**PHYSICS**

**232/2**

**MARKING SCHEME**

**TERM 1 2019**

**SECTION A (25 MARKS)**



Rays and all angles shown 3 marks

1. *Soft iron became induced magnet and attracts back the razor*

*Wood is non-magnetic material hence does not attract the blad*

1. The charges that accumulates on the body of the car by rubbing with the air leak to the earth through the man while he stept out
2. A Tv tube use magnetic coils for deflection of an electron beam instead of electric field .Magnetic field gives a wider deflection
3. i) Diffraction✓1

ii) Interference.✓1

The two opening acts as two source✓1 hence the two waves interfere producing soft and loud sound along the way✓1

1. *The leaf diverges*

*Negative charges from electroscope flows to the sphere leaving +ve charges on the electroscope thus there is divergence.*

1. E = IR + Ir

3.0 = I 3.5 I 0.5✓1

I = 0.75A;✓

1. A thick sheet of plastic, n = 1.5, is used as the side of an aquarium tank. Light reflected from a fish in the water has an angle of incidence of 350. At what angle does the light enter the air. (3 mks)

n; sin ө; = nr sin өr✓

1.3 sin 350 = 1.5 sin өr

өr = 29.80

sin r = sin i✓

n

= sin 29.8

1.5

= 0.3313

r = 19.39✓

1. When the object distance from the pinhole is equal✓ to the image distance.

* When the screen is as large as the object✓1(any 1) Give 1 mk

**11.** Period = = 0.01✓1

f = = ✓1

f = 100Hz✓

12.The figurebelow shows a laclanche cell.

A Manganese Iv Chloride

B Ammonium IV chloride

Section b

13. (a) (4 Marks)

* Correct diagrams.
* It occurs when the earth is between the sun and moon and all lie on a straight line.
* The earth casts a shadow on the moon.

(b) For security reasons since they cover a wide field of view.

(c) = (3 Marks)

=

hi = = 0.05 or 5cm

(d) (i)

(ii) ✓n1sinθ1 = n1sinθ2 (3 Marks)

✓SinC = Sin90

✓ C = Sin-10.8889

= 62.720

14. (a) Capacitance is charge per unit volt

(b) (i) 2μ₣ + 6μ₣ = 8 μ₣

Effective capacitance =Product

sum

= 8 x 3

8 + 3

= 24

11

= 2.182 μ₣

* + 1. Total charge Q = CV = 2.18 x 10-6 x 12

= 26.16 x 10-6C

(iii) p.d across the 2 μ₣ = 26.16 x 10-6√1

8 x 10-6

= 3.27V

1. Ohm’s law – The amount of current flowing through a metallic conductor is directly proportional to the p.d across its ends so long as temperature and other physical conditions remain constant.

(ii) Effective resistance

RE = 4 + 6 x 3

3 + 6

= 4 + 18

9

= 6Ω

V =IR

I =12 = 2A

6

. V = 2 x 4 = 8V

(ii) V = 12 – 8 = 4V√

. V = 1R

I = 4 = 2 = 0.667 A√

6 3

15. (a) (i) Frequency not affected. 1

(ii) Speed reduces. 1

(iii) Wavelength reduces. 1

(b) f = v = 0.12 = 1.5 Hz 1

 0.08

(c) Gamma ray, x-rays, ultraviolent, visible light, infra red, microwaves.

(d) Stationary wave Progressive ways

1. No energy is transferred Energy is transferred from

from source. source. 1

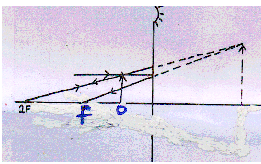
2.Wave form does not Wave form moves away

