SHINING STUDENT

Name ……` Index No. ……

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abrahammariera@gmail.com 0729125181

SHINING STUDENT

Candidates Sign: ……..…..…..

Date: ……..

232/1

PHYSICS

Paper 1

Time: *2 Hours*

POST MOCK 2022

Kenya Certificate of Secondary Education (K.C.S.E)

PHYSICS

Paper 1

Time: *2 Hours*

Instruction to Candidates

(a) *Write your name, index number in the spaces provided above.*
(b) *Sign and write the date of examination in the spaces provided above.*
(c) *This paper consists of* **two** *sections:* **A** *and* **B**.
(d) *Answer* **all** *the questions in sections* **A** *and* **B** *in the spaces provided.*
(e) ***All*** *working* **must** *be clearly shown.*
(f) *Silent non-programmable electronic calculators may be used.*
(g) *Candidates should answer the questions in English.*

For Examiners Use Only

Section	Question	Maximum Score	Candidate's Score
A	1 – 12	25	
B	13	5	
	14	11	

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SHINING STUDENT

	15	14	
	16	13	
	17	12	
	Total Score	**80**	

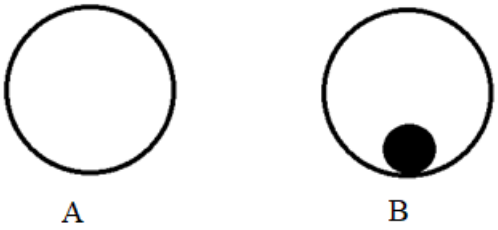
This paper consists of 11 printed pages, candidate should check the questions to ascertain that all pages are printed as indicated and that no questions are missing

SECTION A (25 marks)

Answer all the Questions in this section in the spaces provided.

1. Sketch the scale of a vernier caliper showing a reading a 3.00 cm. (2 marks)

2. The figure below shows two drums A and B. Drum A is empty while drum B has a cylindrical rod.



If the two drum are given the same rolling force, state and explain which drum stops first. (2 marks)

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SHINING STUDENT

3. An astronaut weighs 500 N on earth and 80N on the surface of another planet. Given that the gravitational field strength of the earth is 10 N/kg, calculate the gravitational field strength of the planet.
(2 marks)

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4. In order to estimate the height of a tree, a student measured the length of its shadow and found it to be 3.2 metres. A metre rule that she had produced a shadow of length 240 centimetres. What is the estimation of the tree height? (3 marks)

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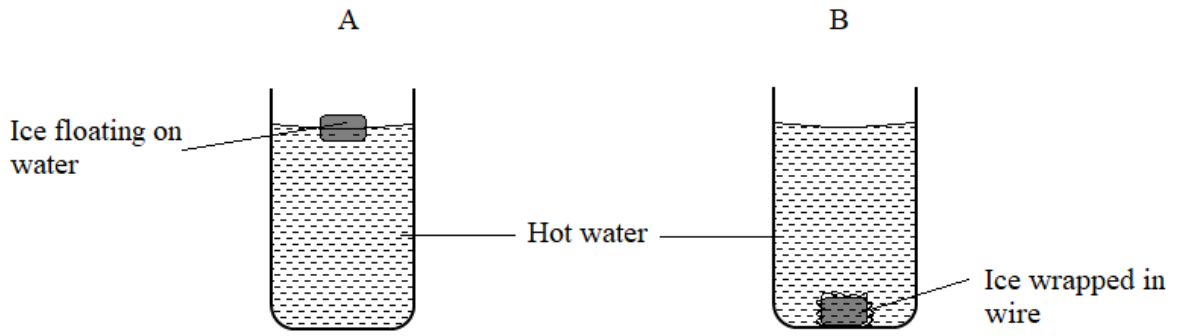
5. The figure below shows two identical containers A and B containing equal amounts of water and an identical ice block.



State with reason, which water cools faster, assuming the gauze absorbs negligible heat (2 marks)

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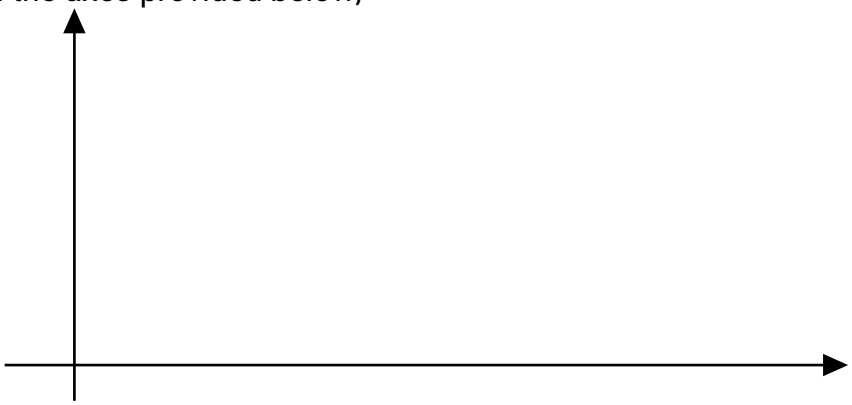
6. On the axes provided below,



(i) Sketch a graph of pressure (P) against reciprocal of volume ($^{1}/_{V}$) of a fixed mass of an ideal gas at a constant temperature. (1 mark)

(ii) State the physical quantity represented by the gradient. (1 mark)

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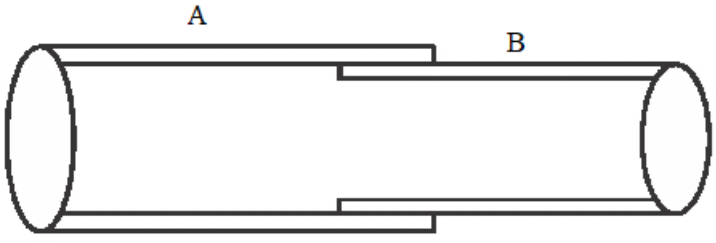
7. The figure below shows two pipes A and B of different expansivities tightly fitted onto each other at the junction. When some ice was placed at the junction, it became easy to separate the conductors.



Explain which of the two was a better conductor of heat. (2 marks)

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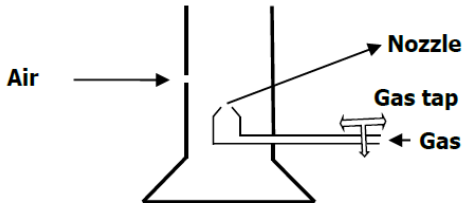
8. The figure below shows a Bunsen burner.



Explain how air is drawn into the burner when the gas tap is open. (2 marks)

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9. (a) Define Brownian motion (1 mark)

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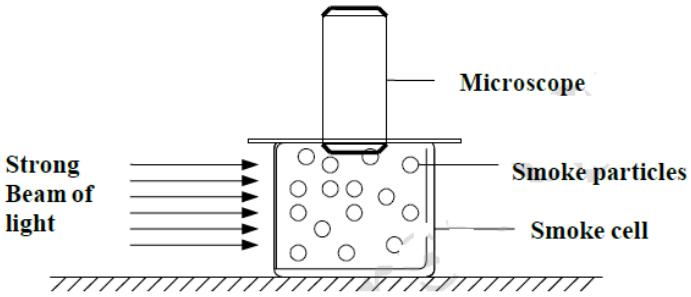
(b) The figure below shows apparatus used to observe the behaviour of smoke particles in a smoke cell



State one reason why smoke is used in the experiment. (1 mark)

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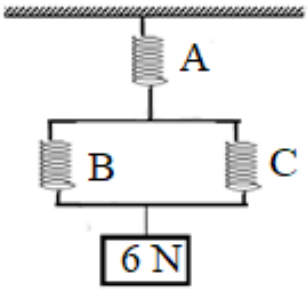
SHINING STUDENT

10. Three identical springs each of spring constant 10N/m and weight 0.5N are used to support a load as shown.



Determine the total extension of the system (2 marks)

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11. Other than the friction in a screw jack, state the reason it why it can't be 100% efficient. (1 mark)

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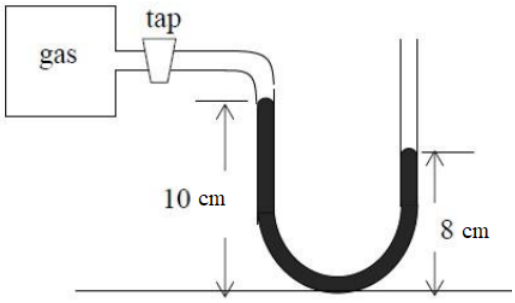
12. A U-tube containing mercury is used as a manometer to measure the pressure of a gas in a container. When the manometer has been connected and the tap opened, the mercury in the U-tube settles as shown in the diagram below.



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If the atmospheric pressure is 760 mmHg and the density of mercury is 13 600 kg/m^3, calculate the pressure of the gas in Pascals. (3 marks)

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SECTION B (55 marks)

Answer all the Questions in this section in the spaces provided.

13. (a) State two ways of increasing the stability of a body (2 marks)

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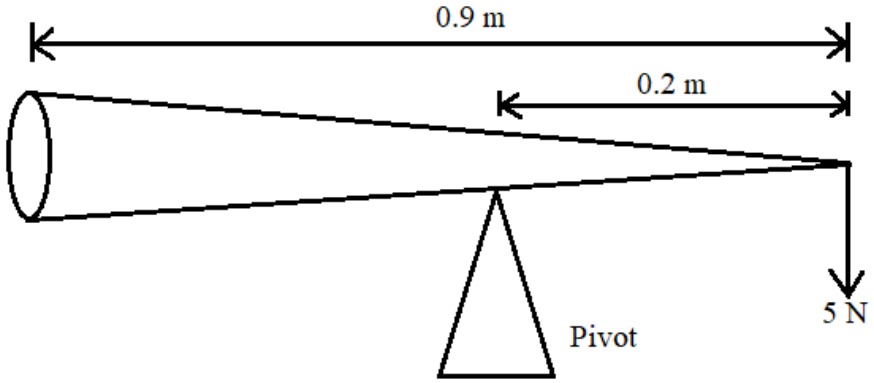
(b) The figure below shows a solid cone which has a uniform density in equilibrium under action of force F.



Determine the weight of the cone. (3 marks)

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14. (a) State the law of floatation. (1 mark)

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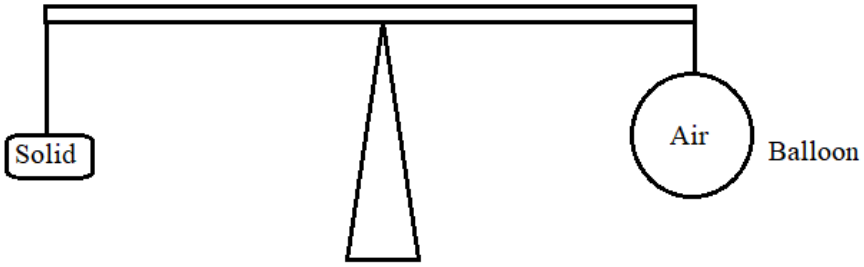
(b) The system in the figure below is at equilibrium.



State and **explain** what may be observed as temperature of surrounding is increased. (2 marks)

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(c) A hot air balloon is tethered to the ground on a windless day. The envelop of the balloon contains 1200 m^3 of hot air of density 0.8kg/m^3. The mass of the balloon *(not including the hot air)* is 400kg. The density of the surrounding air is 1.3 kg/m^3.

(i) Explain why the balloon would rise if it were not tethered. (2 marks)

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(ii) Calculate the tension in the rope holding the balloon to the ground. (3 marks)

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(iii) Calculate the acceleration with which the balloon begins to rise when released. (3 marks)

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15. A string of negligible mass has a metal ball tied at the end of the string 100cm long and the ball has a mass of 0.04kg. The ball is swinging horizontally, making 4 revolutions per second.

Determine;

(a) the angular velocity. (3 marks)

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(b) the angular acceleration (2 marks)

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(c) The tension on the string (2 marks)

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(d) The linear velocity (2 marks)

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(e) A muddy water was put in a container and whirled at a high speed in a horizontal circle. Explain how the high speed causes the separation of mud from water

(2 marks)

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(f) What provides for the centripetal force the following cases of circular motion? (3 marks)

(i) The moon moving around the earth.

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(ii) A cyclist negotiating a curve.

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(iii) Aeroplane taking a bend.

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16. (a) Define specific latent heat of vaporization (1 mark)

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(b) A jet of dry steam at 100_0C is sprayed on to the surface of 100g of dried ice at 0^0C contained in a well-lagged copper calorimeter, until all the ice has melted and the
temperature begin to rise. The mass of water in the calorimeter when the temperature reaches 40^0C is found to be 120 g. Assuming that the specific latent heat of fusion of ice is 336000JKg^{-1}, specific heat capacity of water is 4200J/Kg/K, heat capacity of the calorimeter is 300J/K. Determine the:

(i) Heat gained by ice to melt (2 marks)

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(ii) Heat gained by the calorimeter and the melted ice (3 marks)

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(iii) The specific latent heat of vaporization of water. (3 marks)

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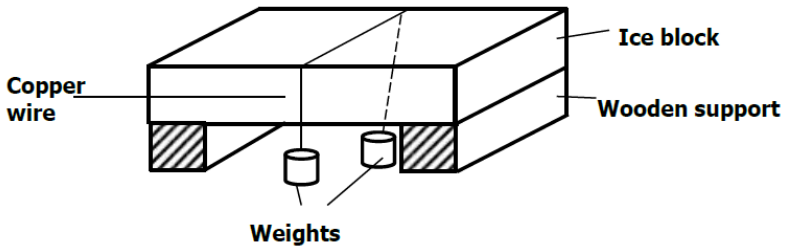
(c) Figure below shows a block of ice with two heavy weights hanging such that the copper wire connecting them passes over the block of ice.



(i) It is observed that the wire gradually cuts its way through the ice block, but leaves it as one piece. Explain.
(2 marks)

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(ii) What change would be observed if the copper wire used in the experiment was replaced an iron wire. Explain your answer. (2

marks)

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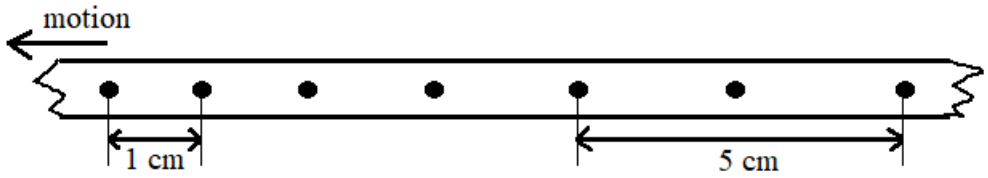
17. (a) The figure below shows the pattern formed on a tape in an experiment to determine the acceleration of a trolley. The frequency of the ticker tape used was 50Hz.



Calculate

i) The initial velocity of the trolley (2 marks)

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ii) The final velocity of the trolley (2 marks)

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iii) The acceleration of the trolley (3 marks)

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SHINING STUDENT

(b) Define the terms;

(i) Inelastic collision. (1 mark)

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(ii) Inertia (1 mark)

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(c) A bullet of mass 20g leaves the muzzle of a gun at a speed of 250m/s. If the mass of the gun is 3.5kg, calculate the recoil velocity of the gun.
(3 marks)

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Name ……` **Index No.** ……

Candidates Sign: ……

Date: ……

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PHYSICS

Paper 2

Time: *2 Hours*

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SHINING STUDENT

POST MOCK 2022

Kenya Certificate of Secondary Education (K.C.S.E)

PHYSICS

Paper 2

Time: *2 Hours*

Instruction to Candidates

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For Examiners Use Only

Section	Question	Maximum Score	Candidate's Score
A	1 – 12	25	
B	13	12	
	14	12	
	15	12	
	16	9	
	17	10	
Total Score		80	

This paper consists of 12 printed pages, candidate should check the questions to ascertain that all pages are printed as indicated and that no questions are missing

SECTION A 25 MARKS

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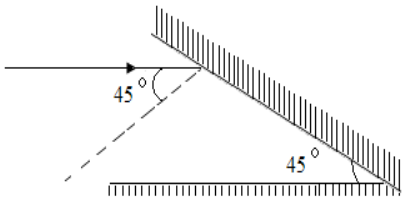
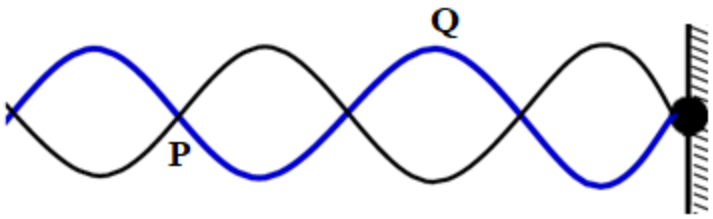
SHINING STUDENT

Answer all the questions in the spaces provided.

1. The figure below shows a ray of light incident on a mirror at an angle of 45°. Another mirror is placed at an angle of 45° to the first one as shown. Sketch the path of the ray until it emerges. (2 marks)



2. The figure below shows a transverse stationary wave along a string.



Name P and Q and explain how each is formed. (3 marks)

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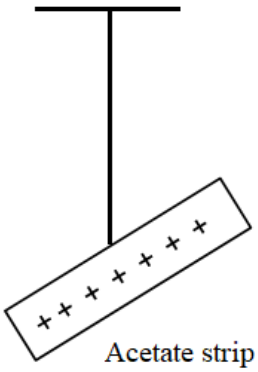
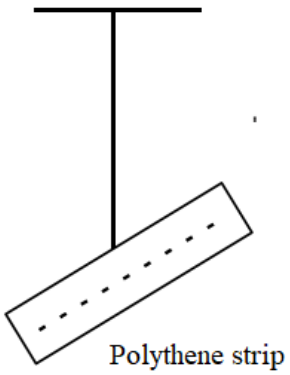
3. The diagrams below show a positively charged acetate strip and a negatively charged polythene strip freely suspended and isolated.





Two rods X and Y are brought up in turn to these strips. X attracts the acetate strip but

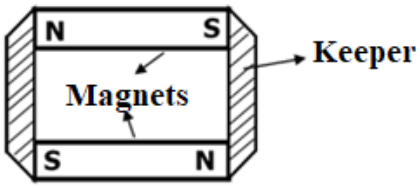
repels the polythene strip. Rod Y does not repel either the acetate or the polythene. State the type of charge on

each rod.

X ..... (1 mark)

Y ..... (1 mark)

4. The figure below shows how magnets are stored in pairs with keepers at the end. Explain how this method of storing helps in retaining magnetism longer
(1 mark)



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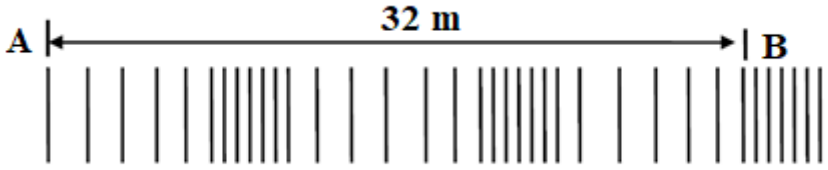
5. The diagram below shows waves generated from a tuning fork. If the wave takes 0.1 second to move from point A to B. determine the frequency of the wave.
(3 marks)



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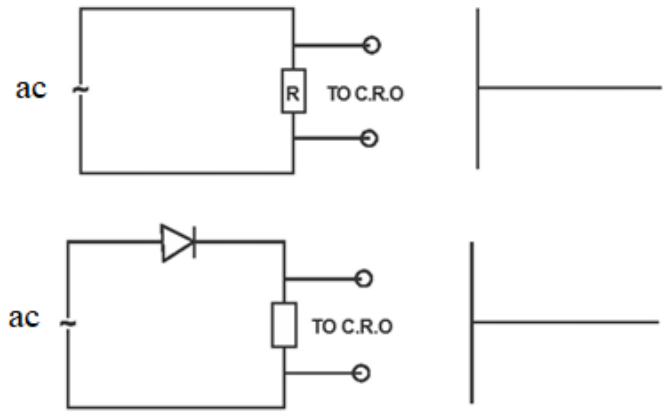
6. In the figure 9 and 10 below, sketch a graph for each to show the variation of voltage with time as displayed on a CRO screen. (2 marks)



7. Other than current state two other factors that affect the magnitude of force on a current carrying conductor placed in a magnetic field. (2 marks)

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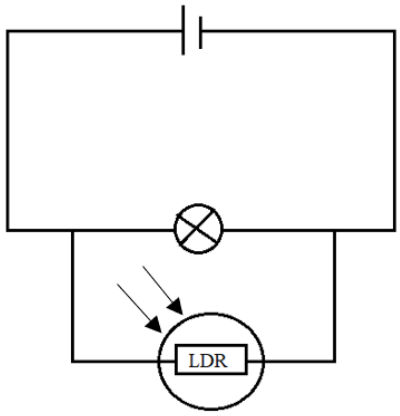
8. Concave mirrors are used by dentists to examine teeth. By use of a ray diagram show how this is achieved. (2 marks)

9. A student connected the set up below in the laboratory. Explain the observation made on the bulb when the set-up below is taken to a dark room
(2 marks)



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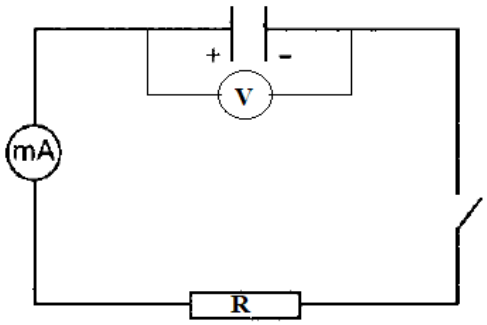
10. The figure below shows a fully charged capacitor



(i) State the observation made on the voltmeter when the switch is closed. (1 mark)

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(ii) State the function of resistor R (1 mark)

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11. Calculate the maximum number of 100W bulbs that can be safely connected to 240V in

a circuit fitted with 13A fuse. (2 marks)

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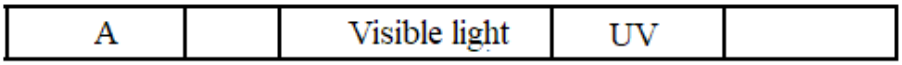
12. The figure below part of electromagnetic spectrum.



