**‘**

 **CASPA AMUKURA term 1 evaluation test 2021**

**232/2 – PHYSICS PAPER 2**

**MARKING SCHEME**





1. They acquire North Poles at the ends thus they repel.



1. (i) (ii)



1. (i) Microwaves, infrared, visible light, X-rays.
* Observing objects
* Taking pictures.
1. I ) polarization -use potassium dichromate

 ii) local action - use pure zinc metal

1. V = 2S => S = Vt

 t 2

 S = 330 x 0.6 = 99m

 2



1. .



 r = 67.470

1. Distance between the plates.
* Area of plates.
* Dielectric material used.
1. Alkaline produces higher current
* Lasts longer
* It is portable
* Less maintenance and care.

12 p = v2/R

 40 w = ( 240v ) 2/R

 R =57600/40

 = 1440Ω

SECTION TWO

13 (a) (i) Parallel 1 = 1 + 1 + 1

R 6 4 8

1 = 2 + 3 + 4

R 12

1 = 9

R 12

R = 4 = 11/3Ω

Rt = 4 + 11/3

 = 51/3Ω

(ii) V = IR

 I = V = 4.5

 R 5.33

 = 0.844A

 V = 4 x 0.844

 = 3.377V

(b) E = 3.2r + 2.8 (3.2) E = 5r + 5 (1.6)

 E = 3.2r + 8.96 E = 5r + 8 = …

 Solve 1 & 2 simultaneously

 r = 0.533Ω E = 10.67V

 Complete the diagram below indicating the rays that will lead to the formation of the image



1. A compound microscope with an objective lens Lo of focal length 1.2cm and an eye piece lens Le of focal length 2.8cm. An object is placed 1.8cm from the objective lens. The system of lenses produces a final image a distance of 12.0cm from Le. Determine the distance of separation of lens Lo and Le. (4 MARKS)
2. An object is placed 12cm from a convex lens and it forms a virtual image 36cm from the lens. Calculate the focal length of the lens. (3 MARKS)

1. The graph below shows the variation of potential difference V with current I for a certain cell.



From the graph determine

1. The internal resistance of the cell (3 marks)
2. The e.m.f of the cell (1 mark)

14(a) (i) State one cause of energy losses in a transformer and explain

 how it can be minimized. (2mks)

 **Causes Method of minimising**

 **Eddy currents Laminations**

 **Hysterises loss/Magnetic reversals Use of soft iron**

 **Heating effect (T2R) Use of thick copper wires**

 **Magnetic flux leakage Winding secondary on primary/use of soft iron core**

***Any one, with correct method (2mks)***

(ii) Describe briefly the energy changes involved in the generation of electrical energy at a hydropower station (2mks)

**Potential energy kinetic energy electrical energy;;**

(iii)What are the advantages of transmitting power at?

1. Very high voltages (1mk)

**To minimize power loss;**

1. Alternating voltage (1mk)

**Can be stepped up or stepped down;**

(b)(i) Explain how electrons are produced in a cathode ray oscilloscope (CRO) (2mk)

**The cathode is heated by filament and electrons are released from cathode ray by thermionic emission**

1. State two functions of the anodes in a CRO (2mks)

**-to accelerate the electrons**

 **-to focus the electrons towards the screen**

1. At what part of the cathode ray oscilloscope would the time be connected (1mk)

**Across x-plate**

1. State why the tube is highly evacuated (1mk)

**To reduce collision/interaction/interferance of electrons, (hence ionization) with air molecules in the tube**

**Or**

 **To maintain K.E or minimise loss of K.E**

**15 a)** (i) speed of sound

 2.5 s x c = 400 m x 2 ( c is the speed of sound in air )

 C =( 400 m x 2 ) /2.5 s

 = 320 m/s

 ( ii ) 2 ( X – 400 ) m /320 = ( 2.5 + 2 ) s

 ( 2X -800 )/320 =4.5 s

 2x =2240

 X = 1120m

16 a) an eclipse of the moon occurs when the earth comes between the moon and the sun.

 b) umbra is a type shadow that occurs when no light reaches the screen while penumbra is a

 type of shadow that occurs when some light reaches the screen

 c) 20 x 2

 = 40 degrees

 d) ho =25 m, u = 50 m, v = 30 m

 ( ho / hi  )= 50 m/ 30 m

 hi  = 750/50

 = 15 m