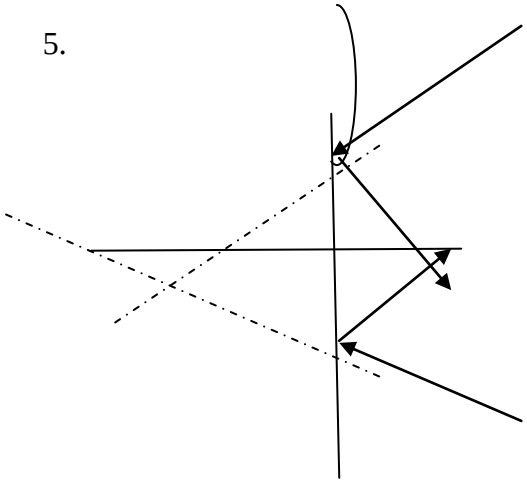


2. SIMILARITIES
-choroid(black pigment) / painted black inside
-convex lens
-Retina/film screen for the image
-iris/diaphragm controls light entering
DIFFERENCES
-rigid/flexible
-zooming/accommodation
-fovea is fixed/film is removable
-eye fluids refract/air only in camera

3. –frequency

4. Speed = distance /time
= 2(200)/1.16
=344.8 m/s

5.



Field of view wide

6. V =IR
Current thro` 3 ohms
I =12/7 Amps
Therefore = 12/7X(3)
= 5.14 V

7. P.E → K.E - → Electrical

8. UV Light, X-RAYS ,Gamma rays

9. Solar

10. Hydrogen gas forms around copper plates insulates blocking movement of current

11. Magnifies images, erect images

12. Only Real images caught on screen

13. B
Requires a smaller current to reach saturation
Easily magnetized and demagnetized

14.
a. Interference of two waves constructively or destructively(adding up of waves amplitudes)
   i. Coherent –identical waves(same phase relation) same wavelength ,same amplitudes, same frequency
   ii. $\Delta = \lambda$

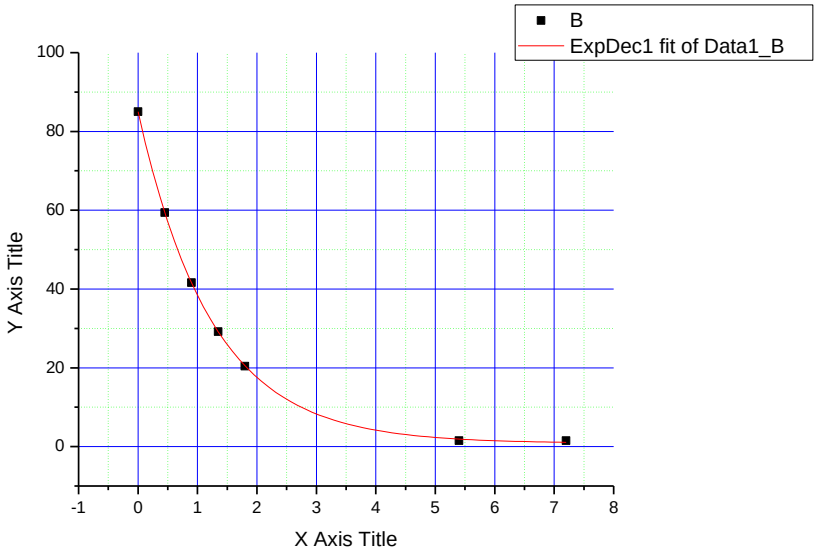
15.
i. $I = ne$
$n = (0.5x10^{-3})/1.6 \times 10^{-19})$
$= 3.125 \times 10^{15}$ electrons per second

ii. $P = VI$
$= (120 \text{ X } 10^3 \text{ X } 0.5 \text{ X } 10^{-3})(0.01)$
0.6J/s

iii. 59.4J/s

iv. $\lambda_{min} = hc/eV$
$=(6.63 \times 10^{-34} \times 3 \times 10^8)/(120 \times 10^3 \times 1.6 \times 10^{-19})$
$= 1.04 \times 10^{-11}$m

16.



b) 1.50 mm

c) I fission
II 56, 90
III the slow down the neutrons to thermal limits
The overall amount of uranium must be greater than the critical size
Fusion produces more: 2000MW can be produced by 0.5 kg of deuterium and 1.8 kg of lithium per day.

d) Is the time taken for the number of atoms of that isotope to decrease to half the initial number?

17.

a. Is the opposing to flow of current in a substance

b. Potential difference is shared equally i.e 240/40 = 6V
V = IR $12 = (250 \times 10^{-3})(40R)$
$R = (12)/(40 \times 250 \times 10^{-3})$ R = 1.2 Ohms

c. X – Voltmeter, Y – milliameter, Z – Diode

d. Barrier potential=0.7V
An applied more than 0.7V causes a current to flow through the diode
The applied voltage opposes the barrier created at the junction as majority charge carrier cross
I = V/R R = V/I =0.7/0.1 =7ohms

18.

a. 6μF, 1.5μF

b. 6V, Q = CV = 6x6μ =36μC

c. E =0.5QV $= 0.5 \times 6 \times 10^{-6} \times 6$ $= 18 \times 10^{-6}$J