Identify radiation A and state its source. (2 marks)

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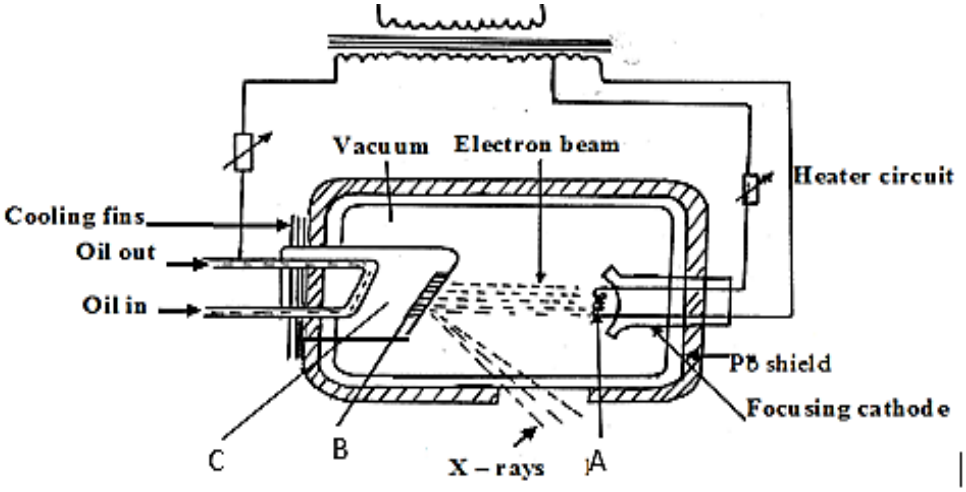
SECTION B 55 MARKS

Answer all the questions in this section in the spaces provided.

13. (a) The figure below shows a X-ray tube.



(i) Name the part labelled C (1 mark)

……

(ii) State the property of the material labelled B on the diagram which makes it suitable for use in the X-ray tube.
(1 marks)

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(iii) Why is C inclined at an angle of 45^{o}? (1 mark)

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(iv) State the adjustment that can be made to vary

I. The quality of X-rays (1 mark)

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II. The quantity of the X-rays. (1 mark)

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(v) An x-ray tube has an accelerating potential of 100KV. Determine the maximum frequency of the x-rays produced.

(Plank's constant = 6.63×10^{-34} Js, e = 1.6×10^{-19}C) (3 marks)

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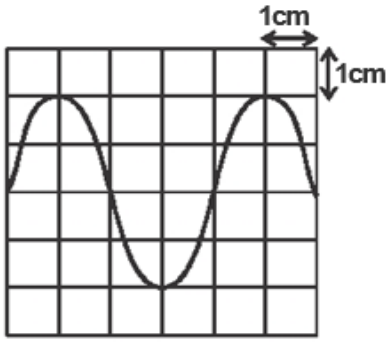
(b) In a CRO, waveform given below was displayed on the screen when the sensitivity at the Y plate was10V/cm andtime base set at 20 milliseconds/cm.



Determine:

(i) peak voltage (2 marks)

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(ii) frequency of the signal (2 marks)

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14. a) $^{226}_{88}Ra$ decays into $^{222}_{86}Rn$ by emission of an alpha particle. Write a nuclear equation for the decay (1 marks)

b)

i) What do you understand by the term half-life of a radioactive substance? (1 mark)

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ii) A G.M tube registers 20 counts. When a radioactive source is brought close to it, it registers 3220 counts and 120 counts 30 hours later. What is the half-life of this substance? (3 marks)

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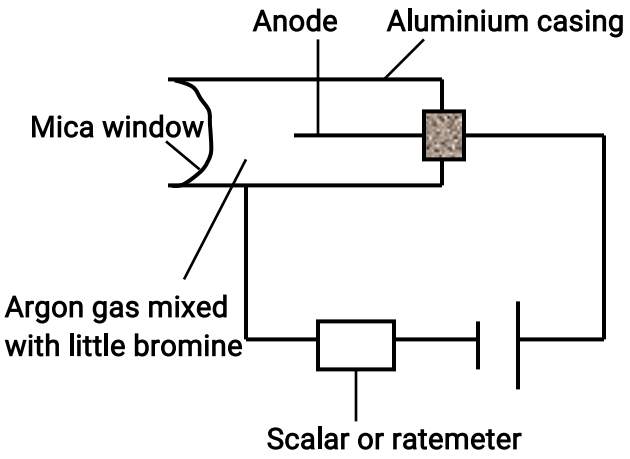
c) The figure below shows a G.M tube.



i) What is the purpose of the mica window? (1 mark)

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ii) Explain the purpose of the bromine (2 mark)

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iii) Why should argon gas be kept at low pressure (1

mark)

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iv) What is meant by the term "*dead time*" as used in GM tube (1 mark)

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v) Briefly explain how GM tube works. (2 marks)

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15. (a) State the Ohms Law (1 mark)

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(b) You are provided a rheostat, 2 cell, a voltmeter, an ammeter, a switch and a fixed resistor.

i) Draw a circuit diagram that can be used to verify Ohms law. (2 marks)

ii) Describe how the above set up can be used to determine Ohms law. (4 marks)

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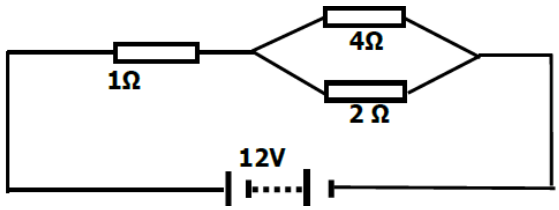
(c) **Study** the circuit diagram below and answer the questions that follow.



Calculate

(i) Determine the total resistance in the circuit. (2 marks)

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(ii) The current through the 4Ω resistor (3 marks)

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16. a) State Snell's law (1mark)

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b) A ray of light travelling from water to glass makes an angle of incident of 30^0. Find the angle of refraction in the glass. Refractive index of water = $^4/_3$. Refractive index of glass = $^3/_2$ (3 marks)

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c) State the necessary and sufficient conditions for total internal reflection to occur. (2 marks)

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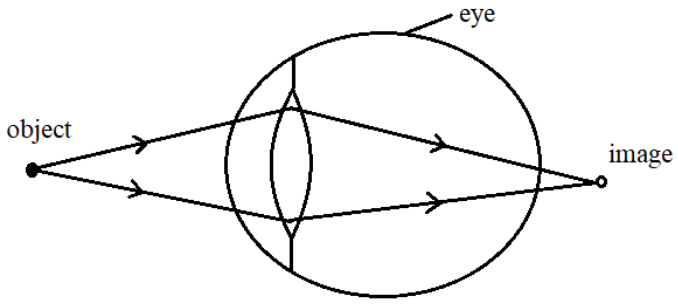
d) The figure below shows a human eye defect.



(i) State one possible cause of this defect. (1 mark)

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(ii) On the diagram, show how the defect is corrected. (2 mark)

17. (a) State the Lenz's law of electromagnetic induction. (1 mark)

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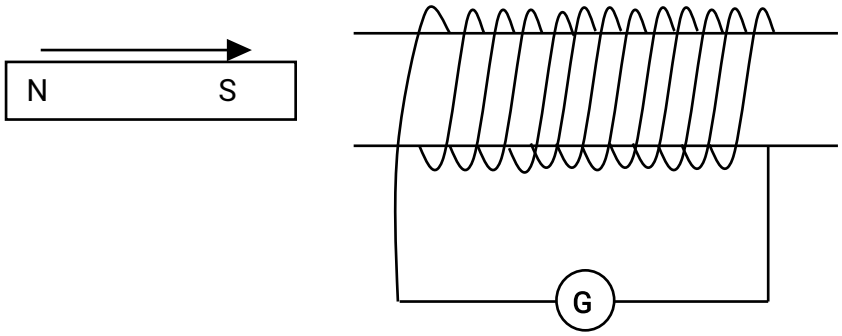
(b) A bar magnet is moved into a coil of an insulated copper wire connected to a zero centre galvanometer as shown below



(i) Show on the figure above the direction of the induced current in the coil (1 mark)

(ii) State and explain what is observed on the galvanometer when the south pole of the magnet is moved into and then withdrawn from the coil. (2 marks)

……

……

(c) A transformer has 800 turns in the primary and 40 turns in the secondary winding. The alternating voltage connected to the primary is 240V and current of 0.5.A. If 10% of the power is dissipated as heat within the transformer, ddetermine the current in the secondary coil.

(3 marks)

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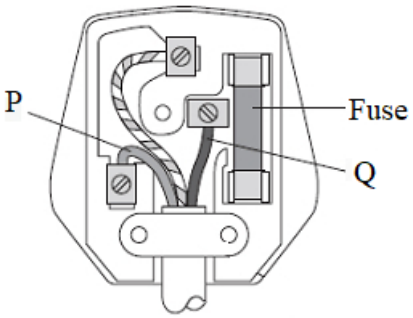
(d) The diagram below shows a three-pin plug.



(i) Name the colour of conductors P and Q (2 marks)

P……Q……

……

(ii) Why is the earth pin longer than the rest in the three-pin plug shown above? (1 mark)

……

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SHINING STUDENT

POST MOCK 2022

PHYSICS PAPER 3

PRACTICAL CONFIDENTIAL

Please provide the following for the physics practical paper.

QUESTION 1

- 2 dry cells
- A cell holder
- A switch
- An ammeter *(with a scale range of 0-1A)*
- Six connecting wires
- Wire mounted on the metre rule labelled X ***(SWG 28 or 0.37mm in diameter)***
- A micrometer screw gauge *(to be shared)*
- A Voltmeter

QUESTION 2

- a metre rule
- knife edge raised at least 20 cm above bench
- one 50 g mass and one 100 g mass
- a beaker or any container
- 2 pieces of thread *(around 15 cm each)*
- some water in a beaker
- Liquid L in a beaker *(Paraffin)*
- Some tissue paper.
- A triangular **glass** prism
- A piece of soft board
- Four optical pins
- Four office pins

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- A sheet of plain paper

Name ……` **Index No.** ……

Candidates Sign: ……

Date: ……

232/3

PHYSICS

Paper 3 (Practical)

Time: *2 ¼ Hours*

POST MOCK 2022

Kenya Certificate of Secondary Education (K.C.S.E)

PHYSICS

Paper 3 (Practical)

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided above.*
- *Sign and write the **date** of the examination in the spaces provided above.*
- *You are supposed to spend the first **15** minutes of the **2 ½** hours allowed for this paper reading the whole paper carefully before commencing your work.*
- *Marks are given for a clear record of the observation actually made, their suitability, accuracy and the use made of them.*
- *Candidates are advised to record their observations as soon as they are made*
- *Non-programmable silent electronic calculators **may be** used.*
- *Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing.*

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For Examiner's Use Only.

Question	Maximum score	Candidate's score
1	20	
2	20	
Total	40	

This paper consists of 8 printed pages candidates should check the questions to ascertain that all pages are printed as indicated and that no questions are missing

QUESTION 1

You are provided with the following: -

- 2 dry cells
- A cell holder
- A switch
- An ammeter
- Five connecting wires
- Wire mounted on the metre rule labelled x
- A micrometer screw gauge [to be shared
- A Voltmeter

Proceed as follows

(a) Measure the diameter of the wire three times and determine the average diameter,

(b) D …… m (2 marks)

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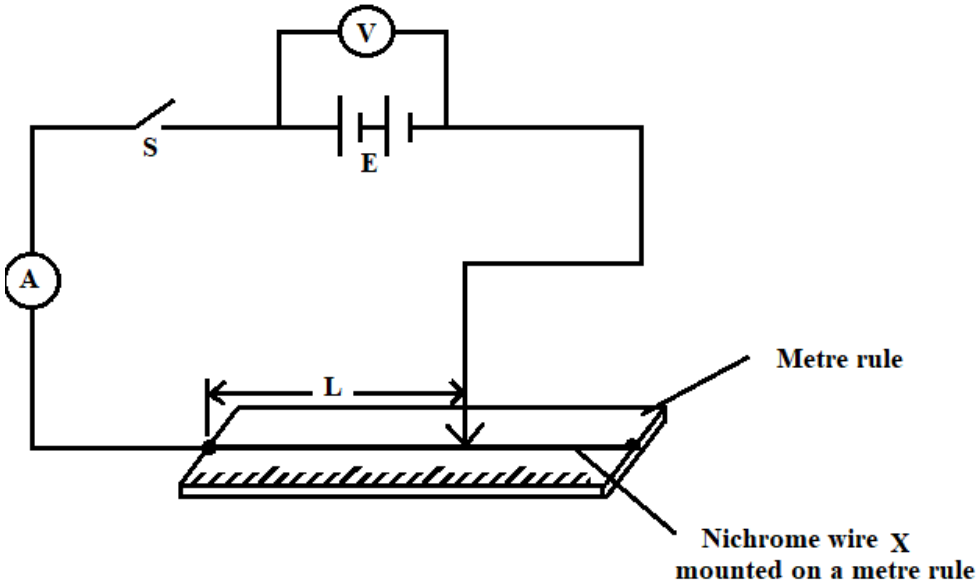
(c) Determine the cross-section area of the wire, A..... m^2 (1 marks)

(d) Connect the circuit as shown in the figure below.



(e) **Measure** the voltage E from the Voltmeter, before closing the switch.

E = ... (1 mark)

(f) Adjust the length, ℓ of the wire to 0.2m, close the switch, S and read the value of current and record in the table below.

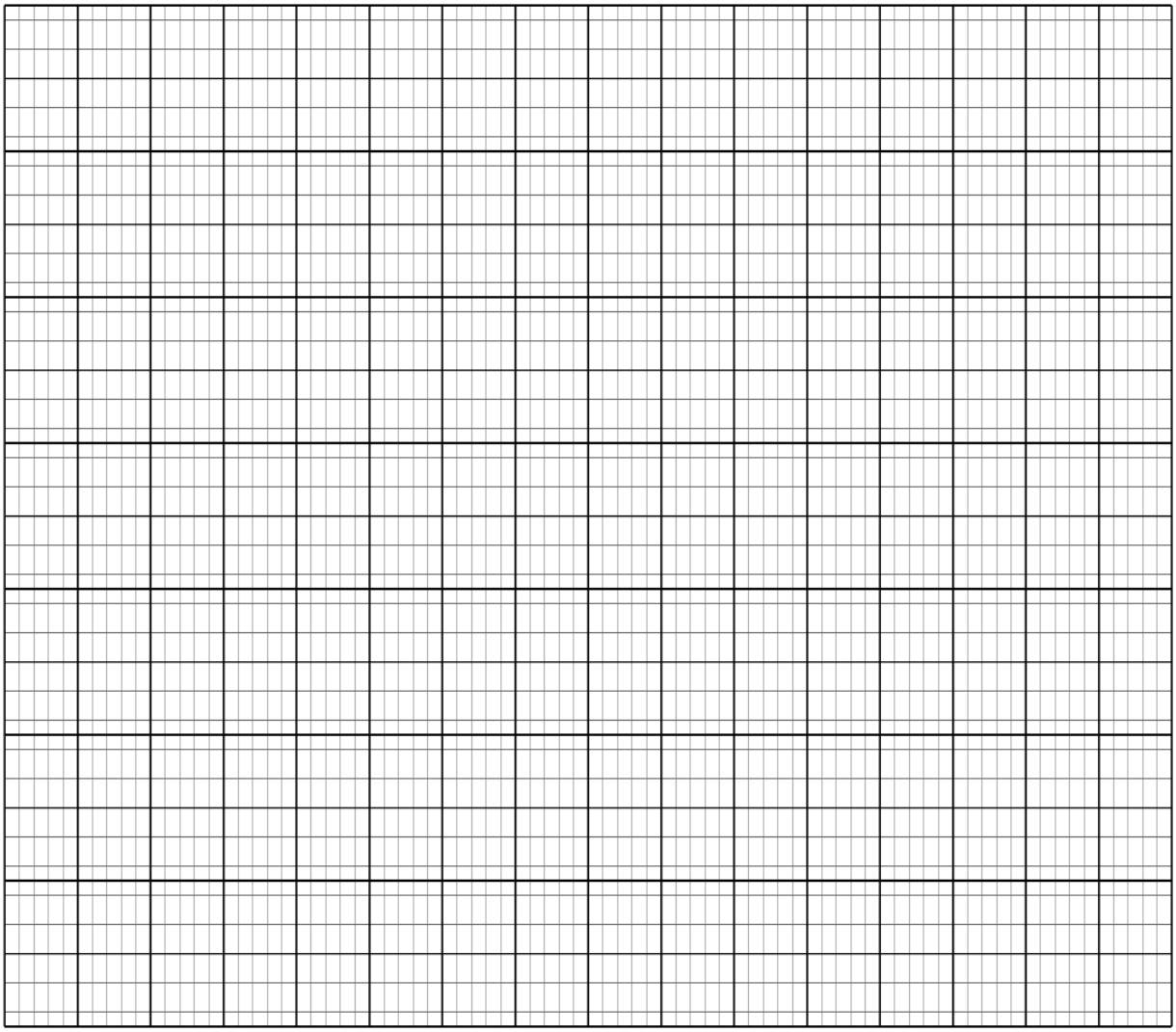
Length, ℓ (m)	0.2	0.3	0.4	0.5	0.6	0.7
Current, I (A)						

$\frac{1}{l}$ (A^{-1})						

(g) Repeat the procedure in (c) above for the values of lengths given. (5 marks)

(h) **Calculate** the value of $^{1}/_{l}$ and record in the table above. (1 mark)

(i) On the grid provided **plot** a graph of $\frac{1}{l}$ (y- axis) against *l* (5 marks)



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(j) **Determine** the gradient of the graph. (2 marks)

……

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……..

(k) Given that, $\frac{1}{I} = \frac{\delta}{EA}l + \frac{r}{E}$, determine the value of δ and r. (3 marks)

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QUESTION 2

You are provided with the following:

- a metre rule
- knife edge raised 20 cm above bench
- one 50 g mass and one 100 g mass
- a beaker or any container
- some thread
- some water in a beaker
- Liquid L in a beaker
- tissue paper
- A triangular glass prism
- A piece of soft board
- Four optical pins
- Four office pins
- A sheet of plain paper

PART A

Proceed as follows:

(a) Balance the metre rule edge and record the reading at this point

Balance point =.....cm (1 mark)

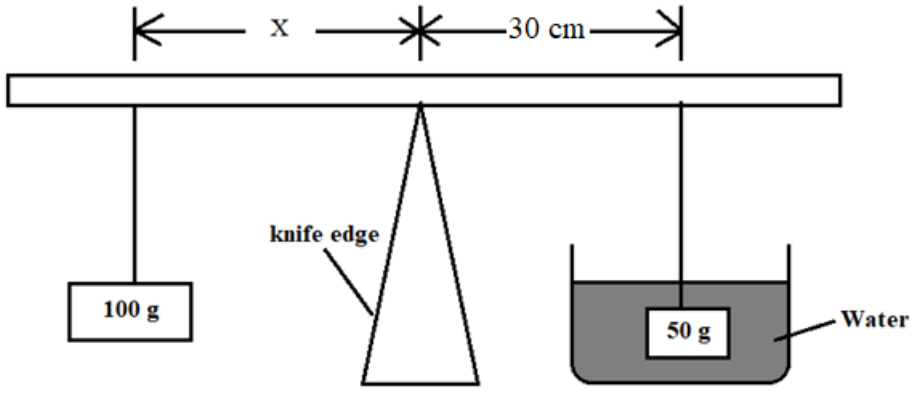
For the rest of this experiment the knife edge must be placed at this position

(b) Set up the apparatus as shown in the figure below.

(c) Use the thread provided to hang the masses such that the positions of support can be adjusted. The balance is attained by adjusting the position of the 100g mass.

Note that the distances X is measured form the knife edge and the 50g mass is fully submerged in the water.

(d) Record the value of X .



X =.....cm

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..... (1 mark)

(e) Apply the principle of moments to determine the weight W_w of the 50 g mass in water and hence determine the up thrust U_w in water

W_w ..... N (2 marks)

U_w ..... N (1 mark)

(f) Remove the 50 g mass from the water and dry it using tissue paper.

(g) Maintaining the distance of 30cm in step (d), now balance the metre rule when the 50 g mass is fully submerged in the liquid L Record the value of the distance X.

X = ... cm (1 mark)

(h) Apply the principle of moments to determine the weight W_L of the 50 g mass in the liquid L and hence determine the upthrust U_L in the liquid

(i) W_L= (2 mark)

……

(ii) U_L= (1 mark)

…….

