Name:.......**Marking scheme.**........................ Adm. No. ....

Class: ....

Signature:..........................

232/3
PHYSICS
JUNE 2018
TIME: 2 HRS

Date: ....

KASSU JOINT EXAMINATION - 2018

Kenya Certificate to Secondary Education

PHYSICS PAPER 2

Instructions

- Write your name, admission number, class, signature and date of examination in the spaces provided at the top of the page.
- This paper consist of two sections A and B.
- Answer **all** the questions in the two sections in the spaces provided after each question.
- Electronic calculators and mathematical tables may be used.
- All numerical answers should be expressed in decimal notations.

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAXIMUM MARKS	CANDIDATE'S SCORE
A	1 – 12	25	
B	13	10	
	14	10	
	15	11	
	16	8	
	17	8	
	18	9	
	TOTAL	**80**	

This paper consists of **15** printed pages. Candidates are advised to check and to make sure all pages are printed.

1. Determine the number of images formed when an object is placed between two plane mirrors inclined at an angle of 20^0 to each other. **(1 mark)**

$$N = \frac{360}{\theta} - 1$$
$$= \frac{360}{20} - 1$$
$$= 20 - 1$$
$$= 19 \text{ images} \checkmark$$

2. State and explain what will be observed when a wire is connected between a positively charged electroscope and uncharged electroscope. **(2 marks)**
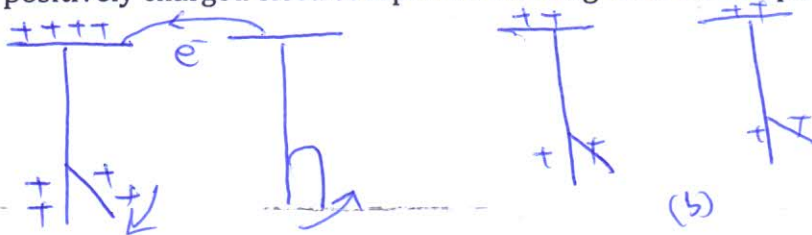
Charges will flow from the uncharged electroscope to the positively charged electroscope until the divergence is the same in the electroscope $\checkmark$

3. Figure shows an electrical circuit including two switches S_1 and S_2 and three identical lamps L_1, L_2, L_3.
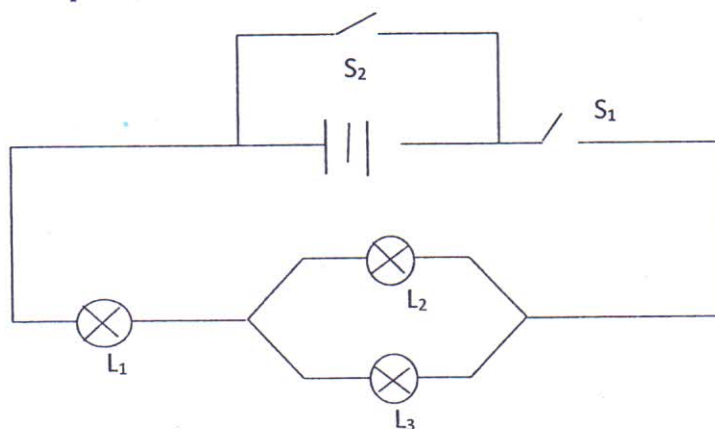
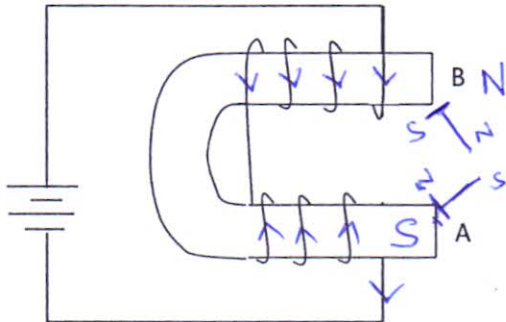(i) Compare the brightness of L_1 and L_2 when switch S_1 is closed. **(1 mark)**

L_1 will be brighter than L_2. $\checkmark$

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(ii) State what will be observed when all the switches are closed   **(1 mark)**

non of the bulbs will light (

4. (a) The figure below shows a horse shoe electromagnet. Determine the polarity at the ends A and B.   **(1 mark)**

A— south pole
B— North pole. ✓ *tied*

(b) Two steel needles are placed at the poles A and B state and explain what happens to the needles.   **(2 marks)**

The ends of the needles will attract each other the needles will acquire polarization as shown and attracts each other

