**MWAKICAN MARKING SCHEME PHYSICS FORM 3 TERM 3 2016**

1. (a) The ammeter reading decreases.

(b) The resistance of the metal increases with increase in temperature.

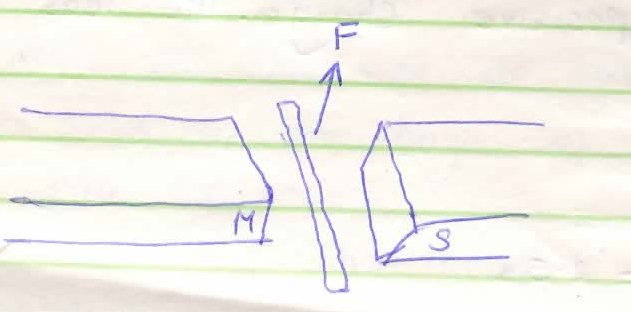
1. 5 + 1 = 360

Ѳ

Ѳ = 360 = 600

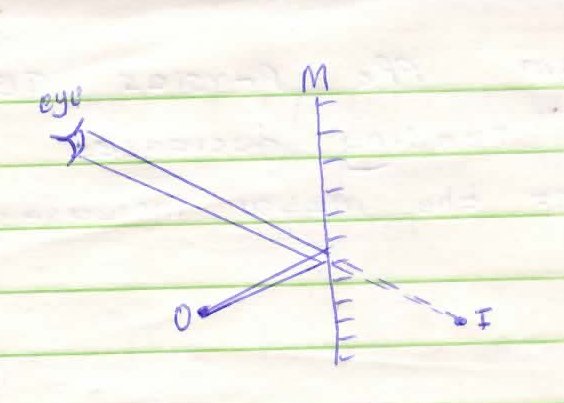
6

1. (a)



(b) - Direction of magnetic field.

* Direction of current in the conductor.



1. On earthing negative charges are repelled to the ground. When the rod is withdrawn, the leaf is left with a net positive charge. The leaf rises.
2. Speed = 2d

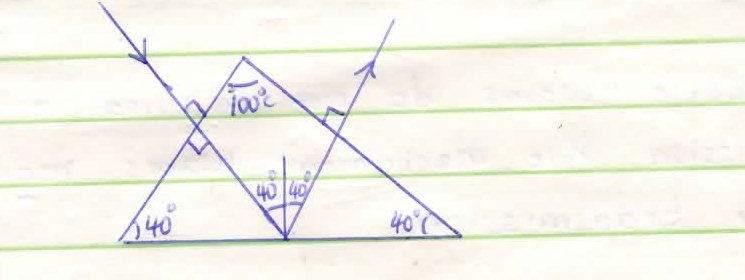
t

t = 500 = 2.5 s

20

Speed = 2 x 400 = 320ms-1

2.5

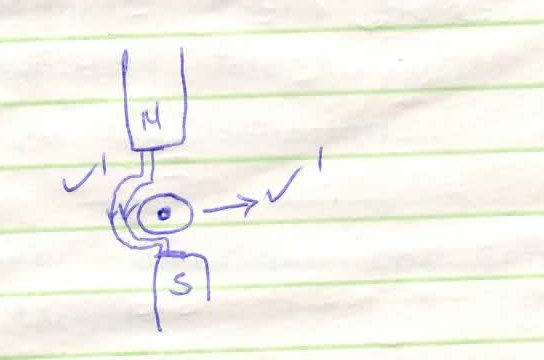


1. Hydrogen gas bubbles at the cathode.

- White deposit forms at the plates.

- Relative density of the electrolyte drops.

1. (a)(i)



1. From N - S ; around conductor
2. - Nail is hammered in North – South direction.

- Earth’s magnetic field aligns dipoles of the nail in one direction.

1. (i) Focal plane is a plane passing through the focal point and perpendicular to

the principal axis.

(ii) Produces as - Upright image

- Magnified image

- Virtual

**SECTION B**

1. a.
   * 1. Frequency not affected
     2. Speed reduces
     3. Wavelength reduces
   1. Stationary wave Progressive wave

* No energy is transferred from source - energy is transferred from source
* Wave form does not appear to move - wave form moves away continuously
  1. (i) Time taken to make one complete oscillation

10 x 10-2 seconds

(ii) F = I

T

I

10 x 10-2 = 10Hz

(iii) V = λf

X = v

f

= 200 = 20m

10

* 1. Mechanical waves require material medium for transmission but electromagnetic waves do not

1. a.

* Rectification smoothing circuits
* Turning circuits
* Camera flash

(any one correct)

b.i.

1.6+3.2=4.8µF

ii. Q=CV

Charge on

=1.96 X

iii. P.d on 5µF =

iv. Energy = ½ CV2

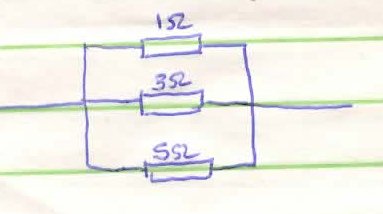
= ½

=3.75 X

c. - Area (cross sectional area)

- length of a conductor

1. (a) A current flowing through a conductor is directly proportional to the potential difference across it provided the temperature and other physical conditions are kept constant.

(b) 1 - 1 + 1 + 1 = 5 + 15 + 3 = 23

RT 3 1 5 15 15

RT = 15 = 0.6522 Ω

23

C(i) 3 + 20 x 30 = 3 + 60 = 4.2Ω

20 + 20 50

(ii) I = V = 1.8 = 0.428 A

R 4.2

(iii) V = 1R = 0.428 x 3 = 1.2857 V

1. a) The ratio of the sine of angle of incidence to the sine of the angle of refraction is constant.

(b) P = Real depth

Apparent depth

1.56 = 10

X

1.56 x = 10

X = 10 = 6.410

1.56

Vertical displacement = 10 - 6.410 = 3.59cm

(c)(i) n = Velocity of light in vacuum

Velocity of light in medium

n = 3.0 x 108

1.94 x 108

= 1.546

(ii) I = 1.546

Sin C

Sin C = 1

1.546

C = 40.300

(d) - Minimal energy loses due to total internal reflection.

- Large quantity of data can be converted per second or unit time.

- Its flexible.