(iii) RD of liquid L (2 marks)

……

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PART B

Proceed as follows:

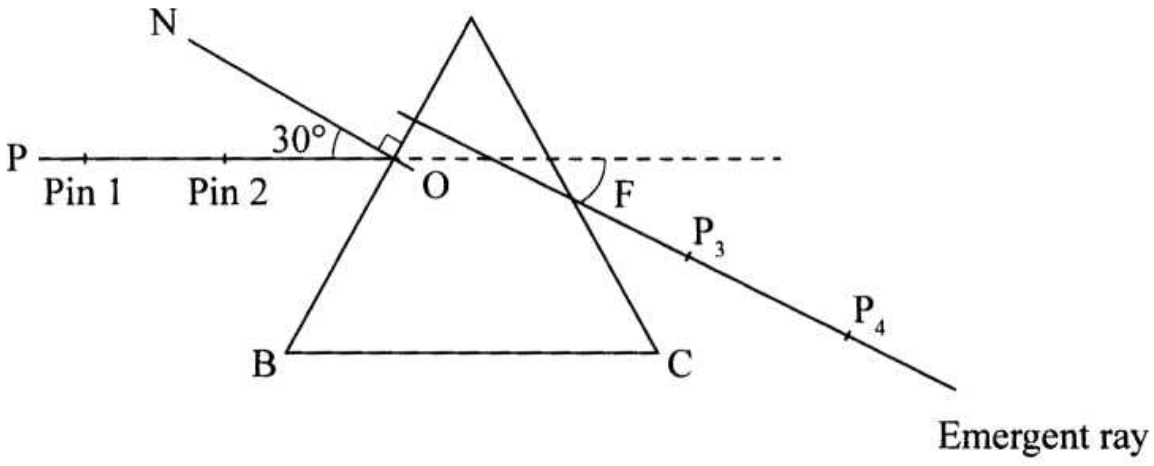
(a) Place the plain sheet of paper on the soft board and pin it using the office pins at the comers. Trace the triangular prism outline of the prism on the sheet of paper (use the upper part to leave space for two other outlines on the same page). Label the vertices of the outline at A, B and C. Remove the prism from the paper.

(b) On the outline at a point O near the centre of side AB draw a normal ON.

(c) Draw a line PO at an angle of 30° to the normal ON as shown in **the figure below.**

(d) Replace the prism accurately on the outline. Fix two optical pins vertically on line PO at different points **(see the figure below).**

(e) View the images of the two pins through side AC of the outline. Fix a third and fourth pin vertically such that they are in line with the images of the first and second pin. Remove the prism and the pins. Draw a line joining the marks made by the third and fourth pins and extend it to join line PO (also extended) as shown below.



Measure F, the angle of deviation of the emergent ray. (2 marks)

……

……

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(f) Repeat part (e) for other angles of incidence shown in the table below. (Draw a fresh outline of the prism for each angle of incidence)

Complete table 1 (3 marks)

Angle of incidence	30°	50°	70°
Angle of deviation			

(g) Determine:

(i) E the angle of emergence (between the emergent ray and the normal at the point of emergence) at the least angle of deviation. (2 marks)

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(ii) K given that $K = 2\sin\left(30+\frac{F_o}{2}\right)$ (where F_0 is the least angle of deviation)

(2 marks)

……

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(Attach the plain sheet of paper to your question paper and hand them in).

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SHINING STUDENT

NAME……INDEX NUMBER…….

CANDIDATE'S SIGNITURE ……DATE…….

POST-MOCK-2022

AGRICULTURE
FORM 4
PAPER 1
443/1

INSTRUCTIONS TO CANDIDATES

(a). Write your name and index number in the spaces provided.

(b) Sign and write the date of the examination in the spaces provided above.

(c). This paper consists of three sections; A, B and C

(d) Answer all the questions in section A and B

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SHINING STUDENT

(e) Answer any two questions in section C

(f) All the answers should be written in the spaces provided.

(g) Candidates should check the questions papers to ascertain that all the pages are printed as indicated and that no questions are missing.

(h) Candidate should answer all questions in English.

For examiner's use only

Section	Question	Maximum score	Candidate's score
A	1-11	30	
B	12-15	20	
C		20	
		20	
	TOTAL	90	

SECTION A (30 MARKS)

Answer all questions in this section in the spaces provided.

1, State four factors determining farming systems
(2 marks)

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……

2. State four advantages of extensive farming system.
(2 marks)

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……

3. State four importance of optimum temperature in crop production. (2 marks)

……

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……

4(a) Name three physical properties of the soil. (1 ½ marks)

……

……

……

……

b) State three importance of soil structure on production. (1 ½ marks)

……

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……

c) State four reasons why burning of vegetation as a method of land clearing is discouraged. (2 marks)

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SHINING STUDENT

5(a) State three factors influencing depth of cultivation. (1 ½ marks)

……

……

……

b)i) What do you understand by the term sub-soiling. (½ marks)

……

……

ii) State two reasons for sub-soiling
(1 mark)

……

……

……

6. State four features of a productive soil. (2 marks)

……

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7(a) State two deficiency symptoms of iron in crop production.
(1 mark)

……

……

b) Name two roles played by iron in crop production. (1 mark)

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……

8. State four advantages of using inorganic fertilizers over organic fertilizers. (2 marks)

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9(a) Name four sites to avoid when carrying out soil sampling. (2 marks)

……

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……

……

b) State four advantages of using vegetative materials for planting. (2 marks)

……

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10. Complete the table below (2 marks)

Plant part used for vegetative propagation material	Crop plant
1.Splits	
2.Bulbils	
3. Suckers	

4.Crowns	

11. (i) State four advantages of using certified seeds in crop production. (2 marks)

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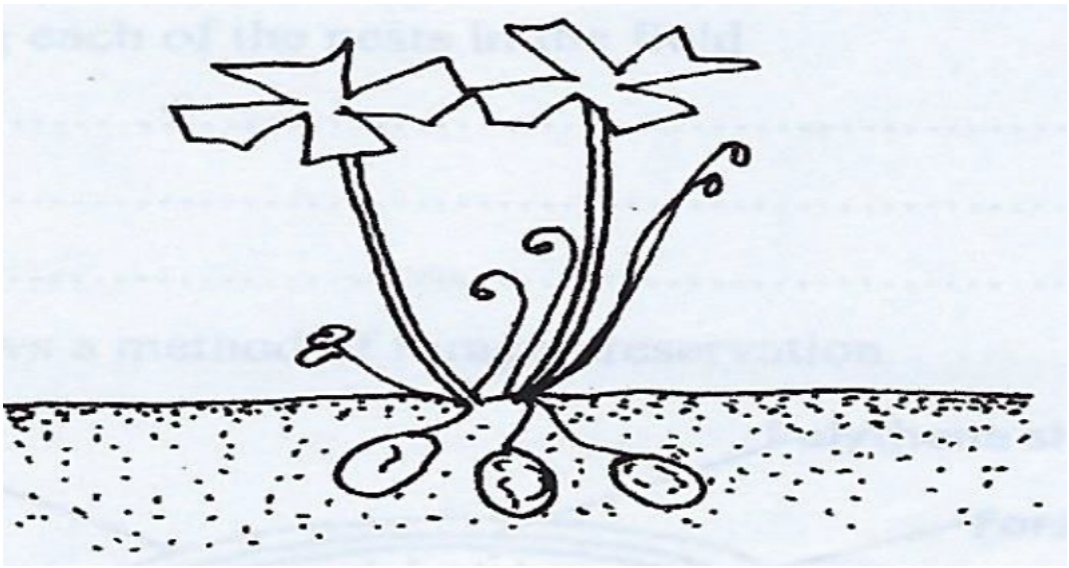
SECTION B (20 marks)

12. Study the diagram below carefully and answer the questions that follows.



(a)Identify the weed above. (1 mark)

……

b) State two factors which contributes to the competitive ability of the above weed. (2 marks)

……

……

……

c) State two harmful affects of the weed named in (a) above. (2 marks)

……

……

d) Name one basis in which weed above is classified (1 mark)

……

13. Two maize pests are shown in the diagram below. Study them and answer the questions that follow.

a) Identify the pests in the diagrams labelled X and Y. (2 marks)

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b).At what stage of maize production does each pest damage the crop. (2 marks)

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c). Give two ways of controlling each of the pests in the field. (2 marks)

……

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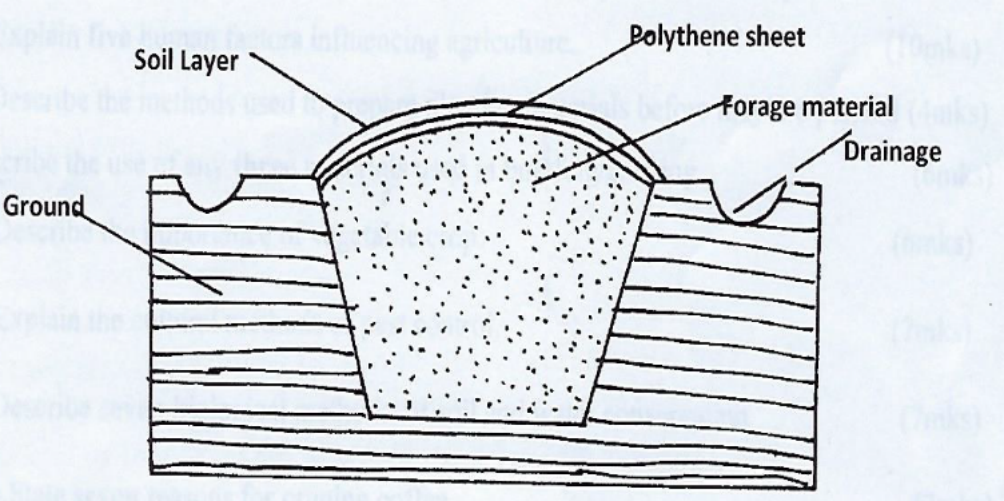
14. (a) The diagram below shows a method of forage preservation. (1 mark)

SHINING STUDENT



a.), Identify the structure above. (1 mark)

……

……

(b).State the form in which the forage is preserved as illustrated above. (1 mark)

……

……

(c), Name two other method of forage preservation apart from above. (2 marks)

……

……

15.(i) Define the following terms as used in agroforestry

a) coppicing
(1 mark)

……

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……

b).Pollarding (1 mark)

……

……

ii). Name any two forms of agroforestry (2 marks)

……

……

SECTION C. 40 MARKS

Answer any two questions from this section in the spaces provided after question 15.

16a) Explain five human factors influencing agriculture. (10 marks)

b). Describe the methods used to prepare planting materials before they are planted. (4 marks)

c) Describe the use of any three materials used in budding/grafting. (6 marks)

17a) Describe the importance of vegetable crop. (6 marks)

(b).Explain the cultural methods of pest control. (7 marks)

(c). Describe seven biological methods of soil and water conservation. (7 marks)

1 8(a) State seven reasons for pruning coffee .

SHINING STUDENT

(7 marks)

(b) Highlight seven effects of land fragmentation (7 marks)

(c)Explain the basic concepts of economics.
(6 marks)

NAME……INDEX NUMBER…….

CANDIDATE'S SIGNITURE ……DATE…….

POST-MOCK-2022

AGRICULTURE
FORM 4
PAPER 1
443/1

INSTRUCTIONS TO CANDIDATES

(a). Write your name and index number in the spaces provided.

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(b) Sign and write the date of the examination in the spaces provided above.

(c). This paper consists of three sections; A, B and C

(d) Answer all the questions in section A and B

(e) Answer any two questions in section C

(f) All the answers should be written in the spaces provided.

(g) Candidates should check the questions papers to ascertain that all the pages are printed as indicated and that no questions are missing.

(h) Candidate should answer all questions in English.

For examiner's use only

Section	Question	Maximum score	Candidate's score
A	1-11	30	
B	12-15	20	
C		20	
		20	
	TOTAL	90	

SECTION A (30 MARKS)

Answer all questions in this section in the spaces provided.

1, State four factors determining farming systems
(2 marks)

……

……

……

……

2. State four advantages of extensive farming system.
(2 marks)

……

……

……

……

3. State four importance of optimum temperature in crop production. (2 marks)

……

……

……

……

4(a) Name three physical properties of the soil. (1 ½ marks)

……

……

……

……

b) State three importance of soil structure on production. (1 ½ marks)

……

……

……

……

……

c) State four reasons why burning of vegetation as a method of land clearing is discouraged. (2 marks)

……

……

……

……

5(a) State three factors influencing depth of cultivation. (1 ½ marks)

……

……

……

b)i) What do you understand by the term sub-soiling. (½ marks)

……

……

ii) State two reasons for sub-soiling
(1 mark)

……

……

……

6. State four features of a productive soil. (2 marks)

……

……

……

……

7(a) State two deficiency symptoms of iron in crop production.
(1 mark)

……

……

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b) Name two roles played by iron in crop production. (1 mark)

……

……

……

8. State four advantages of using inorganic fertilizers over organic fertilizers. (2 marks)

……

……

……

……

9(a) Name four sites to avoid when carrying out soil sampling. (2 marks)

……

……

……

……

b) State four advantages of using vegetative materials for planting. (2 marks)

……

……

……

……

10. Complete the table below (2 marks)

Plant part used for vegetative propagation material	Crop plant

1.Splits	
2.Bulbils	
3. Suckers	
4.Crowns	

11. (i) State four advantages of using certified seeds in crop production. (2 marks)

……

……

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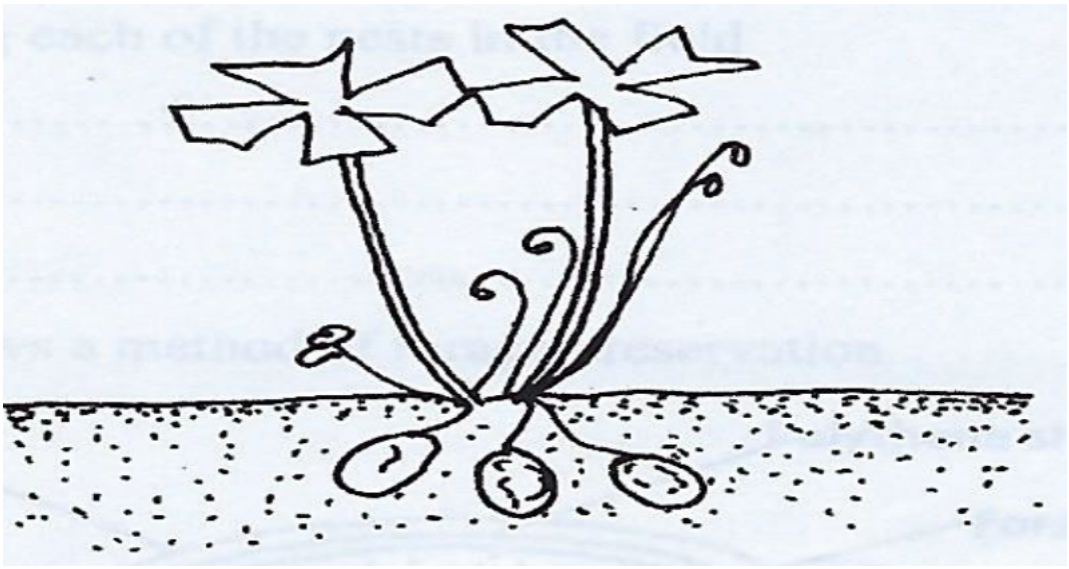
……

SECTION B (20 marks)

12. Study the diagram below carefully and answer the questions that follows.



(a)Identify the weed above. (1 mark)

……

b) State two factors which contributes to the competitive ability of the above weed. (2 marks)

……

……

……

c) State two harmful affects of the weed named in (a) above. (2 marks)

……

……

d) Name one basis in which weed above is classified (1 mark)

……

13. Two maize pests are shown in the diagram below. Study them and answer the questions that follow.

SHINING STUDENT

b) Identify the pests in the diagrams labelled X and Y. (2 marks)

……

……

……

……

b).At what stage of maize production does each pest damage the crop. (2 marks)

……

……

……

c). Give two ways of controlling each of the pests in the field. (2 marks)

……

……

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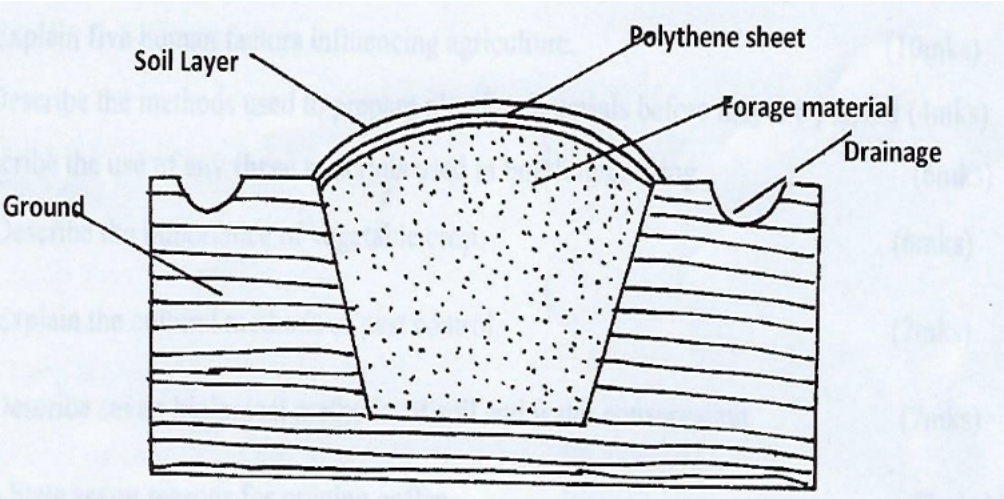
SHINING STUDENT

14. (a) The diagram below shows a method of forage preservation. (1 mark)



a.), Identify the structure above. (1 mark)

……

……

(b).State the form in which the forage is preserved as illustrated above. (1 mark)

……

……

(c), Name two other method of forage preservation apart from above. (2 marks)

……

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……

15.(i) Define the following terms as used in agroforestry

a) coppicing
(1 mark)

……

……

b).Pollarding (1 mark)

……

……

ii). Name any two forms of agroforestry (2 marks)

……

……

SECTION C. 40 MARKS

Answer any two questions from this section in the spaces provided after question 15.

16a) Explain five human factors influencing agriculture. (10 marks)

b). Describe the methods used to prepare planting materials before they are planted. (4 marks)

c) Describe the use of any three materials used in budding/grafting. (6 marks)

17a) Describe the importance of vegetable crop. (6 marks)

(b).Explain the cultural methods of pest control. (7 marks)

(c). Describe seven biological methods of soil and water conservation. (7 marks)

1 8(a) State seven reasons for pruning coffee .
(7 marks)

(b) Highlight seven effects of land fragmentation (7 marks)

(c)Explain the basic concepts of economics.
(6 marks)

NAME……INDEX NUMBER…….

CANDIDATE'S SIGNITURE ……DATE…….

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AGRICULTURE

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SHINING STUDENT

FORM 4

PAPER 2

443/2

INSTRUCTIONS TO CANDIDATES

(a). Write your name and index number in the spaces provided.

(b) Sign and write the date of the examination in the spaces provided above.

(c). This paper consists of three sections; A, B and C

(d) Answer all the questions in section A and B

(e) Answer any two questions in section C

(f) All the answers should be written in the spaces provided.

(g) Candidates should check the questions papers to ascertain that all the pages are printed as indicated and that no questions are missing.

(h) Candidate should answer all questions in English.

For examiner's use only

Section	Question	Maximum score	Candidate's score
A	1- 15	30	
B	16-19	20	
C		20	
		20	
	TOTAL	90	

SECTION A (30 Marks)

Answer all the questions in this section in the spaces provided.

1, Give two reasons why docking is an important practice in sheep management. (1 mark)

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2(a) Name the camel breed that is adapted to cooler regions and has wooly body covering. (½ mk)

……

(b) Give one reason why Fresian's milk is more whitish while jersey milk is yellowish . (½ mk)

……

……

(c), Give any two uses of litter materials in a poultry house. (1 mark)

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……

3. Give four advantages of using stones as construction materials. (2 marks)

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4. Outline three methods of stocking a bee hive. (1½ mk)

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5. List four ways in which vaccines are administered to an animal. (2 marks)

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6. Give four predisposing factors to livestock diseases. (2 marks)

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7. Give four functions of proteins in the body of an animal. (2 marks)

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8, Name the tool used together with each of the following tools. (1 mark)

(a),Canula(b) Brace

……

……

……

9. Differentiate between flushing and steaming up in livestock management. (2 marks)

……

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10. State two roles of drones in a bee colony. (1 mark)

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……

11. State two microbial activities that occur in the rumen. (1 mark)

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12. Name three pests bees
(1½ mk)

……

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……

13. Name four mineral deficiency livestock disorders. (2 marks)

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SHINING STUDENT

14. What do you understand by the term raddling as used in sheep management. (1 mark)

……

15. Name one intermediate host in life cycle of a liver fluke. (1 mark)

……

……

16. Give any three maintenance practices in a green house.
(1½ mk)

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17, Give two faults of ignition system, (1 mark)

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18. Give four conditions that the animal structure should meet in order to help in controlling livestock disease.
(2 marks)

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19. Give six signs to show that a cow is on heat. (3 marks)

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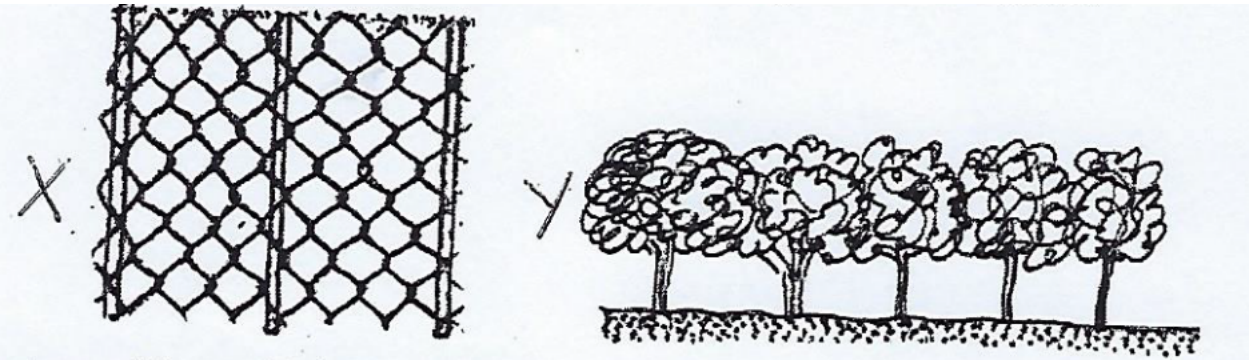
SECTION B (20 MARKS)

Answer all the questions in this section in the spaces provided.