appear to move. continuously. 1

(e) Wave length = 9/6 = 1.5 cm 1

16. (a) (i) At A light undergoes refraction / dispersion1/2

At B light undergoes total internal reflection1/2

 (ii) C - Violet

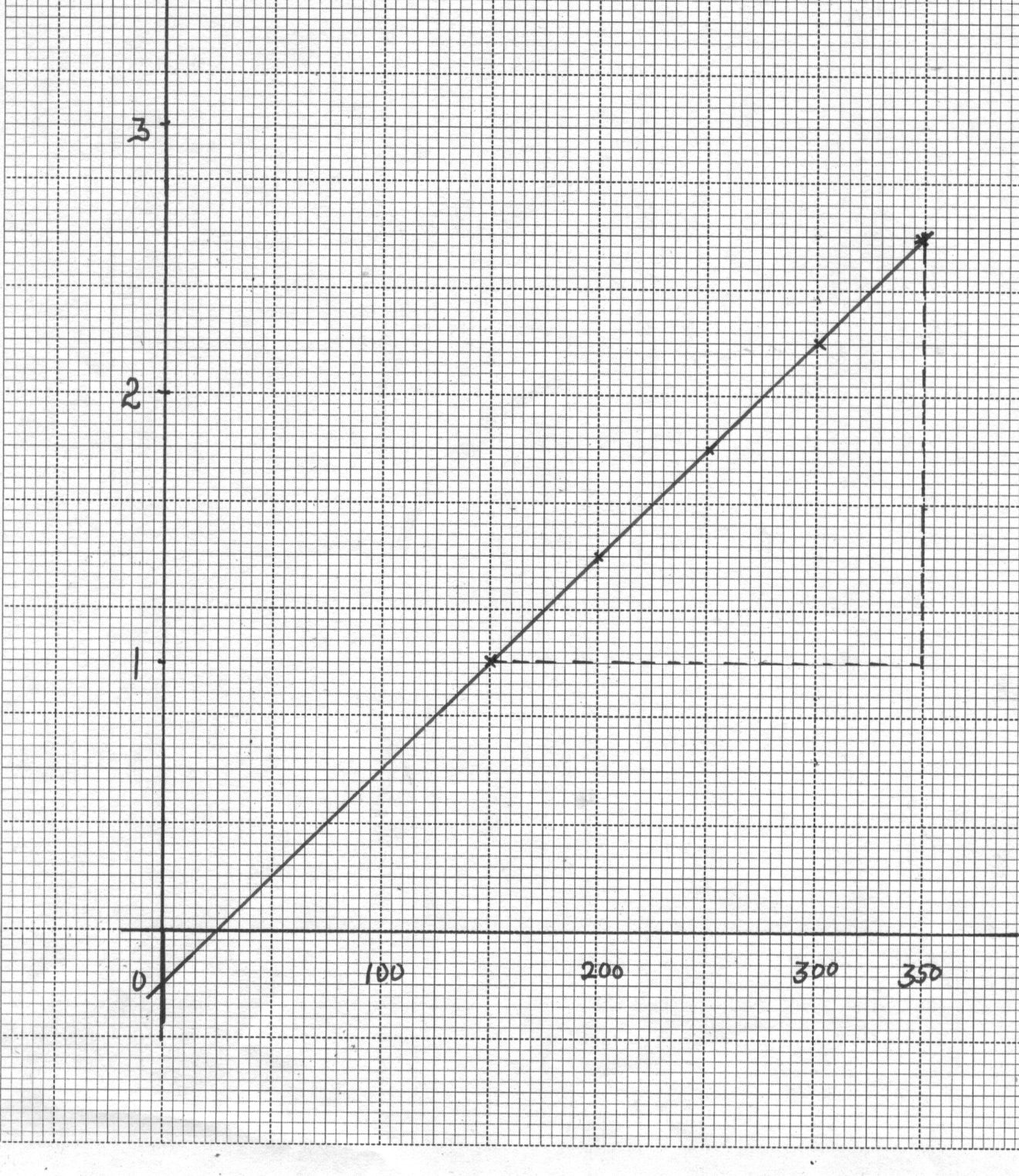
D - Red

17. . a) - Axes labeled with units; 🗸1

- Consistent scale ; 🗸1

- 5 points🗸2 ( 3 – 4 points ) 🗸1

- Line ; 🗸1



***Voltage(V)***

***Resistance = gradient***

***= 2.60 – 1.00***

***(350 – 150) x 10-3***

***= 8.0 ± 0.2 Ω***

Current(mA)

1. Resistance = slope of Graph ; 🗸

= 2.2 – 1.4🗸

0.3 – 0.2

= 80hrs;🗸

Hhhhhh