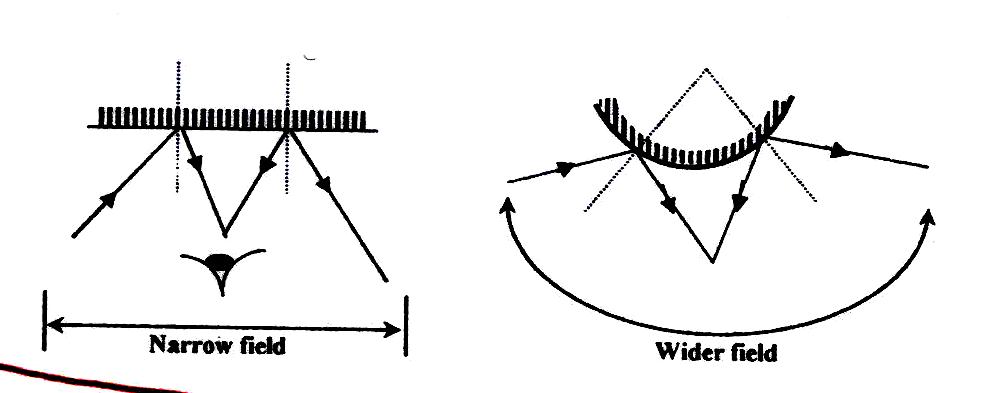
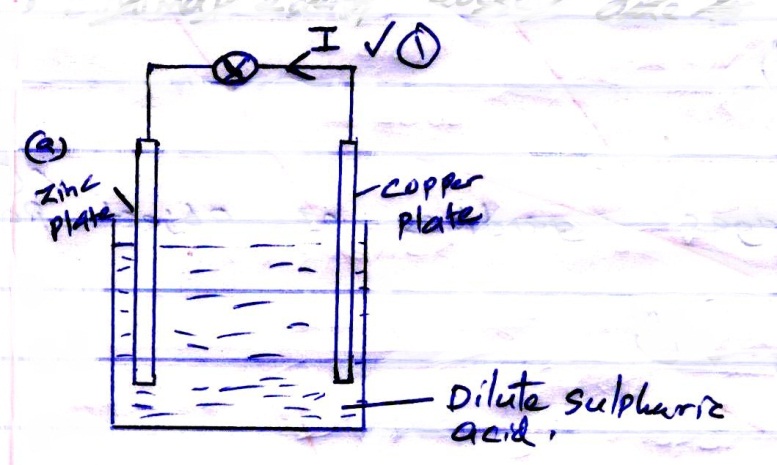
**MARKING SCHEME - PHYSICS PAPER 2**

**MARCH/APRIL, 2021**



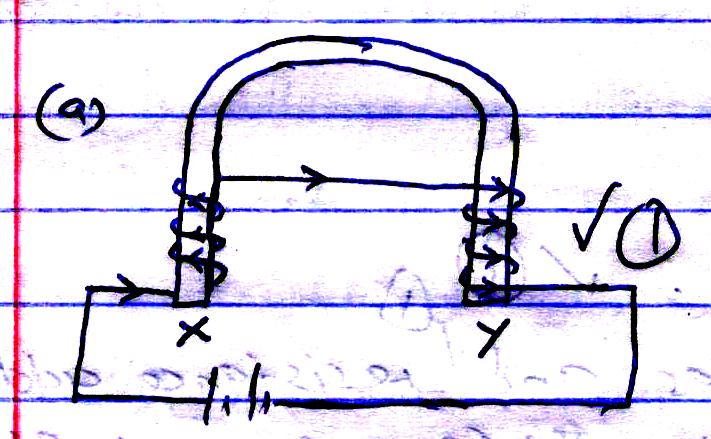


1. They attract. √1
2. (a)



(b) The cell suffers polarization and local action.√1

1. (a)



(b) North pole√1

1. V = √

330 =

d =

d = 356.4m

330 =

d = √

= 783.75m

Distance between the wall = 356.4 + 783.75

= 1140.15m √

1. (i) Microwaves, infrared, visible light, X-rays.

(ii) Observing objects

Taking pictures.

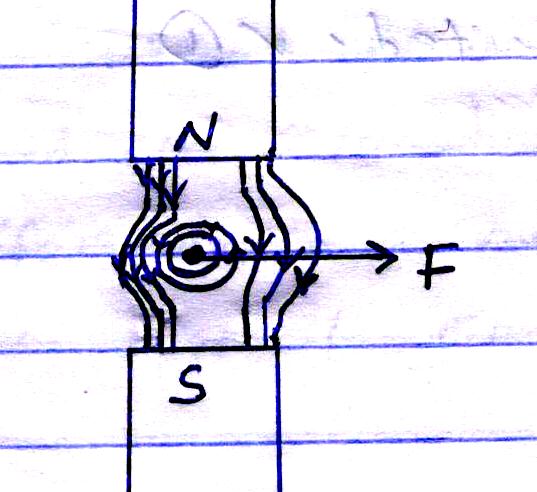
1. P = v2/R

40 = (240)2/R

R = 57600/40

= 1440Ω





Field – 1 mark (N – S; around conductor)

Force – 1 mark

1. (i) Bulbs X and Y light dimly. √1

They are connected in series and resistance add up.