20. Study the illustration of fences below and answer the questions that follow.



(a.) Name the type of fences illustrated above. (2 marks)

……

……

b) Name the correct tool used in maintenance of fence Y. (1 mark)

……

……

c). State three advantages that fence Y may have over fence X. (3

marks)

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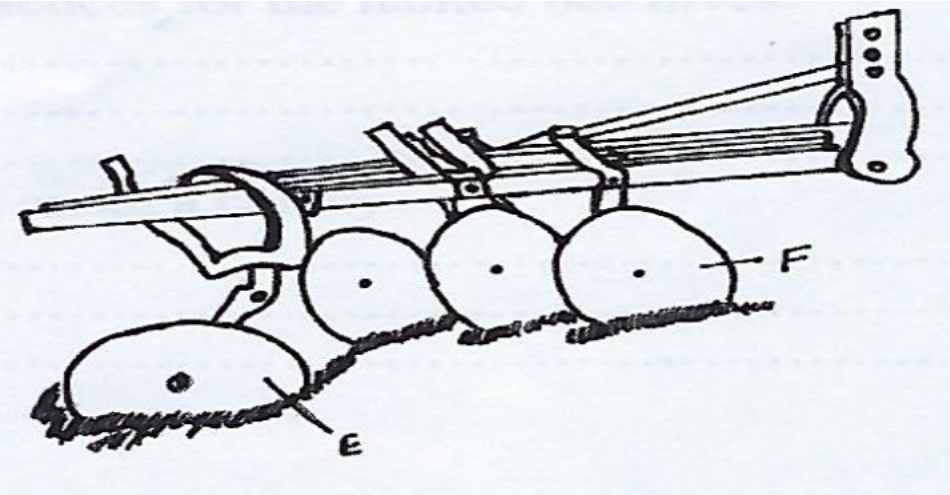
21, The diagram below represents an implement



i.) Identify the implement.
(1 mark)

……

……

ii). Name the parts labelled E and F give one function of each. (2 marks)

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iii) State four maintenance practices carried out on the implement shown in the diagram. (4

marks)

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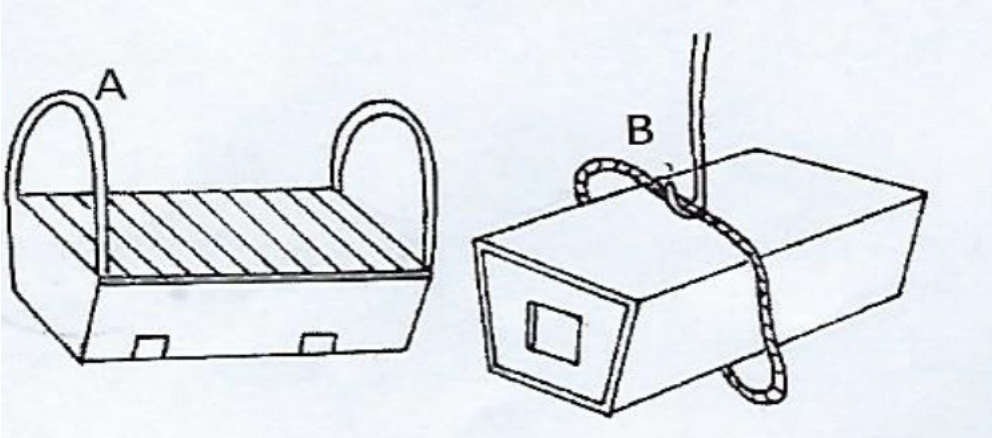
……;

22. The diagram labelled A and B below shows two types of bee hives. Study them carefully and answer the questions



(i).Identify the types of beehives A and B. (2 marks)

……

……

……

(ii). State two advantages of A over B. (2 marks)

……

……

……

(iii) Give two maintenance practices for the named bee hives. (2 marks)

……

……

(iv) Give one type of bee that make a colony. (1 mark)

……

SECTION C (40 marks)

Answer any two questions from this section in the spaces provided.

23. (a) Describe eight difference between petrol and diesel tractor engines. (8 marks)

(b) Describe the principle of a four stroke (four –cycle) petrol engine.
(12 marks)

24. (a). Write short notes on foot and mouth disease under the following sub-headings.

(i) Casual organism (1 mark)

(ii) Mode of transmission (1 mark)

(iii) Symptoms of attack (4 marks)

(iv) Control measures (4 marks)

(b). State five importance of keeping livestock healthy (5 marks)

(c) State five general method of disease control
(5 marks)

SHINING STUDENT

25. (a) Describe the procedure of establishing a fish pond.
(10 marks)

(b) Describe the life cycle of a three host-tick
(5 marks)

(c) State five factors affecting digestibility
(5 marks)

NAME……INDEX NO……

SCHOOL…….. DATE……

SIGN……

231/3
BIOLOGY
PAPER 3
PRACTICAL
POST-MOCK.2022
TIME: 1 ¾ HOURS

Kenya Certificate of Secondary Education

INSTRUCTIONS TO CANDIDATES

- *Write your name and index number in the spaces provided at the top of this page*
- *Answer ALL questions*
- *You are required to spend the first 15minutes of the 1 ¾ hours*

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SHINING STUDENT

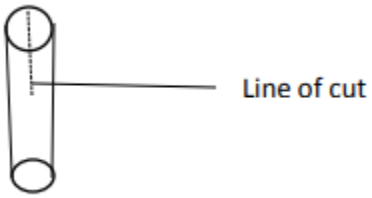
allowed for this paper reading the whole paper carefully before commencing your work.

- *Answers must be written in the spaces provided in the question paper*
- *Additional pages must not be inserted.*

FOR EXAMINERS USE ONLY

Question	Maximum score	Candidate's score
1	14	
2	13	
3	13	
Total score	40	

1.You are provided with a specimen labelled K,Using the scapel cut 8 cm of the petiole from the side close to the lamina.cut 2 pieces each measuring 4cm. using a scapel cut a slit halfway through the middle of each piece as shown in the diagram below.



Place one piece in solution labelled A and the other in solution labelled B.Allow the set up to stand for 30 minutes.

a) After 30 minutes remove the pieces and press each gently between the fingers.

(i). Record your observations (2mks)

solution A ……

……

Solution B

……

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……

(ii) Account for the observations .made in the petiole dipped in solution A. (3mks)

……

……

……

……

b) Explain the role of the physiological process identified above in plant nutrition (2mks)

……

……

c) State the **sub-division** to which the plant from which specimen **K** was obtained belongs. (2mks)

……

……

d) State **TWO** observable features that adapt specimen K for **gaseous exchange** (2mks)

……

……

……

e) cut a transverse section of the petiole , using a hand lens observe the arrangement of the vascular bundles and make a diagram of the same. (3mks)

2. You are provided with two bones labelled .Examine them and answer the questions below

a) Giving reasons, identify bones **W and Q** (4mks)

(i) Identity of **bone W**

……

Reasons

……

……

Identity of **bone Q**

……

Reasons

……

……

b) State TWO adaptations of specimen **Q** (2mks)

……

……

(c) Bone Q and Bone W articulate , draw a diagram showing how the two bones articulate. (5mks)

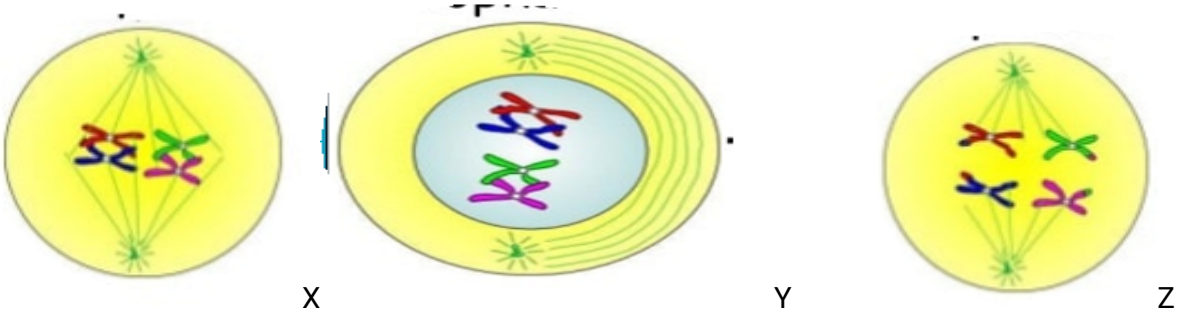
(d) State the significance of the **articulation** of the TWO bones. (2mks)

……

……

3.The photograph below show stages in cell division.

SHINING STUDENT



X Y Z

a)Name the stages represented by the cells labelled X, Y and Z (3mks)

X……..

Y……..

Z……

b) State the significance of the above cell division to an organism. (3mks)

……

……

……

……

c) Name **TWO** regions in higher plants where the above process occur (2mks)

……

……

d) Explain the events that take place in the phase after phase Y. (3mks)

……

……

……

……

e) State the importance of the above in a member of a species (2mk)

……

……

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SHINING STUDENT

BIOLOGY 2022.

Kenya Certificate of Secondary Education (K.C.S.E)

231/3

BIOLOGY

PAPER 3

PRACTICALS

CONFIDENTIAL INSTRUCTIONS TO SCHOOLS

-The information contained in this paper is to enable the head of school and teacher in charge of Biology to make adequate preparations for this year's Biology mock practical examination. NO ONE ELSE should have access to this paper or acquire knowledge of its contents. Great care must be taken to ensure that the information herein does not reach the candidates either directly or indirectly.

-The Biology teacher is NOT expected to perform the experiments

- The apparatus required by each candidate for the Biology mock practical examination are set out on the next page. It is expected that the ordinary apparatus of a Biology laboratory will be available.

- The Biology teacher should note that it is his/her responsibility to ensure that each apparatus acquired, for this examination agrees with specifications on the next page.

SHINING STUDENT

Each candidate will require the following:

1. Freshly plucked kale leaf with a petiole at least 10cm long.
2. 50ml of 2M sodium chloride solution in beaker labeled **solution A**.
3. 50 ml distilled water in a beaker labeled **solution B.**
4. 2 petri dishes.
5. Scapel.
6. Hand lens.
7. Ruler.
8. Bone **W**, which is **Thoracic vertebrae.**
9. Bone **Q**, which is **Rib.**

NAME……CLASS……

SCHOOL……..SIGNATURE……

231/1

KENYA CERTIFICATE OF SECONDARY SCHOOL

POST-MOCK 2022

TIME: 2HOURS

INSTRUCTIONS

a. Write your name, school and class in the spaces provided

b. Answer **all** the questions in the spaces provided.

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SHINING STUDENT

c. This paper consists of **9** printed pages

d, Candidates should check the question paper to ascertain that all the pages are printed as indicated and no questions are missing.

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1-31	80	

1. Name **two** branches of microbiology (2marks)

……

……

2. Give **two** important functions of a fruit with regard to a plant
(2marks)

……

……

3. Construct a food chain with the following:
(1mark)

Orange fruit, large bird, fruit fly, small bird

4. A student wrote the scientific name of Baobab tree as adansonia Digitata.

(a) Identify two mistakes made by the student
(2marks)

……

……

(b) Identify the species name (1mark)

……

5. State the differences between light and electron microscopes in terms of the following: (2marks)

(a) way of illumination

……

(b) Source of illumination

……

……

(c) State two factors to consider the type of microscope to be used in a given biological investigation
(2marks)

……

……

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6. Explain how parasitism differ from predation

(2marks)

……

……

7. (a) Explain how papain is used as a meat tenderizer in food processing industries

(2marks)

……

……

(b) Name a plant excretory product that is toxic to plasmodium

(1mark)

……

……

8. Distinguish between ilium and ilium

(1mark)

……

……

9. Explain why Egyptian mummies are not regarded as fossils

(1mark)

……

……

10. Explain what would happen to digestion and blood sugar regulation if the pancreatic duct of a mammal was blocked.

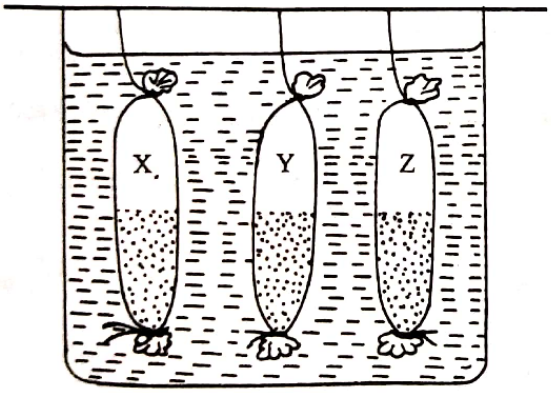
(3marks)

……

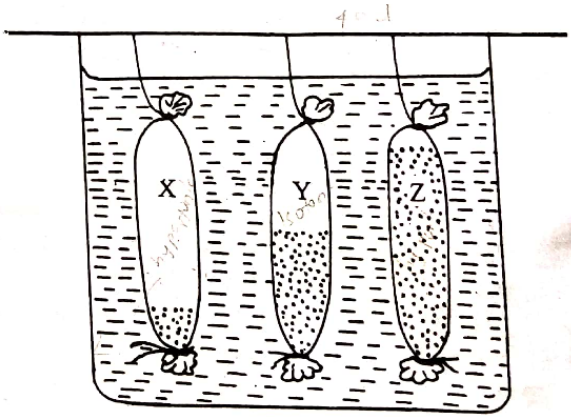
……

……

11. Equal amounts of three different sugar solutions were placed in the visking tubings X, Y and Z. the tubings were placed in a beaker of water containing 5% sugar solution. The set up was left for two hours. The results were as shown below.



Beginning of experiment



End of experiment

(a) Name the process being tested in this experiment (1mark)

……

(b) Account for the observation (3marks)

……

……

……

……

12. (a) Define the term allergy (1mark)

……

(b) Distinguish between allograft and isograft

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(2marks)

……

……

13. State **two** adaptations of the placenta to its function

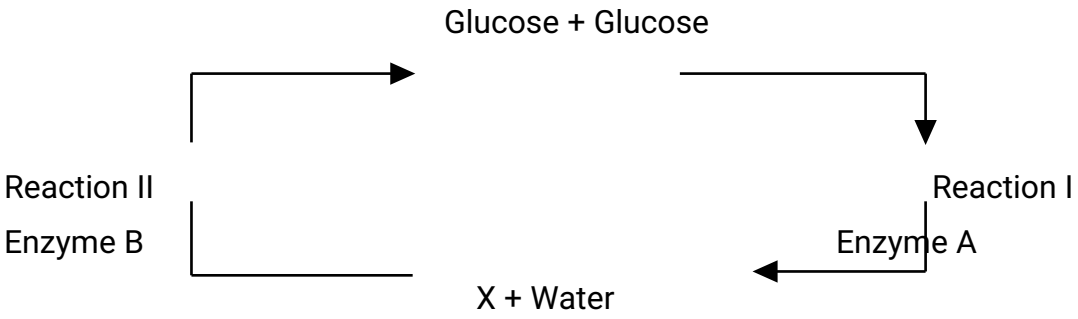
(2marks)

……

……

……

14. The diagram below shows chemical reactions I and II which are controlled by enzymes.



(i) Into which class of carbohydrates is X? (1mark)

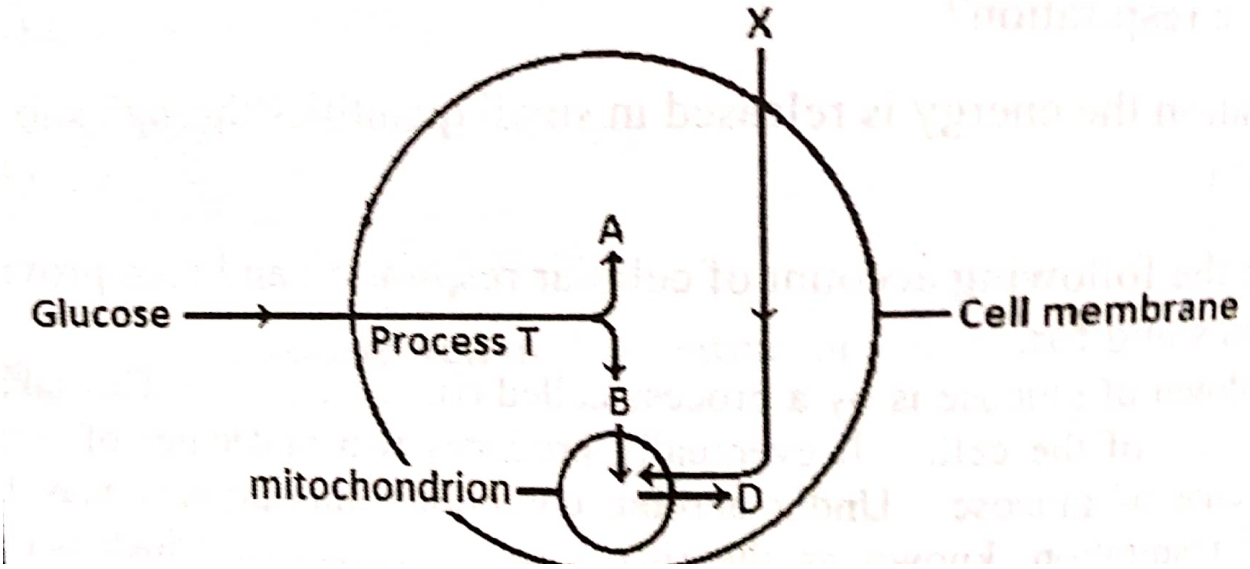
……

(ii) Name reaction I and enzyme A (2marks)

Reaction I……..

Enzyme A……..

15. The figure below illustrates aerobic respiration in a cell



(a) Name the raw material named X and products A and B

(3marks)

……

……

….

(b) Identify process T

(1mark)

……

……

16. Name a characteristic in man controlled by multiple alleles

(1mark)

……

17. Some scientists argue that Lamarck's theory is false and not valid. What is your

scientific view on this?
(3marks)

……

……..

18. State **two** natural ways in which in which seed dormancy can be terminated
(2marks)

……

……..

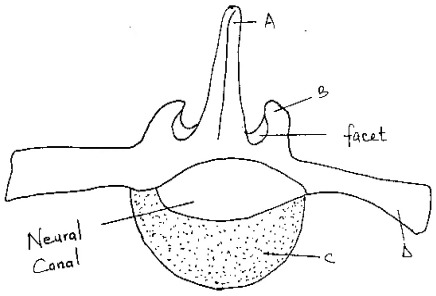
19. Explain why the temperate bears have thick adipose tissues
(2marks)

……

……

……..

20. Study the diagram shown below of the anterior view of a lumbar vertebra of a mammal.



(a) Name the parts labelled: A, and B, (2 marks)

……

……

…..

(b) State the adaptation of the part labelled **D**. (1 mark)

……

21. Distinguish between parthenocarpy and parthenogenesis (2marks)

……

……

……

22. State **three s**ymptoms of menopause

(3marks)

……

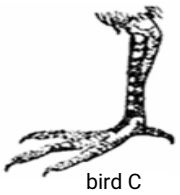
……

….

23. The figure below shows feet of various birds. Study the diagram and answer the questions that follow.

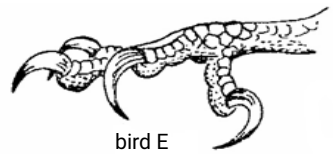
bird A

bird B



bird C

bird D



bird E

(i) Name the type of evolution represented by the diagrams. (1 mark)

……

(i) Using Darwin's theory of evolution, explain how the feet of **bird E** would have evolved.

(3 marks)

……

……

……

24. Describe how contraction of the diaphragm muscles leads to inhalation

(4marks)

……

……

……

25. Explain the effect of burning of fossil fuels on the health of humans
(3marks)

……

……

……

26. State **two** distinguishing characteristics of members of the kingdom Monera
(2marks)

……

……

27. State **two** structural differences between the xylem and the phloem
(2marks)

……

……

…

28. Explain why seeds buried deep in the soil fail to germinate
(2marks)

……

……

……

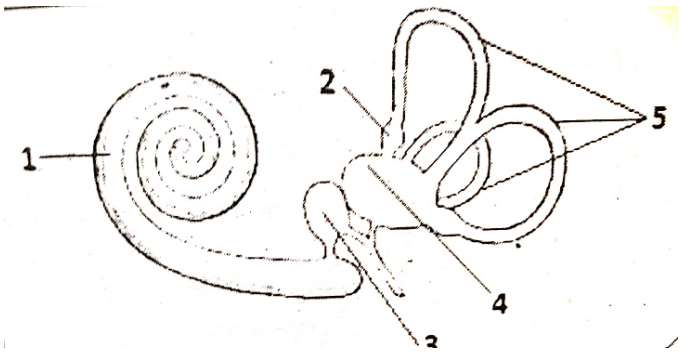
29. Explain how starch provides energy for living organisms
(2marks)

……

……

….