5. An object 5cm tall is placed 20cm in front of a concave mirror of focal length 15cm. Using a ray diagram and the grid below, determine the distance of the image from the object.   *8cm×5 = 40cm*   **(2 mks)**
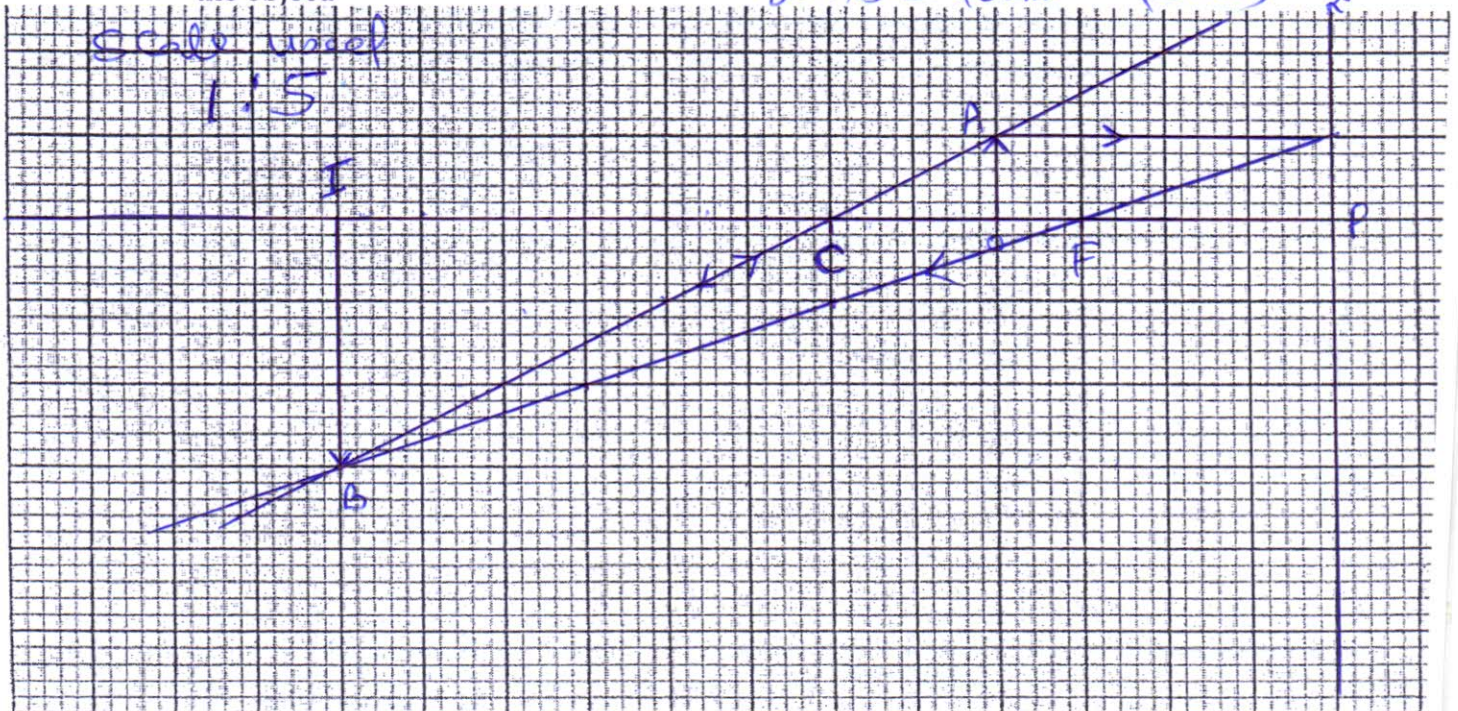
6. Figure shows a transverse wave travelling along the x-axis
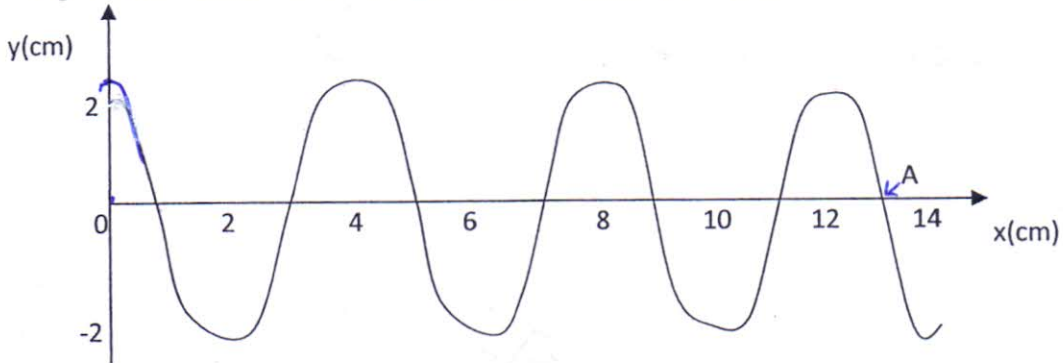
If the time taken by the wave to move from 0 to A is 0.13 seconds determine the;

(i) frequency of the wave. **(1 mark)**

$$f = \frac{3.25}{0.13} = 25 Hz \quad \checkmark$$

(ii) speed of the wave. **(2 marks)**

$$V = f \lambda$$
$$= 25 \times 0.04 \quad \checkmark$$
$$= 1 m/s \quad \checkmark$$

7. (i) An optical fibre provides an efficient way of transmitting light energy. State and explain the property of light behind its functioning. **(2 marks)**

Total internal reflection ✓
Rays of light undergo total internal reflection repeatedly on the boundary of high and low refractive index the entire length of the fibre

(ii) State the advantage of optical fibre over ordinary cables. **(1 mark)**

• Higher carrying capacity ✓
• thinner   any one
• lighter

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