Or Bulbs X and Y light with same brightness. The same current flows through them.√1

(ii) Bulb X lights brightly while Y does not.

Bulb Y is short circuited. √1

1. Air is warmer at upper layer. √1

Velocity of sound wave fronts will be higher in the upper layer than in the lower layer hence the waves will be refracted downward.

1. - More information can be transmitted at the same time.√1

* Flexible.

1. Circuit 1

E = V + Ir

E = 0.6 + 0.6r (1) √

E = 7.2 + 1.8r (2)

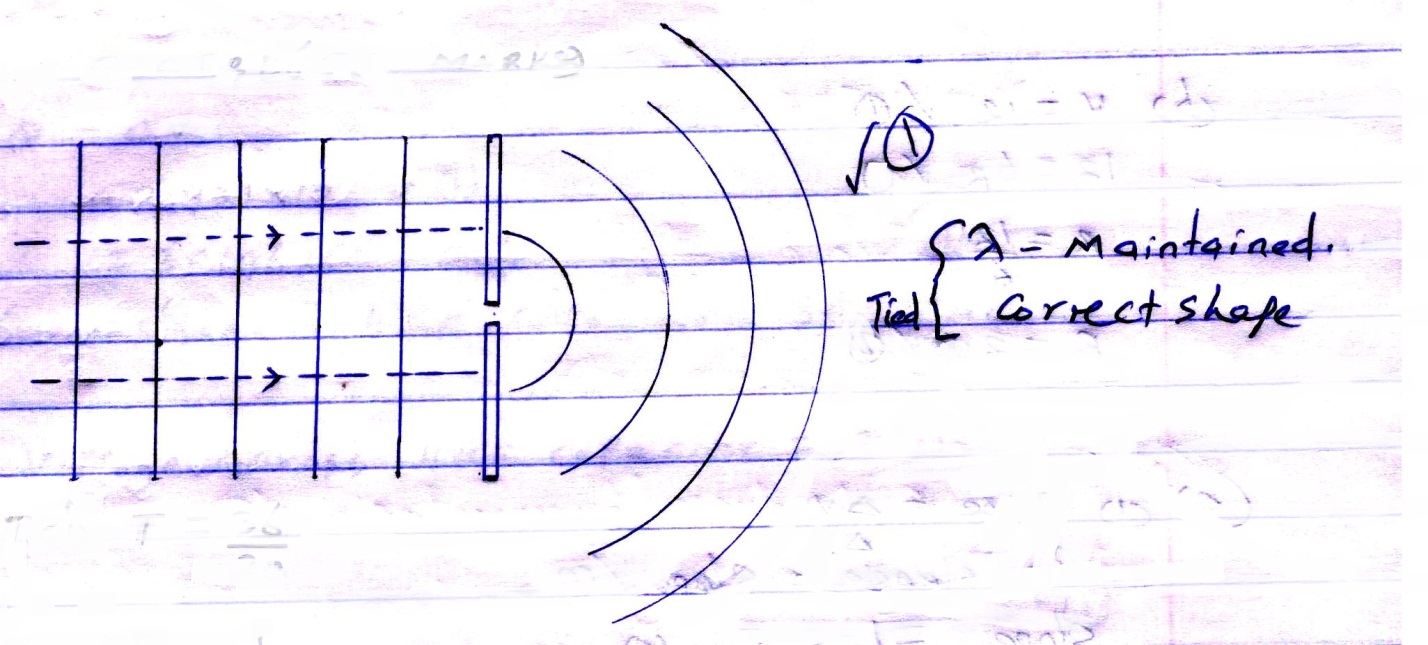
Equation 1 & 2

1.2r = 6.6

r = 5.8Ω √

**SECTION B – 55 MARKS**

1. (a)



1. I (i) T =

ƒ =

ƒ = √1

= 0.5556Hz √

(ii) v = ƒλ √

= 0.5556 x √1

= 0.1111m/s √1

1. Waves of shorter wavelength are produced /more waves are produced (shorter wavelength).

c) (i) It provides coherent sources.√1

(ii) Alternating dark and bright fringes.√1

Dark fringes are due to destructive interference√1 while bright fringes are due to constructive √1 interference

(iii) (I) Increased distance between the fringes. √1

(II) Fringes will be closer.√1

1. (a) (i) Light must travel from optically denser medium to less dense medium.