30. The diagram below shows part of the inner ear



(a) Name the apparatus

(1mark)

……

(b) State the function of the apparatus

(1mark)

……

……

(c) Name the parts labeled 1 and 5 (2marks)

……

……

31. (a) state the role of the following hormones during lactation

(2marks)

(i) Prolactin

……

……

(ii) Oxytocin

……

……

(b) Other than the role mentioned above, give another role of oxytocin in the body

SHINING STUDENT

of a female

(1mark)

……

THIS IS THE LAST PRINTED PAGE

Name……Index No. …….

School ……..Sign……

231/2

BIOLOGY

PAPER 2 (THEORY)

POST-MOCK 2022

Time: 2 HOURS

POST-MOCK 2022

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BIOLOGY 2022

Kenya Certificate of Secondary Education (K.C.S.E)

231/2

BIOLOGY PAPER 2 (THEORY)

2HRS

INSTRUCTIONS TO CANDIDATES

- Write your name, index number and the name of the school in the space provided.
- This paper consists of 2 sections A, and B
- Answer ALL the questions in section A.
- In section B, answer question 6 **(Compulsory)** and either question 7 or 8 in the spaces provided after question 8.

FOR EXAMINERS USE ONLY

Section	Questions	Maximum Score	Candidates Score
A	1	8	
	2	8	
	3	8	
	4	8	

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	5	8	
B	6 7 8	20 20 20	
TOTAL SCORE		80	

This paper consists of 10 printed pages

Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing

SECTION A.

1. (a) Viable seed may not germinate even when provided with favorable condition. State the importance of the above phenomena. (2mks)

……

……

……

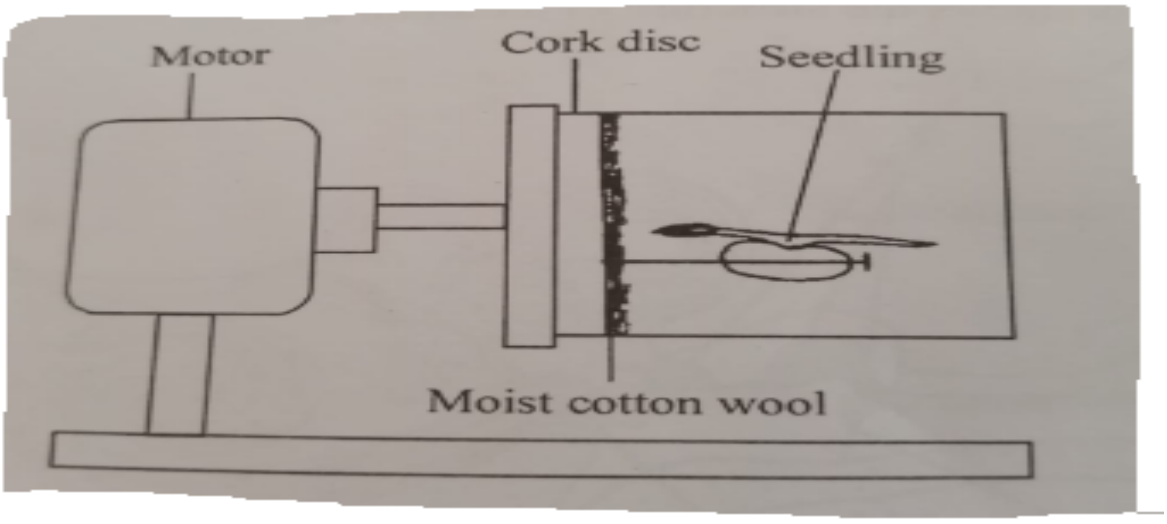
(b) Monocotyledonous plants do not undergo secondary growth. Explain. (2mks)

……

……

……

(c) In the diagram below, a bean seedling was pinned in a horizontal position inside a clinostat.



(i) Explain what you would expect to observe after 48 hours if the clinostat was not rotating.

(2mks)

……

……

……

(ii) Explain what you would expect to observe after 48 hours if the clinostat was rotating slowly.

(2mks)

……

……

……

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2. (i) Explain the concept of the negative feedback mechanism.
(3mks)

……

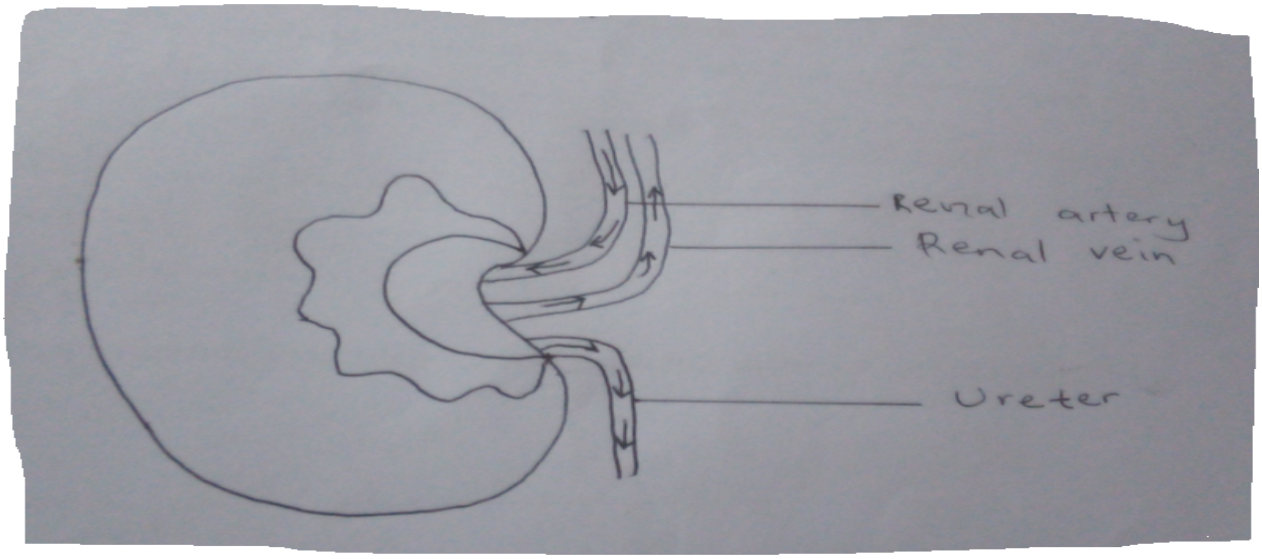
……

……

……

……

(ii) Study the diagram below and answer the question that follows.



On the organ above, draw a small circle and label it **X** to show where the adrenal gland is located.

(1mk)

(i) Explain the effect of the hormone secreted by the adrenal gland in blood sugar regulation.

(2mks)

……

……

……

……

(ii) Name two diseases that affect organ labeled A.

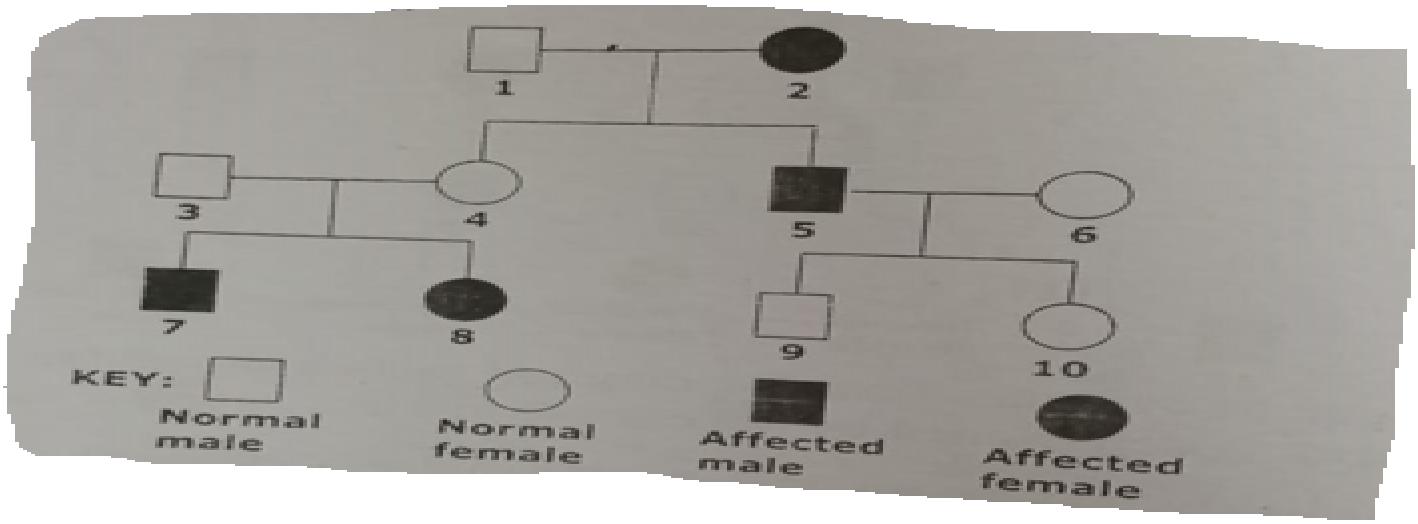
(2mks)

……

……

……

3. The pedigree diagram below show part of a family tree in which the inherited condition of phenylketonuria occurs.



(a) Identify and explain one piece of evidence from this family tree to show that the allele for phenylketonuria is a recessive to allele for the normal condition.
(2mks)

……

……

……..

(b) If individual 10 married a man who is the heterozygous for the gene, what is the probability that their first child will be affected?
(2mks)

……

……

……

(c) A garden pea plant was crossed with a dwarf garden pea plant and all the offspring's were tall. Using later T to represent the gene for tallness, determine the genotype of the F_2 if the F1 were test crossed.
(4mks)

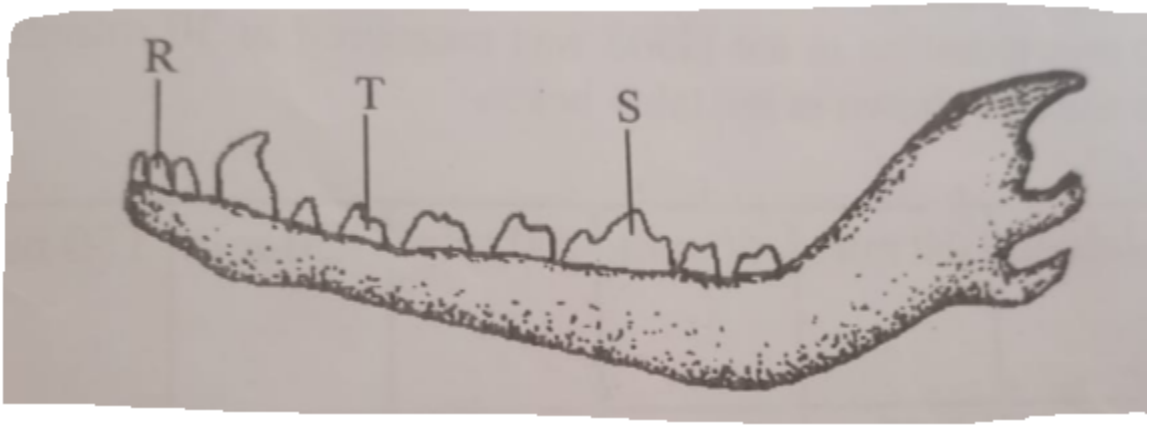
4. (i) Distinguish between dentition and dental formula.
(2mks)

……

……

……

(iii) The diagram below represents the lower jaw of a mammal.



(a) Name the mode of nutrition of mammal whose jaw is shown.
(1mk)

……

……

(b) State one structural and one functional difference between the teeth labeled R and T.
(2mks)

……

……

……

……

……

……

(c) ((i) Name the tooth labelled S.

(1mk)

……

……

(ii) State how the tooth named in C (i) above is adapted to its function.

(2mks)

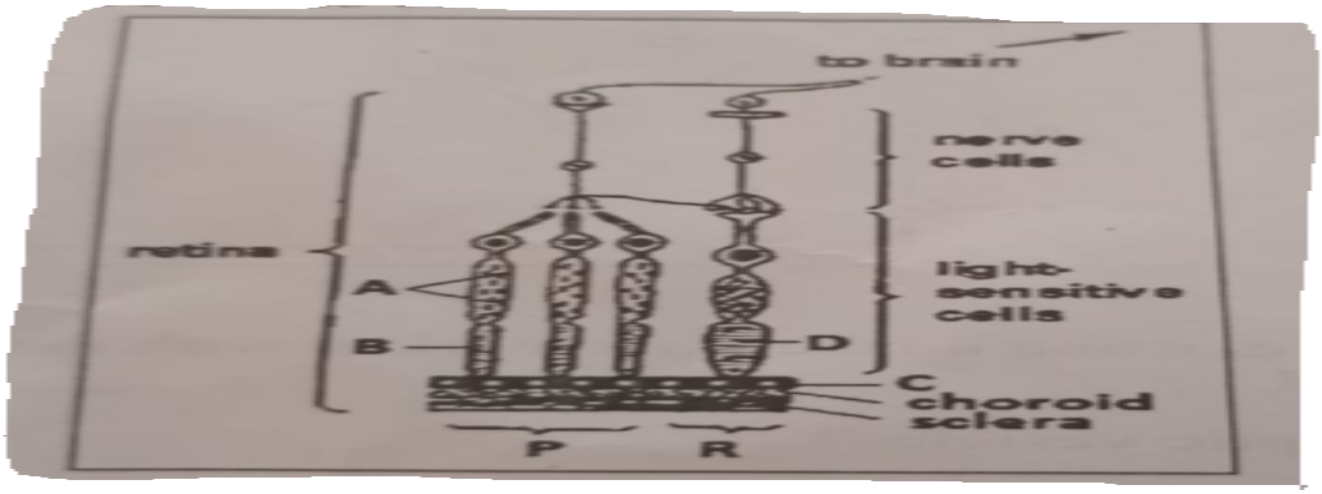
……

……

……

……

5. The figure bellow is a cross-section of retinol cells of a mammalian eye.



(a) Identify the retinol cells labeled P and R. (2mk)

……

……

…

(b) Label each of the parts marked A, B, C and D.

(2mks)

……

……

……

(c) Based on the diagram, explain why it takes long for the eye to adjust when one move from a

Lit room to a dark room. (3mks)

……

……

……

(d)State structural difference between cell P and cell R.

(1mk)

……

……

……

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SECTION B.

6. The pressure in the flow of blood in a mammal was determined at two different vessels; X and Y. The data was taken within a period of 1 minute and was presented as follows.

Time in seconds	Blood pressure in	
	Vessel X	Vessel Y
0	160	320
10	165	360
20	170	320
30	180	400
40	170	360
50	160	320
60	160	360

(a) Plot the graph of blood pressure in both vessels against time in the same axis. (7mks)

(b) Describe the trend of each curve. (2mks)

……

……

……

(c) From the graph, suggest the possible identity for:

(i) Blood vessel X. (1mk)

……

……

(ii) Blood vessel Y. (1mk)

……

……

(d) Give reason for your answer in (c) (i) and (ii) above.
(2mks)

……

……

…… (e)Explain a factor that would result in to an increase in blood pressure in both the blood vessels above.

(2mks)

……

……

…

(f) State two structural differences between the two vessels mentioned in C above.
(2mks)

……

……

……

(g) Name two diseases of the circulatory system in humans.
(2mks)

……

……

……

(h) Other than, transport of substances state one other function of blood.
(1mk)

……

……

……

7. (a) Discuss the economic importance of bacteria.
(10mks)

(b) Discuss the adaptation of *Schistosoma mansoni* to its survival.
(10mks)

8. (a) Describe the photosynthetic theory.
(10mks)
(b) Describe gaseous exchange in terrestrial plant.
(10mks)

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SHINING STUDENT

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SHINING STUDENT

MUGOIRI ZONE

BUSINESS STUDIES PAPER II 565/2

1.a)Explain the benefits that a developing country may derive from preparing a proper development plan
(10mks)

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b) Explain five factors that encourages entrepreneurship in Kenya today.
(10mks)

2.a) Use the following balances from Kenbrick company to prepare Journal entries on 1st January 2016.

	Shs.
Motor vehicle	230,000
Machinery	40,000
Creditors	10,000
Debtors	5000
Cash in hand	20,000
Stock	10,000
Insurance prepaid	5,000
Bank	25,000
Capital	660,000
Premises	33,500

b) Explain five ways through which inflation may be controlled other than using monetary or fiscal policies.
(10mks)

3.a) Explain five factors to consider when determining the goods and services to produce in the market
(10mks)

b) Describe five business malpractices that consumers need to be protected against by the government.

(10mks)

4.a)Peter who runs a retail store had the following assets and liabilities as at 31st March 2017

	Shs
Premises	100,000

Debtors		4,000
Creditors	16,000	
Stock	2000	
Bank	60,000	
Cash in hand	20,000	
Loan from AFC		50,000
Capital	120,000	

During the month of April, the following transactions took place

April 1 – Sold goods at a cost of shs 2000 in cash

2 – Paid creditors shs 8000 in cash.

10 – Received shs 2000 from debtors in cash

15 – Bought a motor van for shs 35,000 paying by cheque

25 – Purchased goods worth shs 15000 and paid by cheque

Required:

Prepare a balance sheet as at 25th April 2017

b) Describe five external factors that may negatively affects the operations of the business.
(10mks)

5.a) Omondi operates a retail business in his home village. Explain five methods he may use to determine prices for his goods other than the forces of demand and supply.
(10mks)

b) Explain the benefits of the pooling of risks to an insurance company.
(10mks)

6.a) Describe five reasons for the increased use of cell phones in banking.
(10mks)

b) The following balance sheet was prepared by the Accounts Clerk of Upenzi Traders.

Upenzi traders

Balance sheet as at 31 December

SHINING STUDENT

	Shs		Shs
Land and buildings		Capital	900,000
770,000		Add net profit	28200
Motor vehicles			
600,000		1,182,000	
Furniture		1 CDC Loan	
100,000		400,000	
Stock of goods	90,00	Creditors	47,000
Stock of stationery	12,000	Salaries owing	13,000
Debtors	58,000	Bank	8000
Cash in hand			
160,000		1,650,000	
Insurance advance	4,000		
	1,650,000		

Determine the following

a) Working capital (2mks)

b) Return on capital (2mks)

c) Current ratio (2mks)

d) Capital employed (2mks)

e) Borrowed capital (2mks)

POST MOCK 2022

BUSINESS STUDIES
565/1
Time: 2hours

NAME: ……..ADM NO.:……CLASS ……

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SHINING STUDENT

SIGNATURE:……..**DATE**:……TEACHER……..

Instructions

1. *Write your name, index number, school and signature in the spaces given above.*
2. *Sign and write the date of the examination in the spaces provided above*
3. *Answer all the questions.(25 questions)*
4. *All answers should be written in the space provided below each question.*
5. *Candidates should check the question paper to ascertain that all the questions are printed.*
6. *All questions should be answered in English.*

For official use only.

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Marks															

Question	16	17	18	19	20	21	22	23	24	25
Marks										

TOTA L

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SHINING STUDENT

1. State **four** features of capital as a factor of production. (4mks)

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2. Outline **four** reasons why choice is inevitable in the satisfaction of human wants. (4mks)

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3. Highlight **four** reasons for which businesses should observe ethical practices. (4mks)

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SHINING STUDENT

4. Indicate the qualities of an office worker described by the following statements. (5mks)

	Description	Quality
i)	Ability to convince others in a meeting without hurting them.	
ii	Ability to create and implement ideas.	
iii	Maintaining the good name of the organization.	
iv	Performing duties with precision.	
v	Ability to consider all possibilities and come up with right decision.	

5. Fill in the missing gaps in the table below. (4mks)

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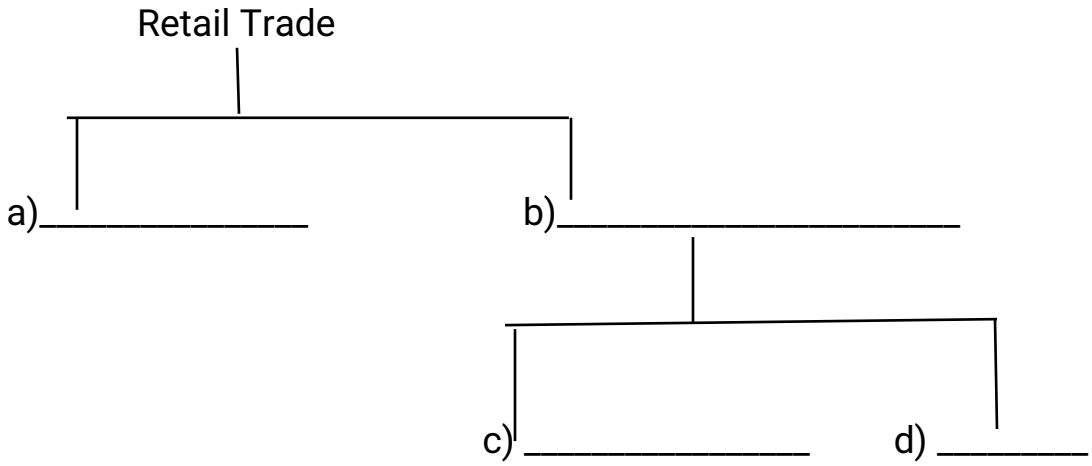

6. Highlight **four** activities that may be carried out in a security exchange market. (4mks)

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7. List **four** ways in which the government regulates business activities.

