**PAVEMENT FORM 4 TRIAL 2 EXAMINATION 2021/2022**

**Kenya certificate of secondary education (K.C.S.E)**

**MARKING SCHEME PHYSICS**

**2**

1. angle =180-(90+20)= 70o
2. (a) Long sightedness

**1**

(b) Introducing a concave lens

**1**

1. The plain sheet of paper absorbs some light while the mirror doesn’t. it reflects all the light.

**1**

1. Rectilinear propagation of light.

**1**

**1**

**1**

**1**

**1**

**1**

**1**

1. Has a higher emf per cell than nickel-iron accumulator.
2. Prevents the risk of electric shock in case of faulty connection of electrical current.

**1**

1. The positively charged rod *attracts the negatives and “repels” the positives*.

**1**

When earthed, *electrons flow from the earth and neutralize the positive charges*.

**1**

The electroscope acquires negative charge.

**1**

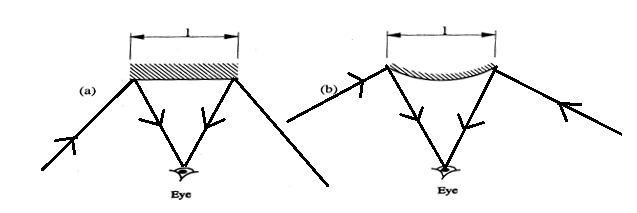
1. - The angle at which the conductor cuts the magnetic field.

**1** *for one correct*

* The length of the conduct



|  |  |  |
| --- | --- | --- |
| **Type of radiation** | **Detector** | **Use**  **** |
| Microwave | Crystal detector, solid state diodes | *- Radar*  *- point to point communication links*  *- wireless networks*  *- remote sensing* |
| *Infra red*  **1** | Thermopile, blackened bulb thermometer | Warmth sensation |



1. The negative charges induce positive charges on water by repelling the negative charges. This causes the stream to be attracted towards the rod

**1**

**1**

1. .**a)** Whenever there is change of magnetic flux an emf is induced whose magnitude is proportional to the rate of change of flux **✓1**

**b) i)** =**✓1**

**✓1**

**✓1**

**ii)** Power Input = Power Output

VI = Power Output **✓1**

  240 × 0.5 = 12 × I **✓1**

I = 10A **✓1**

  iii) - by laminating the core **✓1**

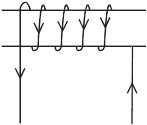
**c)** E = Pt

E = 1.5 × 30 = 45kwh **✓1**

Cost = (45 × 8)sh **✓1**

**✓1**

**d)**

**✓1** *for correct arrow directions*

1. (i) **✓1**

**✓1**

**✓1**

(ii)

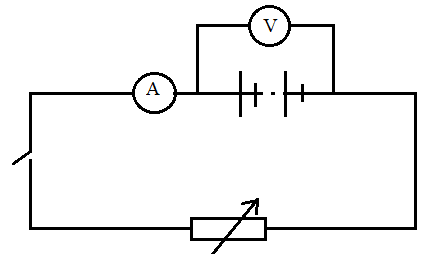
= **✓1**

= 6.857 V**✓1**

(iii) **✓1**

**✓1**

(b) (i)



(ii) **1**

**1**

() **1**

(iii)

= **1**

() **1**

1. (a) - The angle of incidence must exceed the critical angle **1**

* Light must travel from optically denser to a rarer medium. **1**

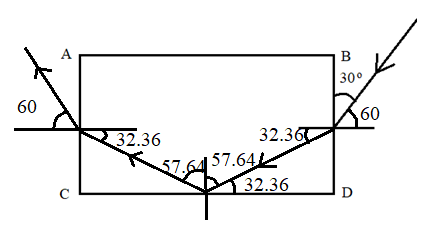
(b) (i) **1**

**1**

(ii) **1**

**1**

**1**



**1**

**1**

**1**

**1**

**1**

**1**

1. (a) (i) **1**

**1**

**1**

(ii) **1**

**1**

(b) (i) the reading of the voltmeter increases from zero to attain a maximum of 4.5V**1**

(ii) the reading increases to 4.5V then decreases to a lower value. **1**

(ii) C1 is charged by the battery Pd increases until the capacitor is fully charged. **1**

(c) (i) deflects then reduces to zero**1**

(ii) electrons flow from plate A of the capacitor towards the positive terminal of the battery. **1**

(d) (i) 0V**1**

(ii) 5V**1**

1. **(a)** Transverse-vibration of wave particles is perpendicular to the direction of wave motion**✓**

Longitudinal- displacement of the wave particles is perpendicular to the direction of the wave motion**✓**

**(b)** **✓1**

=

**✓1**

**(c)** **✓1**

**✓1**

d = m**✓1**

**(d)**