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

(b) (i) = n

n =

n = 2.080

(ii) sin C = Allow T.E (Transfer of Error)

sin C =

C = sin-1 0.48077

C = 28.740

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

(b) v = IR √1

12 = 6R √1

R =

R = 2Ω √1

(c) (i) Slope =

Resistance = slope √1

Slope = √1

=

= 50Ω

Resistance = 50Ω √1

(ii) It obeys Ohm’s law √1

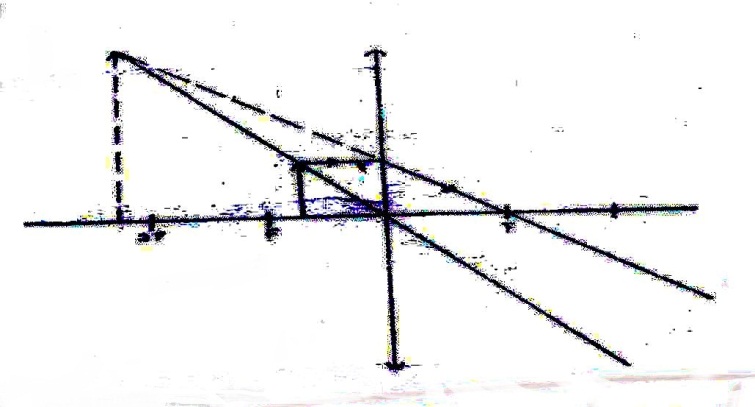
Current is directly proportional to voltage √1

(d) Cross-section area /thickness of √1 the conductor.

Length of the conductor √1

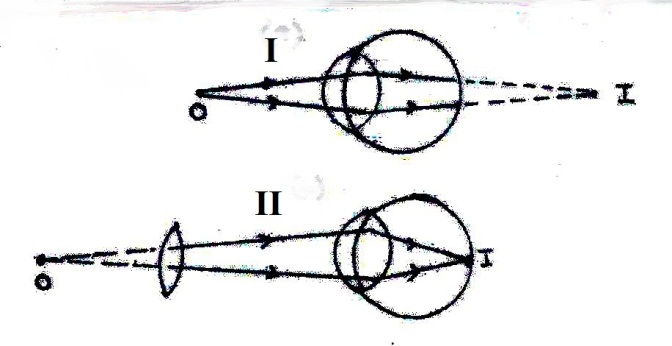
Temperature (Any 2 correct)

1. (a) (i)

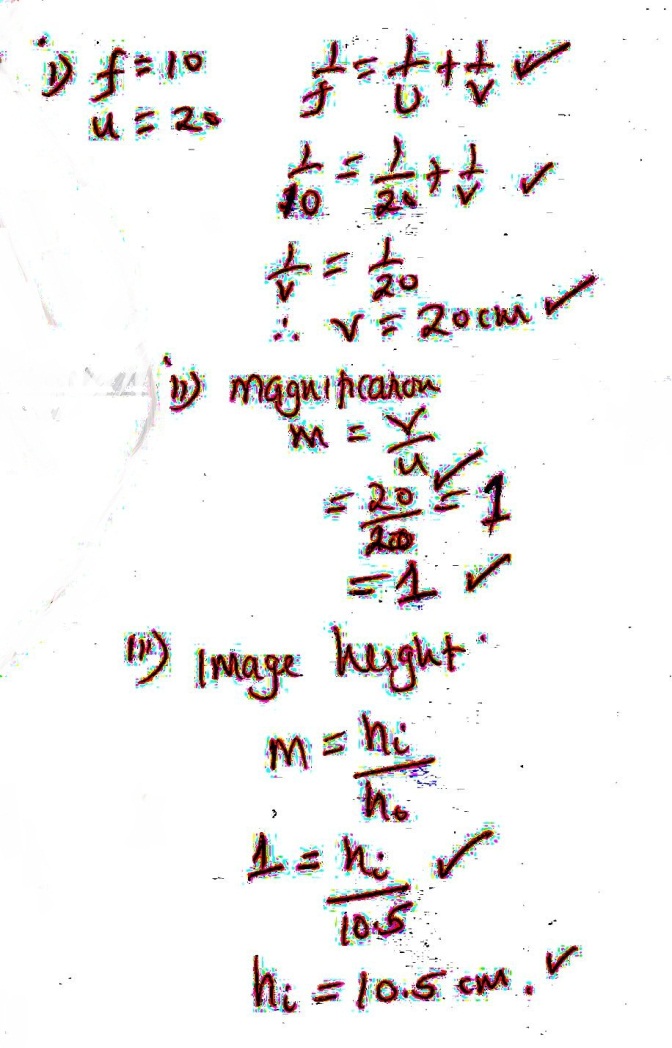


(ii) As a magnifying glass

(b)



(c) (i)



1. (a) Charge per unit voltage √1

(b) Area of overlap √1

Distance of separation √1

Type/Nature of dielectric (Any 2 correct)

(c) (i) CP = 5 + 6

= 11μF √1

Cλ = √1

Cλ = 2.933μϝ √1

(ii) Q = Cv

= 2.933 x 12 √1

= 35.196μc √1

Charge stored in 4μϝ capacitor = 35.196μc

(iii) Voltage across 4μϝ capacitor =

= 8.799 √1

p.d across 5μϝ capacitor = 12 – 8.799 √1

= 3.201 √1

(d) - In rectification to smoothen output

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