   (4mks)

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8. Outline **four** ways in which the nature of goods would influence the

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choice of the means of transport. (4mks)

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9. State the line of communication involved in each of the following: (4mks)

a) The manager of Safaricom Ltd talking to the manager of Airtel ltd.

_____

b) An accounts clerk asking for time off from the boss

_____

c) The sales manager giving instructions to the secretary of the finance manager_____

d) The receptionist giving explanation to the production manager.

_____

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10. Highlight **four** circumstances under which a cheque may be used as a means of payment. (4mks)

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11. Give **four** features of a bonded warehouse. (4mks)

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12. Uwezo traders acquired a building valued at Sh. 1,200,000 on January 1st 2020. The building was insured with three insurance companies: Sanlam, Jubilee, and Britam for 250,000, 300,000 and 450,000 respectively. In May 2020, fire damaged the building, causing Uwezo traders to suffer a loss of 30% of the value of the building.

Determine the contribution made by each company to compensate

Uwezo traders for the loss. (4mks)

13. Using a diagram, show how the forces of demand and supply determine the market price of a commodity in the market. (4mks)

14. State **four** reasons why new industries tend to be attracted to well established towns. (4mks)

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15. State **Four** basic features of a market. (4mks)

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16. Outline **four** ways in which households contribute to the national income of a country. (4mks)

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17. Fill in the missing figures. (3mks)

Fixed Assets	Current Assets	Long term Liabilities	Short term Liabilities	Capital
500,000	330,000	**(a)**	120,000	510,000
(b)	400,000	135,000	20.000	600,000
150,000	20,000	240,000	100,000	**(c)**

18. Outline **four** factors that may account for a high population growth rate in Kenya. (4mks)

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19. Outline **four** qualities of money that enables it to facilitate the exchange of goods and services. (4mks)

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20. Njenga traders had the following assets and liabilities as at January 2014.

Machinery	350,000
Debtors	45,000
Stock	25,000
Cash	7,500
Creditors	48,000

Additional capital introduced during the year was 24,000. Drawings made during the year was 20,000. Net profit was 34,500.

Determine the capital as at 31st December 2014. (4mks)

21. Outline **four** merits of indirect taxes. (4mks)

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22. The table below shows general price changes over a period of five years.

Year	Price (shs)	CPI
2010	90.00	
2011	100.80	
2012	103.50	
2013	105.30	
2014	108.00	

Using 2010 as the base year, determine the consumer price index for the years 2011, 2012, 2013, and 2014. (4mks)

23. Name **four** levels of economic integration. (4mks)

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24. Outline **four** circumstances under which a manufacturer would use informative advertising. (4mks)

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SHINING STUDENT

25. For each of the following transactions, indicate the account to be debited and account to be credited. (4mks)

Transaction	A/C DR	A/C CR
a) Started a business with cash money.		
b) Bought stock on credit from Watu traders.		
c) Used a personal computer to clear Watu trader's debt.		
d) Took stock from the business to pay the wife's hospital bill.		

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SHINING STUDENT

MOKASA II JOINT EXAMINATION
Kenya Certificate of Secondary Education

565/2 - BUSINESS STUDIES – Paper 2

July 2018 – 2 hours

Name: …… Index No.: ……..

Candidate's Signature: …….. Date: ……

Instructions to candidates

(a) *This paper consists of **six** questions.*
(b) *Answer any **five** questions.*
(c) *Answers should be written in the spaces provided after question **six.***
(d) *All questions carry equal marks.*
(e) This paper consists of 15 printed pages.
(f) Students should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(g) Students should answer the questions in English.

For Teacher's Use Only

Question	Maximum score	Candidate's Score
	20	
	20	
	20	
	20	

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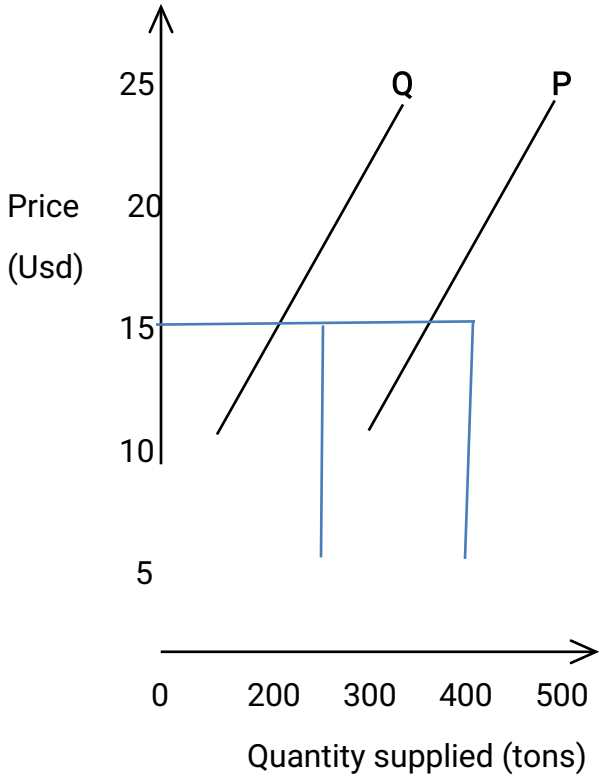
SHINING STUDENT

	20	
	Total Score	

1. a) Explain **five** ways in which the government of Kenya can promote entrepreneurial

development in her economy. (10marks)

b) The diagram below shows supply curves of two producers of maize in different countries. Highlight **five** reasons why producer **P** suppliers more maize than producer **Q** at the same price. (10marks)



2. a) Explain **five** means of written communication.
(10marks)

b) Kaptagat traders had the following assets and liabilities on 31st December, 2017

	Sh.	
Creditors	280,000	
Equipment's	1,920,000	
Furniture	103,550	
Stock	800,000	
Debtors	240,500	
Bank overdraft	401,950	
Cash in hand	291,000	
Capital		?

During the first week of January 2018, the following transactions took place.
2018
Jan 1. Bought more goods from NCPB on credit for sh. 330,800
2. Purchased a computer and accessories by cheque sh.50,000
4. Paid creditors by cheque sh.200,000
5. Received sh 140,500 by cheque from debtors.
6. Kaptagat traders put in an extra sh.500,000 into the business, sh.300,000 by cheque and sh.200,000 in cash.

7. Kaptagat traders paid the outstanding bank overdraft using the cash from the cash till

Required.
i). Ascertain Kaptagat traders capital as at 1st January, 2018
(4marks)

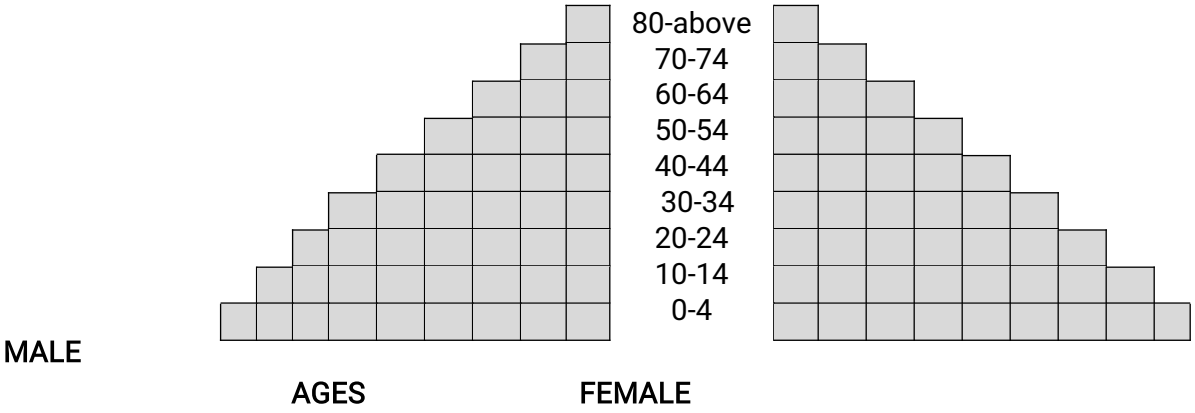
ii). Draw up Kaptagat traders Balance sheet as at 7th January 2018 after the above transactions have been completed.
(6marks)

3. a) Explain **five** differences between a Public limited company and Private limited company. (10marks)

b) Explain **five** features of non-bank financial institutions.
(10marks)

4. a) The following figure shows a population structure of a developing country in a given

year.



Explain **four** challenges faced by a country with the above population structure.

(8marks)

b) Outline **six** benefits Kenya derives from being a member of East African community.

(12marks)

5. a) Explain **five** factors that may make a firm to locate near the source of its raw materials.

(10marks)

b) Explain **five** benefits that a county government may derive from preparing a proper

development plan (10marks)

6. a) Explain **five** challenges faced by a buyer who uses credit cards in making payment for

goods and services.
(10marks)

b) The following balances were extracted from the books of Mutei traders on 31st December, 2017.

	Shs
Gross profit	800,000
General expenses	180,000
Buildings	1,250,000
Equipment	380,000
Capital	1,400,000
Furniture	117,000
Insurance	48,000
Stock	25,000
Commission income	125,800
Discount allowed	55,000
Discount received	56,200
Bank Overdraft	79,000
Salaries and wages	320,000
Creditors	90,000
Carriage outwards	60,000
Debtors	65,500
Carriage inwards	34,500
Cash	51,000

Prepare:
a). Profit and loss account for the period ended 31st December, 2017.

SHINING STUDENT

(5marks)

b). Balance sheet as at 31st December, 2017.

(5marks)

POST-MOCK 2022

BUSINESS STUDIES
565/2
Time: 2hours 30Min.

NAME: ……..ADM NO.:……CLASS ……

SIGNATURE:……..DATE:……TEACHER……..

Instructions to candidates.

26. *Write your name, index number, school and signature in the spaces given above.*
27. *Sign and write the date of the examination in the spaces provided above*
28. *This paper consists of 6 questions. Answer any five questions.*
29. *All answers should be written in the answer booklet provided.*
30. *Candidates should check the question paper to ascertain that all the questions are printed.*
31. *All questions should be answered in English.*

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Question	1	2	3	4	5	6
Marks						

TOTA L

1. a) Explain **five** reasons for the popularity of using internet in product promotion. (10mks)

   b) Explain **five** services that the central bank of Kenya may offer to commercial banks. (10mks)

2. a) Explain **five** trends in business ownership. (10mks)

   b) On 1st April 2020, Kifaru traders had the following balances:

   Bank 15,000 (CR)

   Cash 25,000 (DR)

   April: 3rd Paid wages in cash Ksh. 15,000

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5th Bought goods worth Ksh. 750 in cash.

6th Received cheques from the following debtors after allowing a 2% discount in each Case, Roiki Sh. 980, Kombo Sh. 1960.

8th Chebe paid Kifaru by a cheque of Sh. 1,000.

11th Bought machinery by cheque for Sh. 5,000.

13th Cash sales paid directly to the bank Sh. 4000.

15th Withdrew Sh. 1,000 for private use.

20th Cash sales Sh. 20,000.

21st Banked cash amounting to Sh. 1,000.

24th A cheque received from Chebe 0n 8th April was dishonoured.

27th Received Sh. 3,000 by cheque from Kiko, a debtor.

30th Banked all the available cash except Sh. 1,000.

Prepare Kifaru Traders three column cash book for the month of April, 2020. (10mks)

3. a) Explain **five** monetary policies that the Kenyan government may use to control inflation. (10mks)

   b) Explain five factors to consider when choosing an office layout. (10mks)

4. a) Explain **five** factors that may limit entrepreneurial development in a country. (10mks)

   b) Explain **five** negative effects of unemployment. (10mks)

5. a) Describe **four** chains of distribution that a Kenyan producer would use to sell his/her goods to South Africa. (8mks)

b) The following Trial balance was prepared from the books of Nerea traders as at 31st December 2015.

Nerea Traders

Trial Balance.

As at 31st December 2015.

Particulars	Dr. Sh.	Cr. Sh.
Sales		900,000
Purchases	600,000	
Returns	80,000	20,000
Carriage Inwards	40,000	
Carriage Outwards	3,000	
Stock (January 2015)	100,000	
Rent.	60,000	
Creditors		170,000
Debtors	120,000	
Interest on loan	18,000	
General expenses	7,000	
Capital		178.000
Fixed assets	240,000	
	1,268,000	1,268,000

Additional Information.

Stock as at 31st December was Ksh. 100,000

Required:

i) Prepare a Trading profit and loss account for the period ended 31st December 2015.

ii) Calculate:

a) Return on capital employed.

b) Current ratio.

c) Rate of stock turnover.

(12mks)

6. a) Explain **five** circumstances under which a country may restrict international trade. (10mks)

b) Explain five types of direct taxes. (10mks)

Name……..Index No. ……Class: ……..

Teacher:……

101/3

ENGLISH

PAPER 3

(Imaginative Composition and Essays Based on set Texts)

SHINING STUDENT

POST MOCK 2021

TIME: 2 ½ HRS

POST-MOCK 2022

INSTRUCTIONS TO CANDIDATES

(a) Answer **three** questions **only**.

(b) Questions **one** and **two** are **Compulsory**

(c) In Question three choose **only one** of the **optional texts**.

(d) Each of your essays must not exceed 450 words.

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1	20	
2	20	
3	20	
TOTAL SCORE	60	

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SHINING STUDENT

Answer three questions only.

1. Imaginative composition (compulsory) (20 mks)

EITHER

(a) Write a composition ending with …….. had I listened to my parents wise words I would not be in this sorry state.

OR

(b) Write a composition to illustrate the truth in the saying “Patience pays.”

2. Compulsory Set Text :
Blossoms of the Savannah by H. R. Ole Kulet (20 mks)

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SHINING STUDENT

Irresponsible parenting can lead to instability in a family. Discuss the truth of this statement using the novel "Blossoms of the Savannah" by H. Kulet

3. The optional Set Text; (20 mks)

Answer any ONE of the following questions.

EITHER

(a) The Short Story

"In the face of adversity one requires strong-will power to succeed." Justify this statement referring to the story: "No need to lie". by Rolf Schmid

OR

(b) David Mulwa : Inheritance

"A leader who is unfit to rule causes untold suffering for the citizens." Drawing illustrations from David Mulwa's **"Inheritance",** write an essay to validate this statement.

OR

(c) The Novel:
John Steinbeck "The Pearl"

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SHINING STUDENT

"Juana's steadfast spirit makes her a pillar of strength in her family." Justify this statement using **"The Pearl"** by John Steinbeck.

POST MOCK 2022

ENGLISH PAPER 1

101/1

TIME: 2 HRS

Name: _____ Index Number: _____

Admission Number: _____ Signature: _____

Instructions to Candidates:

1. Answer all the questions in this paper.
2. All your answers must be written in the space provided.
3. Read all instructions carefully before attempting any questions.
4. This paper consists of 6 printed pages. Check that all pages are printed and no question is missing.
5. Answer all questions in English.

For Examiner's Use only

Question	Maximum Score	Candidate's score
1	20	

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SHINING STUDENT

2	10	
3	30	
Total Score	60	

1. Functional Writing **20 marks**

You are the secretary of the Students' Council of your school. You have just held a meeting of the Students' Council at the beginning of the term.

Out of ten members, two prefects had notified the chairperson of their absence and one prefect's whereabouts is unknown. The deputy principal attended the meeting. During the meeting, the issue of the Students' Council uniform was revisited. The following issues were discussed:

i) Ways to observe Covid 19 protocols in the school.

ii) Ways to curb noise-making in the school.

iii) Preparation for leadership training.

Write the minutes you took during the meeting.

2. Cloze passage **10 marks**

Read the passage below and fill in the gaps with the most appropriate word.

The war against tuberculosis has received a shot in the 1_____ after medical researchers discovered a more efficient way of 2 _____ the disease in

children.

3 _____ team of experts from Kenya Medical Research Institute (KEMRI) 4 _____ the international community discovered the test that promises early treatment and reduced complications and 5 _____ caused by TB in children.

In a report, the researchers said the new test involves the use of genes to check the presence of the TB 6 _____ causing bacterium in children, contrary 7 _____ the earlier use of sputum (saliva) or tuberculin skin test, that were generally undetectable.

Children with TB have non-specific 8_____ and if any, exhibit signs common to many other childhood diseases 9_____ making it difficult to establish the existence of the infection in them.

If at all the disease is detected, it would often be in the 10 _____ stages after causing extensive damage.

(From The Daily Nation, May 14, 2014)

3. Oral Skills **30 marks**

A: Read the oral narrative below and answer the questions that follow.

<u>Hare and Tortoise</u>

Once upon a time, there lived a hare and a tortoise. They were good friends and met regularly to discuss many issues. Hare made it a habit to ridicule Tortoise about his short legs and slow pace. Although Tortoise would brave the ridicule by trying to explain that he always got things done even at his slow pace, Hare's daily taunts were getting on his nerves.

'I wish I could find a way of proving to hare that though I am slow, I'm steady and sure,' Tortoise agonized.

One day, Hare challenged Tortoise to a race. 'Let's compete in a race. With your stumps of legs, I can run ten times faster than you!' Hare said this loudly for other animals, which were nearby, to hear.

SHINING STUDENT

‘You may defeat me but you cannot run ten times faster than me,’ Tortoise protested.

To settle the argument, the two decided to compete the following day. Hare run home, got his horn and blew it hard. When the other animals came to enquire what the news was, Hare invited them to witness the race the following day.

When the race started, Hare zoomed off as if he had been attacked by a swarm of bees, leaving Tortoise way behind.

Soon Hare came across a group of animals resting by some bushes. He stopped to chat with them.

‘I’m sure I can take a nap and still wake up to beat Tortoise,’ he declared proudly. He then proceeded to find a nice shade and dozed off.

When Hare woke up, he could only see the silhouette of Tortoise as he disappeared way off ahead of him. By the time he got to the finishing point, Tortoise had long finished the race. Hare walked away in shame and never taunted Tortoise about his short legs and slow pace again.

Questions

i) If you were to narrate the above story before an audience, how would you capture their attention before the narration? (3 marks)

_____
_____
_____
_____
_____
_____

ii) Imagine that you are performing this narrative before an audience. What would you do to make it lively? (3 marks)

_____
_____
_____

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_____
_____
_____

iii) How would you say the following line: “You may defeat me but you cannot run ten times faster than me.”
(2 marks)

_____
_____
_____
_____
_____

iv) Identify two cues that would suggest that the audience was listening to you keenly.
(2 marks)

_____
_____
_____
_____
_____

B. For each of the following words, supply another word that is said exactly the same.

(4 marks)

i) Hymn _____

ii) Quire _____

iii) Pier _____

iv) Threw _____

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SHINING STUDENT

C. Underline the letters that are silent in the words below: (3 marks)

i) Wrinkle

ii) Yacht

iii) Succumb

D. Identify the odd one out in each of the following sets of words based on the pronunciation of the underlined. (3 marks)

i) Guilt, germs, gist, gender

ii) Prison, season, censor, reason

iii) Depot, rapport, report, debut

E. You have been identified as one of the main speakers in a debating contest as an opposer. State what you would do before and during your presentation to make it effective. (4 marks)

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F. Explain how you will go about the following during an impromptu speech:

i) Inviting a guest speaker. (3 marks)

ii) Moving a message of condolence. (3 marks)

NAME: …… INDEX NO. ……

Candidate signature: ……Date: ……

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SHINING STUDENT

ENGLISH

PAPER 2

TIME: $2^{1/2}$ HOURS

POST-MOCK 2022

Kenya Certificate of Secondary Education

INSTRUCTIONS

- Answer ALL the questions in the spaces provided.
- All answers must be written in English
- This paper consists of 14 pages

For examiners use only

Question	Maximum Score	Score
THE UNSEEN PASSAGE 1	20	
THE SEEN PASSAGE 2	25	
POETRY 3	20	
GRAMMAR 4	15	
	Total score	

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SHINING STUDENT

COMPREHENSION (20 MARKS)

Read the following passage and answer the questions that follow.

ACQUIRED HEART DISEASE.

People who suffer from acquired heart diseases are usually born with normal hearts but contract the disease later on in life. Different heart diseases are brought about by various factors. For example, rheumatic heart disease is caused by a form of virus infection which may start with a sore throat. This is caused by rheumatic fever which affects many parts of the body such as the joints, skin, brain and the heart.

The most serious and long lasting effects are those of the heart, especially the heart valves, which becomes damaged. The valves may either become narrow preventing the free forward flow of blood or they may leak, throwing the circulation in disarray and inflaming all the three layers of the heart namely, 'Pericardium', 'Myocardium' and 'Endocardium'. The blood valves usually get damaged causing the heart to be inefficient in pumping blood all over the body. This results in heart failure.

Some of the symptoms associated with this disease are swelling of the joints, pain and fever. In most cases, the symptoms disappear on their own but the toxins still remain in the blood and once they reach the heart, it becomes infected with the disease. The disease is referred to as the poor man's disease because it normally occurs in overcrowded and unhygienic conditions. It also occurs where there is poor nutrition and inadequate health facilities. It may be cured through operation depending on the seriousness of the disease.

