KENYA NATIONAL EXAMINATION COUNCIL
REVISION MOCK EXAMS 2016
TOP NATIONAL SCHOOLS

MOI GIRLS ELDORET HIGH SCHOOL
232/1
PHYSICS
PAPER 2
MARKING SCHEME

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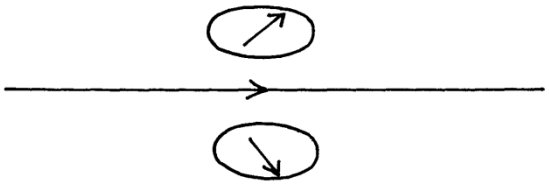
MOI GIRLS ELDORET KCSE TRIAL AND PRACTICE EXAM 2016

Paper 2

MARKING SCHEME

1.

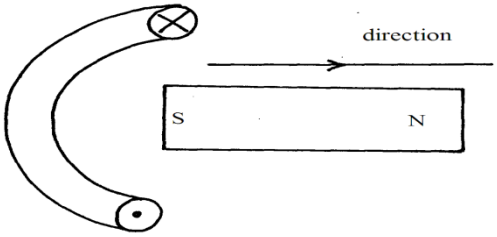


;✓

·✓

2. The charged point conductor repels positive ions of the air while negative ions are attracted;✓
   The positive ions dnft. Towards the flame forming an electric wind which drags the flame with it; ✓
3. Metre bridge has no zero error as it depends on balancing point; ✓
4. Frequency of the source; ✓
5. Total units. $= \frac{1200}{1000} x30 = 36Kwh;$ ✓
   Cost =36x8
   =Ksh 288; ✓
6. Images are virtual; ✓ or upright or erect any 1 mark.

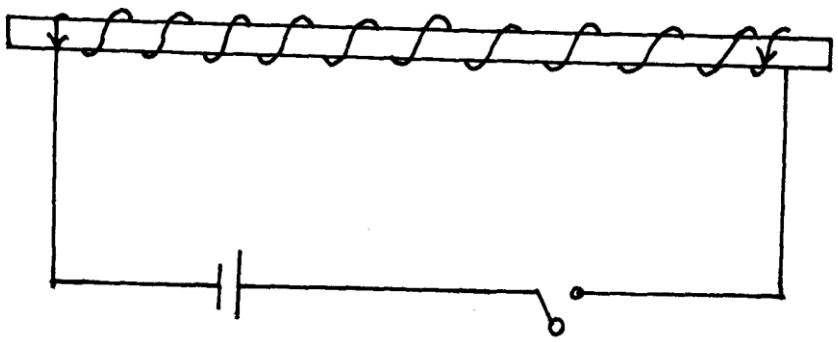
7.



8. a) Peak value =4cm x $\frac{100}{1000}$;= ✓
   =0.4V; ✓
   b) Period, T = $8x\frac{0.8s}{1000} = 0.0064s$; ✓
   frequency, f $= \frac{1}{0.0064} = 156.25Hz;$ ✓

9. Inttrisic semi-conductor -their conductivity is enhanced by temperature only; ✓
   Extrinsic semi conductor -Their conductivity is enhanced by doping ;✓
   An example of intrinsic is silicon and germanium; ✓ ½
   An example of extrinsic is P-type semi-conductor and n-type semi-conductor; ✓ ½

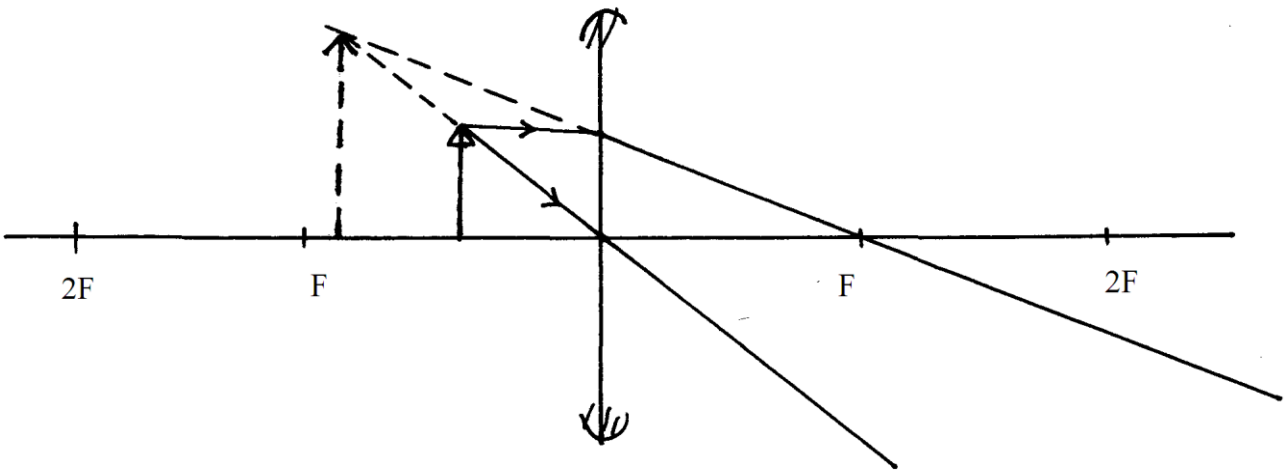
10.



