**PHYSICS**

**232/2**

**PAPER 2 – 2019 vb**

**MARKING SCHEME**

**WANGU CLUSTER EXAMINATION**

**KENYA CERTIFICATE OF SECONDARY EDUCATION**

1. A virtual image is an image that cannot be formed on a screen.
2. I) soft magnetic material – easily magnetised and demagnetised hard magnetic material- difficult to magnetise and demagnetise.

ii)

1. Divergence reduces /leaf collapses due to the charges are /concentrated on sharp pursuit and discharges the electroscope.
2. I) X – south pole Y- north

Ii – increasing size of current

* Use of u- shaped bar
* Increasing number of turns

1. Two correct rays

* object

1. I) G.M.T/cloud chamber/ photographic film.

ii) visible light

1. 0.8/2 = 0.45

F = 1/T = 1/0.4

F = 2.5 Hz

1. I) current flows in y

ii) p.n function y is forward bias

1. n= 1/sin c sin = 1/1.48

= 42.51ᵒ

1. a – 234

b - 82

1. reflected sound
2. increasing area of overlap

* decreasing separation distance
* use of electric material between the plases.

1. I) 1/f = 1/r +1/4 -1/10 = 1/v +1/15

-1/10 – 1/15  = 1/v 1/v = -f/30 = -1/6

V= -6CM

II) M = V/4 = 6/15 = 0.4

OR = -6/15  = 0.4

b) i) short slightness

ii) use of diverging lens

c) i) rays must be moving from a denser medium to a less dense medium.

The angle of incidence in denser medium must be greater than critical angle.

ii) total internal reflection

* Right angle triangle indicated

1. a) The law states that current flowing through a conductor is directly proportional to p.d provided that temperature and other physical condition are kept constant.

b) i) 1/R  =1/2 + 1/2 +1/3  = 0.75

RT= 4 + 0.75 +0.25 = 5

II) FT = VT  = 12 = 2.5A

RT 5

V = 2.4 X 0.75 = 1.8V

C) To reduce power loss

d)i) F – ring main circuit

ii) A –neutral wire

B – live wire

ii) T o breaks circuit in excess current

iv) Earthing prevents one from getting electric shock

1. a) Lenz’s law states that the direction of induced e.m.f is such that the induced current it causes to flow produces a magnetic effect that apposes change producing it.

b) i) The pointer of galvanometer deflects to maximum and back to zero.

- When switch is closed. Magnetic flix change in posy primary coil links B (sec) inducing current in B.

II) The pointer of galvanometer/ deflects to max in opposite direction and back to zero.

c) i) Primary coil are thicker than sec coils due to higher current in the primary coils

i) NP = VP 400 = 220

NS V3 1600 VS

VS  =880V

III) P.O = VS IS

1000 = IS X 880

IS = 1.136a

iv) P.I = vp IP

1000 = Ip x 220

IP = 4.545 A

1. – a) (i) - this is minimum energy of radiation required to dislodge an electro from the metal surface.
2. – intensity of mediation

-Work function /type of metal

- frequency of radiation

b) K.E = E –W

= hf – wo

= 6.63 x 10-34 x 3.0 x 1015 - 6.4 x 10-19

K.E = 1.989 X 10-18 – 6.4 X 10 -19

= 1.3 49 X 10-18 J

e)No. Of half life = 390 – 3 half lifes

130

1 x 1020 ------- 0.5 x10 20 -----------0.25 x 1020 ---------0.125 x 1020

No decayed = (1 – 0.125) x 1020

= 0.875 x 1020 atoms = 8.75 x1019 atoms

1. Alpha radiation

* It is massive and causes heavy ionisation.

1. A) i) Grid – controls the intensity of the electrons/brightness of the spot on the screen
2. Variable p.d – focus / converge the electron beam onto the beam.

b> i) T = 4 x 20 = 80ms

f = i/t = 1/80 x10-3 = 12.5Hz

ii) peak voltage = 200 x 1 = 200v

c.i) B – anode

ii) it has a high melting point

1. Some of electrons k.e is converted to heat energy
2. The intensity of x-rays increases