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Another type of the acquired heart disease is the coronary heart disease. This disease causes the narrowing and roughening of the arteries which supply blood to the heart. Lack of enough blood and oxygen causes the heart tissues to die thereby causing a heart attack which is fatal. Cholesterol deposits coat the inside lining of the arteries thereby causingthem to narrow. This emanates from eating foods like red and fatty meat, eggs and sugar. This disease may on the other hand be hereditary. Doing physical activities helps to reduce the amount of cholesterol in the blood by burning up much of the fat thereby, leaving less coating on the arteries.

This disease can be treated either through the use of drugs or through vein *grafting* where the blocked part of the artery is by-passed. In severe cases, heart-transplant maybe required. In other cases, treatment maybe through either a closed or open heart surgery.

Although cholesterol in the blood is bad for the heart, only when very large quantities are taken is there an increase in blood cholesterol levels. Therefore, eating a few eggs a week or an occasional meal of meat would do no harm. You should think of the amount of fat that your food contains. A low-fat diet will provide you with the necessary calories that the body needs. Eating fatty foods will certainly contribute to your adding on weight which is unhealthy.

Hypertension is another type of acquired heart disease. The disease is normally associated with the socio-economic problems. Victims of hypertension are usually those people who are continually anxious, tense, depressed and worried. The higher the levels of table-salt taken, the higher the risk of getting hypertension. So, consumption of

table-salt should be regulated to bare minimum. *Genetic factors* may also contribute to the *contraction* of hypertension.People from a particular family may seem to be more *prone* to the disease than those from another family. Treatment of the disease may be through drugs but *counselling* in some cases may also help.

(Adapted from the Daily Nation)

Questions

a) What effect does the rheumatic fever have on the heart valves **(2 Marks)**

……

……

……

b) Why is rheumatic fever called a 'poor man's disease'? **(2 Marks)**

……

……

……

c) In a coronary heart disease, why do the heart tissues die? **(2**

Marks)

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……

d) Why does the author say that hypertension maybe hereditary and may also be caused by environmental factors. Support your answer.

(3 Marks)

……

……

……

……..

e) In notes form, state what one needs to do to avoid being a victim of heart attack

(4 Marks)

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……..

f) What is the other word for hypertension? (1 Mark)

……

g) What are the symptoms associated with rheumatic heart disease. (2

Marks)

……

……

h) Give the meaning of the following words and phrases as used in the passage.

(4Marks)

i) disarray

……

……

……

ii) toxins

……

……

iii) emanated

……

……

iv) genetic factors

……

……

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SHINING STUDENT

2. EXCERPT (25 MARKS)

Read the following excerpt and answer the questions that follow.

Nora: Tell me what purpose you mean to put it to.

Krogstad : I shall only preserve it – to keep it in my possession . No one who is not concerned in the matter shall have the slightest hint of it. So that if the thought of it has driven you to any desperate resolution -

Nora: It has.

Krogstad: If you had it in your mind to run away from your home -

Nora: I had.

Krogstad: Or even something worse -

Nora: How could you know that?

Krogstad: Give up the idea.

Nora: How did you know I had thought of that?

Krogstad: Most of us think of that at first. I did , too- but I hadn't the courage.

Nora: *(faintly)*No more had I.

Krogstad: *(in a tone of relief)* No, that's it, isn't it -you hadn't the courage either?

Nora: No I haven't - I haven't.

Krogstad: Besides, it would have been a great piece of folly. Once the first storm at home is over -.

I have a letter for your husband in my pocket.

Nora : Telling him everything?

Krogstad : In as lenient a manner as I possibly could.

SHINING STUDENT

Nora : (Quickly) He mustn't get the letter. Tear it up.

I will find some means of getting money.

Krogstad: Excuse me, Mrs. Helmer , but I think I told you just now -

Nora: I am not speaking of what I owe you. Tell me what sum you are asking my husband for, and I will get the money.

Krogstad: I am not asking your husband for a penny.

Nora: What do you want, then?

QUESTIONS.

1. What events lead to this excerpt? **(3 Marks)**

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2. 'I am not speaking of what I owe you.'' What is Nora referring to? **(2 Marks)**

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3. ''Give up the idea. ''What is Krogstad referring to**?** **(2 Marks)**

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4. ''*Most of us think of that at first. I did,too - but I hadn't the courage.''* Basing your answer from elsewhere in the text, compare Nora and Krogstad's experiences with regard to the above statement. **(2 Marks)**

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5. Describe the character of Nora and Krogstad as brought out in the extract.

Nora (2 Marks) ……
……

……

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……Krogs tad (2 Marks)

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6. Comment on two issues brought out in the excerpt. (4 Marks)

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7. Identify one aspect of style used in the excerpt. (2 Marks)

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8. What happens immediately after this excerpt. (3 Marks)

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9. Give up the idea. (Add a question tag.) **(1 Mark)**

……

10. What is the prevailing mood in this excerpt? **(2 Marks)**

……

……

……

……

11. Give the meaning of the following words and phrases as used in the excerpt. **(2Marks)**

i. Lenient……

ii. A great piece of folly……

3. ORAL POEM **(20 MARKS)**

Read the following oral poem and answer the questions that follow:

Don't cry baby

Sleep little baby

Father will nurse you

Sleep baby sleep

Little bird flitting away to the forest so fast

Tell me, little bird, have you seen her

Have you seen my crying baby's mother?

SHINING STUDENT

She went to the river at early dew

A pot upon her head

But down the water floats her pot

And the path from the river is empty

Shall I take him under the palm?

Where the green shade rests at noon?

Oh no, no

For the thorns will prick my baby

Shall I take him under the giant baobab

Where the silk cotton plays with the wing?

Oh no,no

For the termite – eaten bough will break

And crush my little baby

My little sleeping baby

The day is long and the sun grows hot

So, sleep my little baby ,sleep

For mother is gone to a far,far land- Alas!

She is gone beyond the river.

QUESTIONS.

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SHINING STUDENT

1. Classify the above oral poem. (2 Marks)

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2. State and illustrate two features of the above oral poem. (4 Marks)

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3. Identify and illustrate the two speakers in the oral poem. (2 Marks)

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4. Why is the singer hesitant to take the baby under the shade? (1Mark)

……

……

5.Briefly explain two functions of this song? (2marks)

……

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6.What is the general mood created in stanza three? (2 Marks)

……

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7. What is the singer's attitude towards the baby? (2 Marks)

……

……

……

8.Identify and illustrate any two characteristics of oral poem evident in the above poem. (4 Marks)

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9. '' She is gone beyond the river. '' Explain the meaning of this line. (1 Mark)

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GRAMMAR
(15MARKS)

A.Rewrite the following sentences according to the instructions given. (4 Marks)

I. The woman left the child with a neighbour and went to the market. (Begin : Leaving...)

……

……

II. The teacher forgave Mary but only because she apologized. (Begin: If…)

……

……

III. He is our brother. (Rewrite using a double possessive)

……

IV. Let's go to the field. (Supply the correct question tag)

……

B. Fill in the blank spaces with the correct prepositions in the sentences below. (3 Marks)

a.) The students are notorious……making noise.

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b.) The new manager was not acquainted……..the problems of the company.

c.) Jane has a taste……..glamorous clothes.

C. Choose the correct pronoun to fill in the blank spaces. (3 Marks)

i. John is taller than……(them/they)

ii. Asha and ……(she/her) represented the school in the Hockey tournament.

iii. The secret between you and……(I/me) must be kept.

D. Give two possible meanings of the following sentence. (1 Mark)

Call me Ruth.

……

……

……

E. Use the correct form of the word in brackets to fill in the blank spaces. (2 Marks)

1. Malaika is quite……of the screaming of her children so she discourages it. **(tolerate)**

2. The politician tried to ……the rowdy crowd but failed. (**peace)**

F. Choose the correct alternative to complete the sentences below. (1 Mark)

i) Teaching ……..is not an easy job for teacher trainees. **(Practice/Practise)**

SHINING STUDENT

GEOGRAPHY
PAPER 1
POST MOCK 2022
TIME: $2^{3}/_{4}$ HOURS

@– POST MOCK-2022

Kenya Certificate of Secondary Education (K.C.S.E)

Geography
Paper 1
Time: $2^{3}/_{4}$ hours

INSTRUCTIONS TO CANDIDATES

- *This paper consists of two sections; section A and section B.*
- *Answer all questions in section A. In section B answer question 6 and any other two questions.*
- *All answers must be written in the answer booklet provided.*
- *This paper consists of 6 printed pages.*
- *Candidates should check to ascertain that all pages are indicated and that no questions are missing.*

FOR EXAMINERS ONLY

QUESTION	MARKS
SECTION A	
6	
7	
8	
9	
10	

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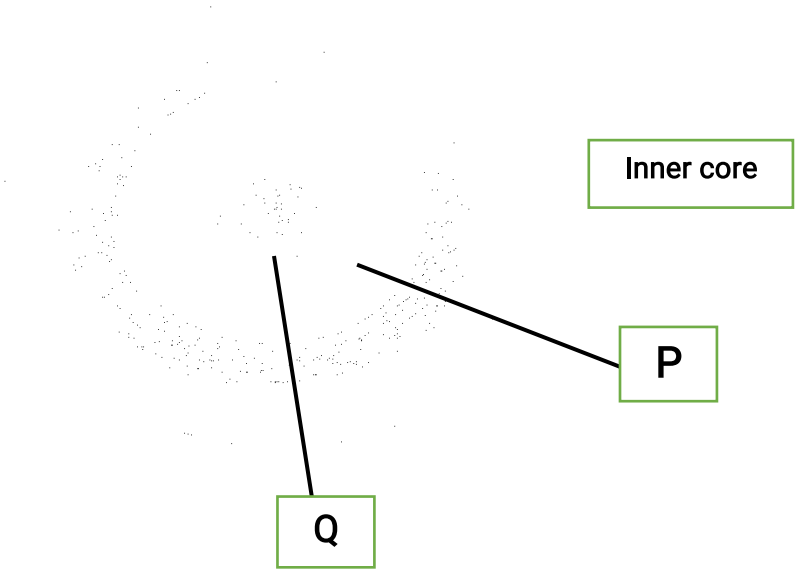
SHINING STUDENT

SECTION A

*Answer **ALL** the questions in this section*

1. The diagram below shows the internal structure of the earth. Use to answer question (a)
and (b).



(a) Identify:

(i) the layer marked **P**. (1 mark)

(ii) the zone of discontinuity marked **Q**. (1 mark)

(b) Give **four** characteristics of the core. (4 marks)

2. (a) What is a metamorphic rock? (2 marks)

(c) Give the metamorphic rock that form when the following rocks are metamorphosed:

(i) Granite (1 mark)

(ii) Limestone (1 mark)

3. (a) Name **two** main continental plates. (2 marks)

(d) Describe how a subduction zone is formed. (3 marks)

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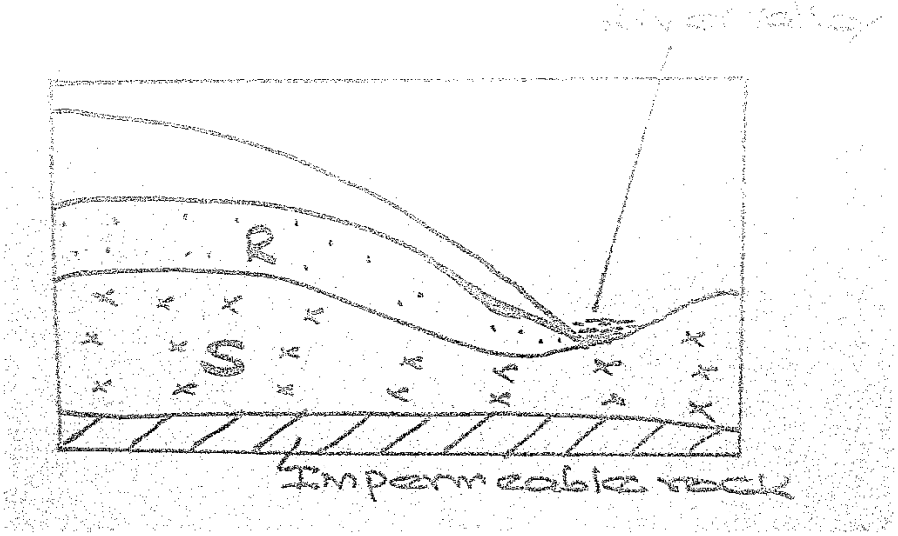
4. Use the diagram below to answer question (a)



(a) Name the zones of saturation marked **R** and **S**. (2 marks)

(b) State **three** conditions necessary for the formation of an artesian well. (3 marks)

5. (a) What is a lake? (2 marks)

(b) Give **three** ways through which a lake is formed. (3 marks)

SECTION B: Answer *Question six* and any other *Two Questions* in this section. (75MKS)

6) Study the map of Kijabe (1:50000) sheet 134/3 provided and answer the questions that follow

a) i) What type map of is Kijabe extract? (1mk)

ii) Convert the map scale into statement scale (2mks)

b) i) Measure the length of the railway line to the west of Easting 30 in kilometres. (2mks)

ii) Give six digit grid reference of the forest guard post. (2mks)

c) Draw a square measuring 10cm by 10cm to represent the area enclosed by easting 30 and 40 and northings 90 and 00. (2mks)

On it mark and label;

Thicket vegetation (1mk)

Railway line (1mk)

Bore hole (1mk)

- River upper Ewaso Kedong (1mk)

d) Describe the relief of the area shown by the map (5mks)

e) i) Explain two factors influencing dairy farming in the area covered by the map (4marks)

ii) Citing evidence from the map, state three functions of Kijabe town (3mks)

7 a) i) What is a weather station? (2mks)

ii) State four factors influencing the siting of a weather station. (4mks)

b) Explain how the following factors affect temperature

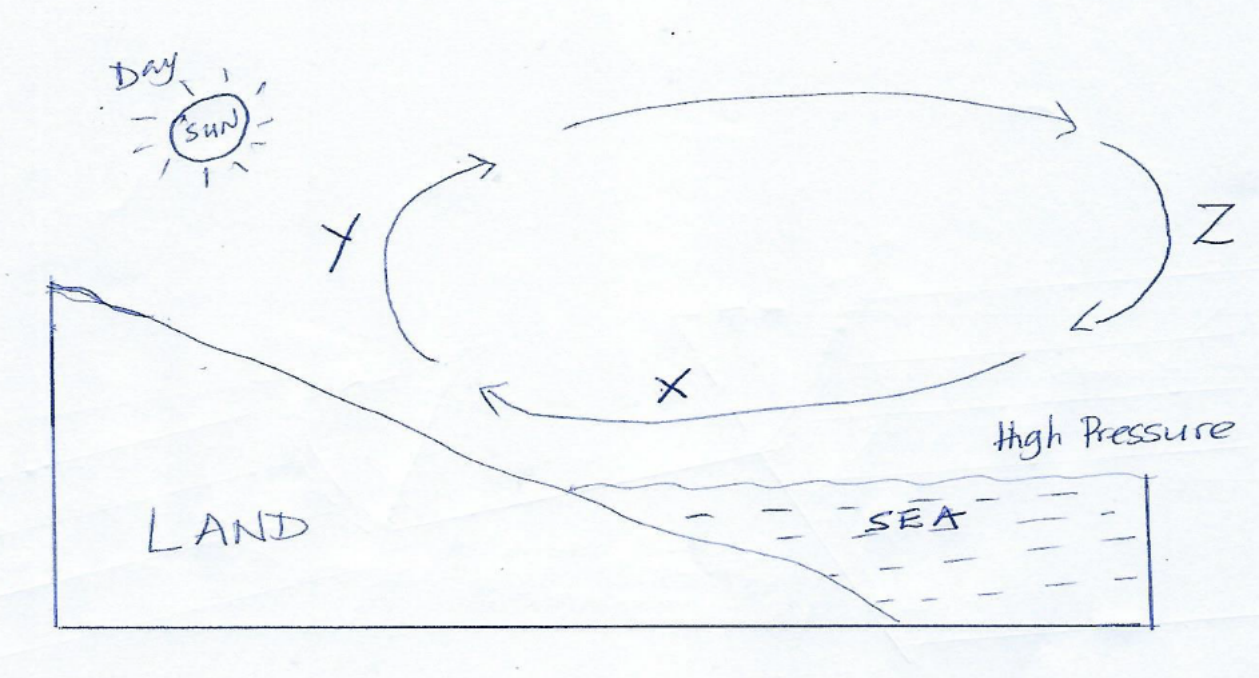
- Aspect (2mks)

- Ocean currents (2mks)

- Altitude (2mks)

c) Study the diagram below and use it to answer the questions that follow.

SHINING STUDENT



i) Label the parts marked X ,Y and Z (2mks)

ii) Identify areas in Western Kenya where the phenomenon shown in the diagram above. Commonly occurs. (1mks)

c) With aid of a well labeled diagram, explain formation of relief rainfall. (6mks)

d) Give four reasons why weather forecasting is important. (4mks)

8.a (i) Explain two causes of faulting (4marks)

(ii) Identify two types of faults (2marks)

b) With the aid of well labelled diagrams, describe the formation of the rift valley by compressional forces (8marks)

c) Identify two examples of block mountains in East Africa (2marks)

d) Explain two effects of faulting on drainage (4marks)

e) Your class conducted a field study at the Great Rift Valley.

i) State three reasons why it was important to seek for permission (3marks)

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ii) Give two methods you used to collect data (2marks)

9. (a) (i) Define the term glaciation. (2 marks)

(ii) Name **three** types of glaciers. (3 marks)

(iii) Give **two** reasons why there are no glaciers in Kenya. (2 marks)

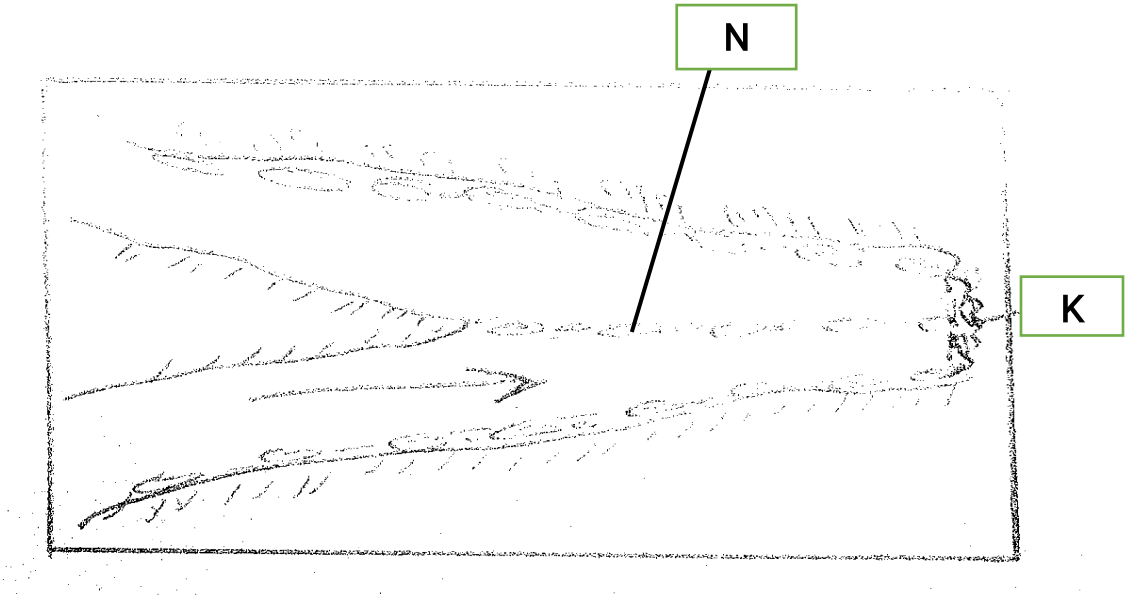
(b) Explain how each of the following factors influence the movement of a glacier:

(i) Gradient of the slope. (3 marks)

(ii) Temperature change (3 marks)

(c) Using a well labelled diagram, describe how a corrie lake is formed. (8 marks)

(d) (i) The diagram below shows the type of moraines:



Name the type of moraine marked **K** and **N**. (2 marks)

(ii) State **two** negative effects of glaciation in lowland areas. (2 marks)

10. (a) Name any two cold deserts in the world. (2 marks)

(b) Describe three factors that influence wind transportation in desert areas. (6 marks)

(c) With the aid of well labelled diagrams, describe how a zeugen is formed. (8 marks)

(d) Give any three features formed by water erosion in desert landscapes. (3 marks)

(e) Explain three ways in which desert features are of significance to human activities. (6 marks)

312/2
GEOGRAPHY
PAPER 2
POSTMOCK 2022
TIME: $2^{3}/_{4}$ HOURS

POST MOCK 2022

Kenya Certificate of Secondary Education (K.C.S.E)

Geography
Paper 2

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SHINING STUDENT

Time: $2^{3}/_{4}$ hours

INSTRUCTIONS TO CANDIDATES

- *This paper consists of two sections; section A and section B.*
- *Answer all questions in section A. In section B answer question 6 and any other two questions.*
- *All answers must be written in the answer booklet provided.*
- *This paper consists of 5 printed pages.*
- *Candidates should check to ascertain that all pages are indicated and that no questions are missing.*