;✓ Correct circuit connection by closing the switch current flow as shown and AB becomes magnetised

11. Angle of incidence =Angle of reflection;✓

12.



13. A is the mass number while z is the atomic number; ✓

14. a) Hard X-rays;✓

b) i) A focusing cathode, B-Electron beam, C-copper anode, D- lead shield ;✓ ½ each.

ii) Filament is heated it heats the cathode and electrons are emitted thermionically; ✓ emitted electrons are accelerated to the target by accelerating potential; ✓upon hitting the target, X-rays are produced;✓

iii) The moving electrons possesses kinetic energy;✓ most of this energy is converted into heat when the electrons meet the target.

iv) X-rays are able to ionise the air particles; ✓ ionises air particles are used to discharge cloth materials to remove static charges; ✓ the static charges on the cloth can cause fire outbreak; ✓

v) $\lambda = \frac{C}{f}$

$$\frac{3.0x10^{8}}{1.0x10^{+16}} = 1.0x10^{-11}\text{m};\ \checkmark$$

Also $\lambda = \frac{C}{f}$

$$\frac{3.0x10^{8}}{1.0x10^{+19}} = 1.0x10^{-11}\text{m};\ \checkmark$$

Range $\lambda \pm 5$ $1.0x10^{-11}$m to $1.0x10^{-8}$m;✓

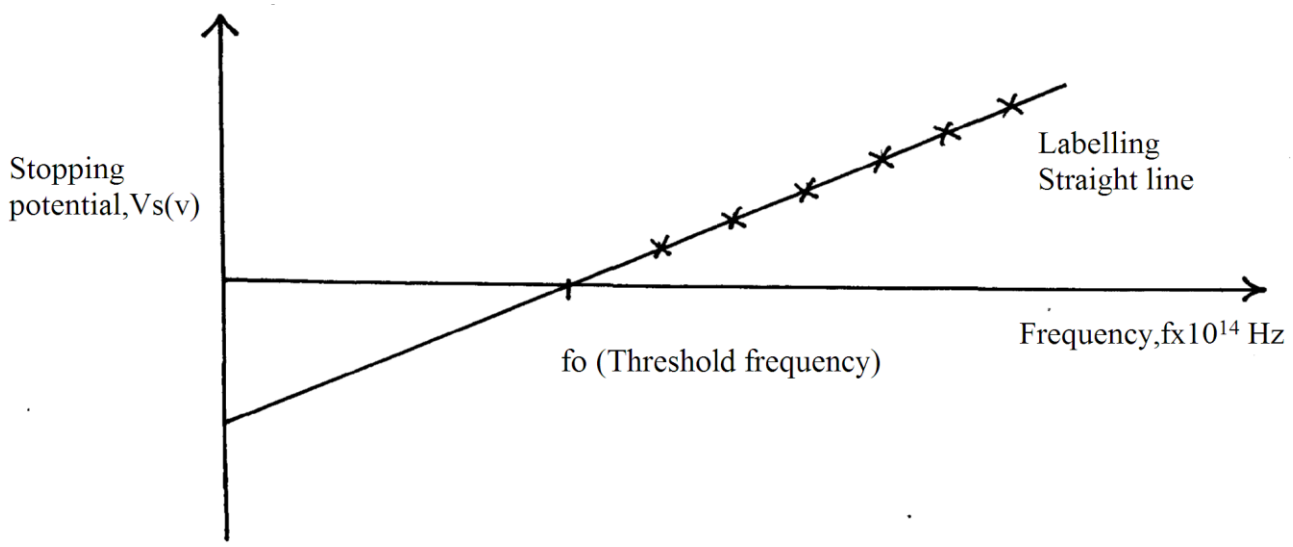
15. a) Is the process by which electrons are emitted from metal surface when irradiated with UV radiations of sufficient energy; ✓

b) i) To remove impurities from the metal surface for photo electricemission; ✓

ii) Gold leaf ectroscope diverges diverges /rises; ✓

-Electrrons are emmited from zinc surface which make electrons to move from gold leaf and stem making them positive and like charges repel; ✓ electrons become positively charged; ✓

c) i)



ii) Stopping potential is the potential at the anode that completely stops the electrons from getting to it;✓

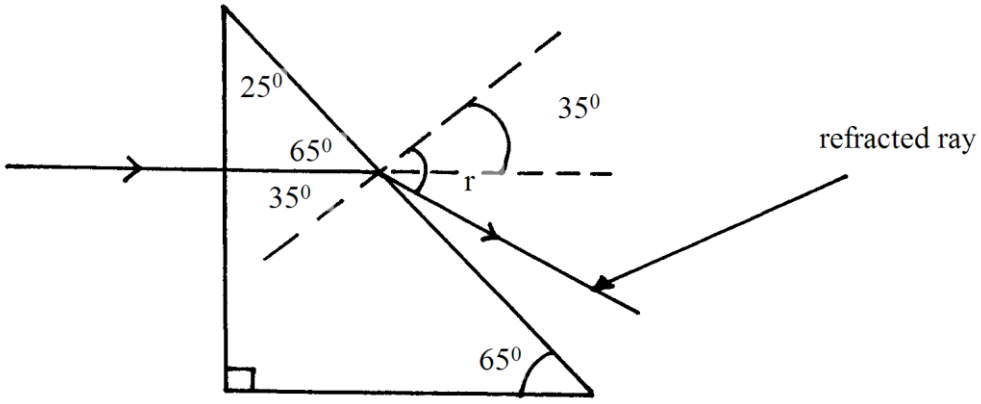
d) Max K.E = eVs;✓

$=1.6 \times 10^{-19} \times 0.5$; ✓

$=1.2 \times 10^{-19}$; ✓

16. a) Ratio of sine of angle of incidence in air to sine of angle of refraction in denser medium is always a constant ; ✓

b i)



ii) $\frac{\text{Sind}}{\text{Sinr}} = n$;✓

$\frac{\text{Sin } 2\sqrt{5}}{\text{Sin } 25} = 1.5$;✓

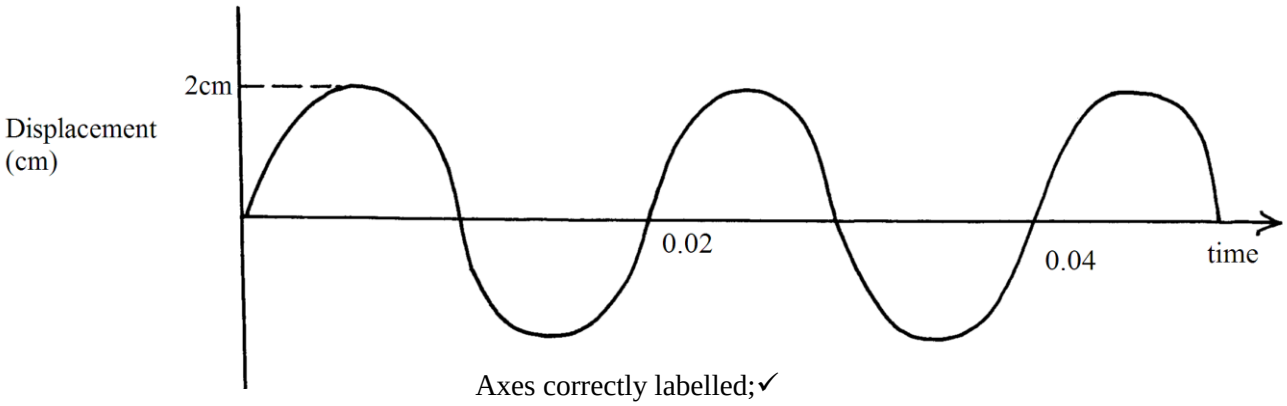
r $=59.4^0$; ✓

c) Angle of deviation =59.4=35; ✓

$=24.4^0$;✓

d) is because angle of incidence from dewer glass is less than the critical angle for glass;✓

17. a)



Axes correctly labelled;✓
2 complete circles:✓
T= 1/50 = 0.025; ✓correct time indicated;✓

b) Electromagnetic waves do not require a material medium ; ✓ while mechanical waves require material medium for their transmission; ✓

c) $V = \lambda f$; ✓

$=21x10^{3}$ x 7.5 x 10^{-2}

=1575m/s;✓

2d = Vxt;✓

$d = \frac{1575 x 0.4}{2}$

315m; ✓

18. a) Iron keeps from closed loops;✓ it makes the end of the bar magnets not to lose their magnetism by self demagitisation;✓

b) when a magnet is being magnetised, the dilopes are arranged in the domains facing in all directions;✓ as magnetising process continues the dipole in all the domain aligns themselves in same direction such that further magnetisation has no effect; ✓

c) i) When current is switched on electromagnet A becomes magnetised; ✓ B get attracted towards A and the horn makes sound; ✓ circuit is broken at C, Electromagnet loses magnetism and contact is again made, process repeats itself;✓

ii) By increasing amount of current in circuit;✓
By using a U-shaped electromagnet; ✓