FOR EXAMINERS ONLY

QUESTION	MARKS
SECTION A	
6	
7	
8	
9	
10	

SECTION A: Answer all questions in this section

1a) Name two examples of natural forests in the coastal region. (2mks)

b) Give three reasons why agroforestry is encouraged in Kenya. (3mks)

2. a) Name two main land reclamation projects in Netherlands (2mks)

b) Give two benefits that resulted from reclamation of Yala Swamp (2mks)

3 a) Name two breeds of cattle kept by nomadic pastoralists in Kenya. (2mks)

b) Give four features of nomadic pastoralism (4mks)

4 a) State four measures taken to promote domestic tourism in Kenya. (3mks)

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b) Identify two physical tourist attraction sites in Switzerland. (2mks)

5 a) Distinguish between transport and communication. (2mks)

b) State two causes of increased road accidents in Kenya. (3mks)

SECTION B

*Answer question **6** and any other **two** questions from this section*

6. The table below shows the value of cash crops in Kenya shilling millions. Use to answer question (a).

CROP/YEAR	2015	2016	2017
Coffee	10,000	13,000	14,000
Tea	10,000	12,000	12,000
Pyrethrum	9,000	8,000	5,000

(a) (i) Using a vertical scale of 1cm to represent 1,000,000,000 shillings, draw a comparative bar to represent the data above. (8 marks)

(ii) Apart from comparative bar graphs, name **two** other methods that can be used to represent the above data. (2 marks)

(b) (i) Name **two** Counties where coffee is grown on large scale in Central Kenya. (2 marks)

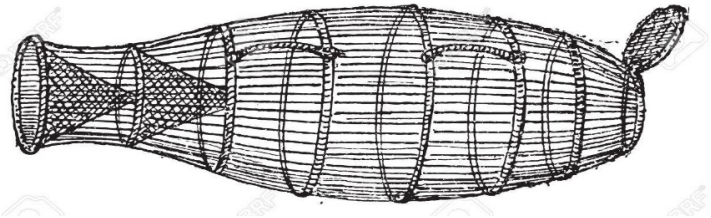
(ii) Describe the stages in the cultivation of coffee from land preparations to the harvesting stage. (7 marks)

(c) Explain **three** problems that faced by small scale coffee farmers in Kenya. (6 marks)

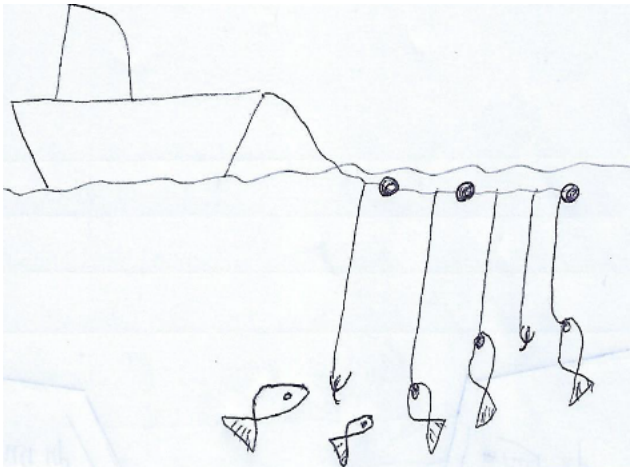
7. (a) (i) What is fish farming? (2 marks)

(ii) State **three** reasons why fish farming is encouraged in Kenya. (3 marks)

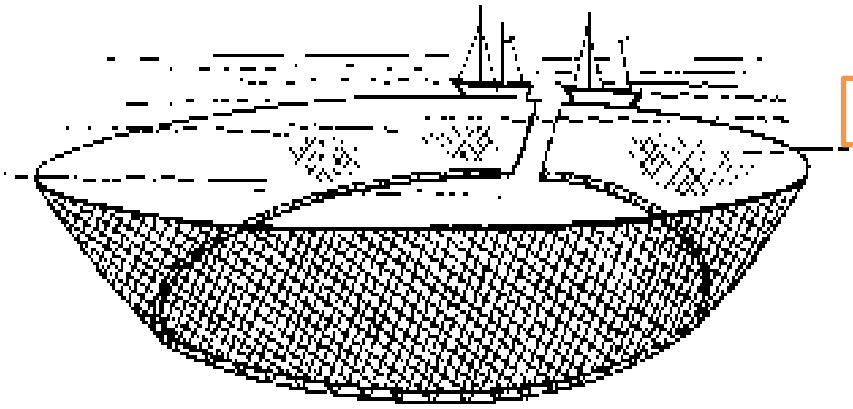
(b) The diagrams below shows some fishing methods. Use it to answer the question below.



T



U



V

(i) Identify the fishing method marked **R** and **U**. (2 marks)

(ii) Describe the fishing method marked **V** in the diagram above is used to catch fish. (6 marks)

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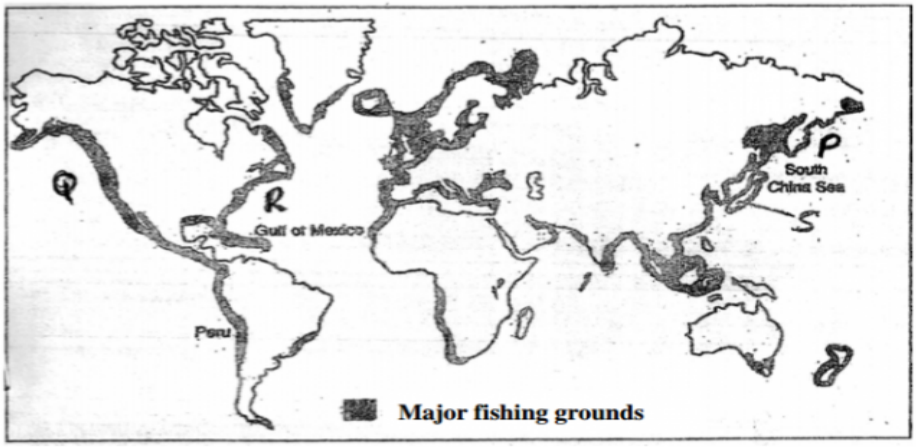
(c) The map below shows the main fishing grounds in the world.



(i) Name the fishing ground marked **P**. (1 mark)

(ii) Identify the country marked S. (1 mark)

(iii) Explain **three** physical factors which favour fishing in the fishing ground marked P. (6 marks)

(d) State **four** problems facing fishing marine fishing in Kenya. (4 marks)

8 a) i) What is mining? (2mks)

ii) Give two formations in which mineral ores occur (2mks)

b) Explain how the following factors influence the exploitation of minerals

i) Quality of the ore (2marks)

ii) Level of technology (2marks)

c) Describe the dredging mining method (4mks)

d) i) State three uses of soda ash (3marks)

ii) Explain two problems facing soda ash mining at Lake Magadi in Kenya (4mks)

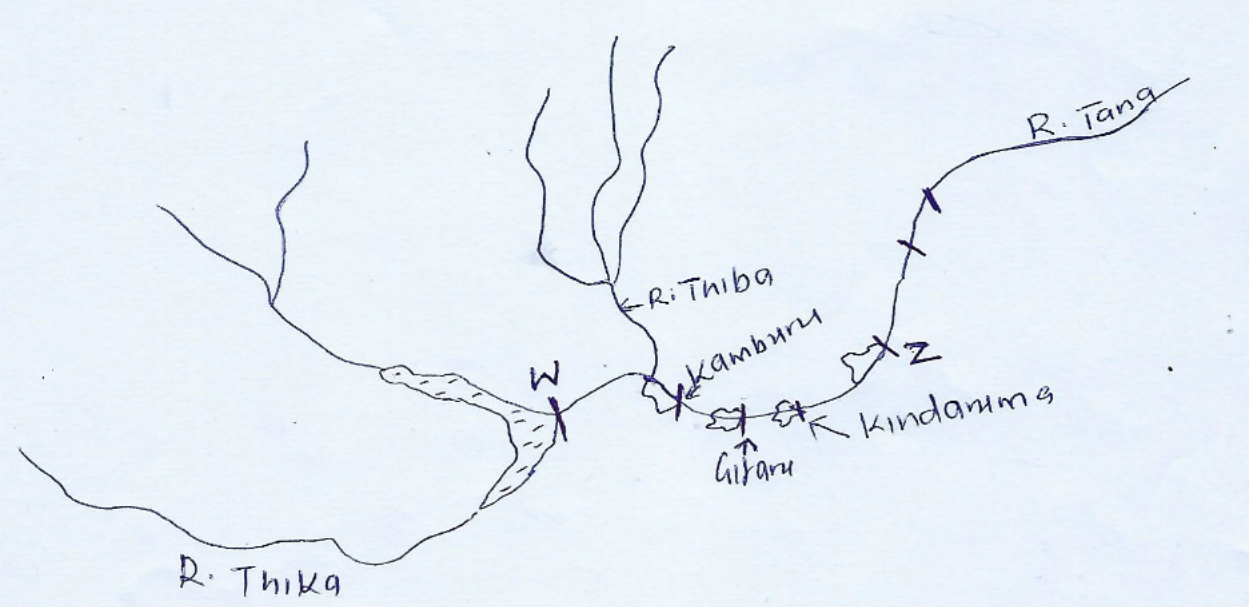
e). Explain three ways in which diamond mining has contributed to the economy of South Africa (6mks)

9. (a) (i) Other than wind, name **two** other sources of renewable energy. (2 marks)

(ii) Name one main wind power station in Kenya. (1 mark)

(iii) State **three** advantages of using wind as a source of energy. (3 marks)

(b) The map below shows the Seven Forks hydroelectric power scheme.



(i) Name the dams marked **W** and **Z**. (2 marks)

(ii) Explain **three** physical factors that influenced the location of the Seven Forks HEP project. (6 marks)

(iii) State **three** economic benefits of the Seven Forks HEP project. (3 marks)

(d) (i) What is energy crisis? (2 marks)

(ii) Explain **three** effects of the increasing petroleum prices to the Kenyan economy. (6 marks)

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SHINING STUDENT

10 a) i) Distinguish between industries and industrialization (2mks)

ii) Give three reasons why Kenya's striving to be industrialized (3mks)

b)i) State four characteristics of cottage industries in in Kenya. (4mks)

ii) Give two examples of cottage industries in Kenya. (2mks)

c) Explain three problems associated with industrialization in Kenya. (6mks)

d) i) Explain three factors that influenced the location of the iron and steel industry in the Ruhr Industrial region.(6mks)

ii) Apart from the iron and steel industries, name two other industries in the Ruhr industrial region. (2mks)

311/1
HISTORY AND GOVERNMENT
PAPER 1
311//1
POST MOCK 2022
TIME: 2½ hours

Name:_____IndexNo:_____Signature:_____

POST-MOCK 2022

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SHINING STUDENT

Kenya Certificate of Secondary Education
HISTORY AND GOVERNMENT
Paper 1

INSTRUCTIONS TO THE CANDIDATES

1. This paper consist of **three** sections; **A, B** and **C**
2. Answer **All** the questions in section **A, three** questions from section **B** and **two** questions from section **C**
3. This paper has **twenty four** questions. The candidate should ascertain that all the questions are printed.
4. All questions must be answered in the answer booklet provided.

FOR EXAMINERS USE ONLY

SECTIONA (25 MARKS)	SECTION B (45 MARKS)				SECTION C (30MARKS)		
QUESTIONS 1-17	18	19	20	21	22	23	24

SECTION A (25 Marks)

Answer **All** questions in this section in the answer booklet provided.

1. Give two classifications of the sources of information on History and Government
(2mks)

2. Identify any two coastal Bantus in Kenya
(2mks)

3. What is the significance of Eunoto ceremony among the Maasai
(1mk)

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4. State two similarities in the political organization of the Somali and the Borana during the pre- colonial period
(2mks)

5. Name two treaties that were signed to end slave trade along the East African coast
(2mks)

6. Identify one technological factor which facilitated the coming of early visitors to the Kenyan coast before 1500 AD
(1mk)

7. State two circumstances under which citizenship by birth may be revoked.
(2mks)

8. Mention one political cause of conflicts in the society today
(1mk)

9. State two challenges encountered during the constitution making process in Kenya
(2mks)

10. Name the commission that monitors the rights and freedoms of Kenya citizens
(1mk)

11. Give the strategic factor that led to the scramble and partition of East Africa
(1mk)

12. Name the two sections of the Luo who collaborated with the British
(2mks)

13. Give two ways in which African migration to the urban centers was controlled by the colonial government.
(2mks)

14. State one similar grievance of the Taita Hills Association and Ukamba Members Association (1mk)

15. Identify one court in Kenya that exercises both original and appellate jurisdiction
(1mk)

16. State one way in which the Kenyan Government has promoted Music and dance in Kenya (1mk)

17. Identify one independent office that monitors expenditure of public finance in Kenya
(1mk)

SECTION B: (45 Marks)

Answer any **three** questions from this section in the answer booklet provided.

18 a) State **five** reasons for the migration of Highland Nilotes into Kenya
(5mks)

b) Describe the social organization of the Borana during the pre-colonial period.
(10mks)

19. a) State **three** reasons why the Akamba participated in the long distance trade.
(3mks)

b) Explain **six** effects of slave trade on the Africans along the East African Coast.
(12mks)

20. a) Give **three** roles of Mekatilili wa Menza in the Agiriama resistance
(3mks)

b) Explain **six** reasons why armed resistance in Kenya failed. (12mks)

21. a) State **three** characteristics of independent churches and schools in Kenya
(3mks)

b) Explain **six** roles played by African Elected Members Organization (AEMO) on the struggle for independence in Kenya
(12mks)

SECTION C: (30 marks).

Answer any **two** questions from this section in the answer booklet provided.

22. a) Give **three** categories of persons in Kenya who are entitled to special rights in Kenya. (3mks)

b) Explain limitations of any **six** rights and freedoms of Kenya citizens
(12mks)

23. a) Give **five** reasons why parliament is supreme in Kenya (5mks)

b) Explain **five** reforms that have been undertaken to improve conditions of correctional

service in Kenya (12mks)

24. a) State **five** challenges encountered by the Kenyan Government during revenue collection (5mks)

b) Explain **five** functions of county governments in Kenya (10mks)

311/2
HISTORY AND GOVERNMENT
PAPER 2
POST/MOCK 2022
TIME: 2½ hours

Name:_____IndexNo:_____Signature:_____

POST-MOCK 2022

Kenya Certificate of Secondary Education
HISTORY AND GOVERNMENT
Paper 2

INSTRUCTIONS TO THE CANDIDATES

1. This paper consist of **three** sections; **A, B** and **C**
2. Answer **all** the questions in section **A, three** questions from section **B** and **two** questions from section **C.**
3. This paper has **twenty four** questions. The candidate should ascertain that all the questions are printed.
4. All questions must be answered in the answer booklet provided.

FOR EXAMINERS USE ONLY

SECTIONA (25 MARKS)	SECTION B (45 MARKS)				SECTION C (30MARKS)		
QUESTIONS 1-17	18	19	20	21	22	23	24

SHINING STUDENT

SECTION A (25 Marks)

Answer **All** questions in this section in the answer booklet provided.

1. Give two aspects of human activities studied in political history
(2mks)

2. Mention two reasons why the earliest mammals lived on trees
(2mks)

3. Give two ways in which the Sumerians reclaimed their land
(2mks)

4. State the reason why land was left fallow in Britain before Agrarian revolution
(1mk)

5. Give two advantages of the seed drill invented during the agrarian revolution in Britain
(2mks)

6. Identify two African cultures that spread to the Americans during the during the trans-Atlantic trade
(2mks)

7. Name two wheeless vehicles that were used for transport (2mks)

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8. Identify two forms of messages relayed by the use of drum beats in the ancient times (2mks)

9. State one way in which poverty hinders industrialization in the third world countries (1mk)

10. Identify two tourist attraction sites in the ancient Kilwa (2mks)

11. Give one way in which the Berlin conference solved the dispute among the European powers in Congo (1mk)

12. Name the charted company that administered Zimbabwe during the process of colonization (1mk)

13. Name the person who introduced the policy of association in central Africa (1mk)

14. State one challenge faced by South African nationalists (1mk)

15. State one event that led to the end of World War 1 (1mk)

16. Name one financial institution established by the African union (1mk)

17. State one condition that a country should fulfil in order to become a member of the Non-Aligned Movement (1mk)

SECTION B (45marks)

Answer any **three** questions from this section in the answer booklet provided

18) a) Name **three** distinct stages of evolution according to Charles Darwin (3mks)

b) Describe the culture of man during the middle Stone Age Period. (12mks)

19) a) State **five** challenges faced by Trans – Saharan Traders. (5mks)

b) Explain **five** factors for the decline of the Trans- Saharan Trade (10mks)

20) a) State **five** challenges faced by Johannesburg as an Urban center.
(5mks)

b) Explain **five** impacts of Agrarian and industrial development on urbanization.
(10mks)

21) a) State **three** functions of the Odwira festival among the Asante.
(3mks)

b) Explain **six** factors for the growth of the Buganda kingdom.
(12mks)

SECTION C: (30 Marks)

Answer any **two** questions from this section in the answer booklet provided.

22.a) State **three** reasons why the policy f assimilation was easily applied in the four communes of Senegal
(3mks)

b) Explain **six** reasons why indirect rule failed in Southern Nigeria
(12mks)

23. a) State **five** characteristics of the common wealth organization
(5mks)

b) Explain **five** causes of the cold war (10mks)

24. a) State **five** factors limiting the powers of the US president (5mks)

b) Explain **five** functions of the Prime Minister in Britain
(10mks)

441/1
HOME SCIENCE - PAPER 1
Time: 2½ hours
(THEORY)

POST MOCK-2022

abrahammariera@gmail.com 0729125181

SHINING STUDENT

POST MOCK 2022

Name……Index Number …… Candidates

Signature…… Date……

Instruction to Candidates

a) *Write your name and index number in the spaces provided above*
b) *This paper consists of **three** sections **A,B and C.***
c) *Answer **all** questions in section **A and B** and any two questions from section **C** in the spaces provide*
d) *This paper consists of 6 printed pages*
e) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and no questions are missing.***
f) ***Candidates should answer the questions in English.***

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Section	Question	Maximum Score	Candidate's Score
A.	1-19	40	
B.	20	20	
C.	21-23	40	
	Total Score	**100**	

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SHINING STUDENT

1. List four time and labour saving kitchen equipment.
   (2mks)

   ……

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   ……

2. State two signs and symptoms of scurvy.
   (2mks)

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   ……

   ……

3. Name four types of fruits which can be preserved using sugar. (2mks)

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4. Mention two ways of conserving vitamins during cooking of vegetables. (2mks)

   ……

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   ……

5. Distinguish between food spoilage and food poisoning. (2mks)

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6. Outline two ways of preventing the occurrence of athletes foot.
   (2mks)

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7. Give the meaning of the term post-natal care. (2mks)

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8. Mention two points on prevention and control of roundworms. (2mks)

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9. Write down two dangers of poor sanitation in schools. (2mks)

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10. Give one function for each of the following items found in the first aid kit. (2mks)

i. Sterilegauze……

……

ii. tweezers……

……

iii. Triangular sling……..

……

iv. Cotton wool……

……

v. Petroleum jelly. ……

……

11. Mention two vegetables fibres for making brooms and brushes.
(2mks)

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12. Outline four pieces of information found on the packaging of serviettes.
(2mks)

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13. Differentiate between bungalows and maisonettes.
(2mks)

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14. State two precautions to take when laundering a silk tie. (2mks)

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15. Mention two advantages of breast milk. (2mks)

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16. List four fastenings suitable for a toddler's garment. (2mks)

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17. Write down two functions of facing in garment construction. (2mks)

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18. State two reasons why a machine- fell seam is suitable in construction of under garments. (2mks)

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19. Give the function of the following needle work tools (2mks)

i. Bodkin ……

ii. Stiletto ……

SECTION B

20. You are at home over the weekend and asked to assist in through cleaning of the following items:

a) Launder a white synthetic shirt with a fresh blood stain (6 $^{1/2}$mks)

b) Clean an enamel cup that was previously used to serve tea. (5 $^{1/2}$mks)

c) Clean and polish white canvas shoes (8 mks)

SECTION C

Answer any two questions from this section in the spaces provided

21. a) Explain four factors to consider when buying fabric for making an apron, (8 mks)

b) Explain four control measures to take to avoid contracting Covid-19 disease. (4 mks)

c) Explain five reasons for sufficient ventilation in a room. (5 mks)

d) Outline three areas where the following body measurements are taken from (3 mks)

i. Bust

ii. Waist

iii. Back length

22. a) Explain four preparations to make before baby's arrival. (8 mks)

b) Explain three factors that have led to growing demand of convenience foods. (6 mks)

c) Explain three considerations to make when choosing a method of lighting for a house. (6mks)

23. a) Explain four points to consider when selecting furniture for a sitting room. (8 mks)

b) State four points on the importance of immunization. (4 mks)

c) Explain four factors to consider when setting a table. (8 mks)

441/2
HOMESCIENCE
CLOTHING CONSTRUCTION
PAPER 2
(PRACTICAL)
2 HRS 30 MINS
PAPER 2
(PRACTICAL)
2HRS 30 MINS

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SHINING STUDENT

POST MOCK 2022

314 /1
ISLAMIC RELIGIOUS EDUCATION
PAPER 1
2 ½ HOURS

INSTRUCTIONS
*This paper has **six** questions*
*Answer **any five** questions in the answer sheet provided*
Check the question paper to ascertain that both pages are printed
*All answers must be in **English***

NAME……INDEX NUMBER……..

CANDIDATES SIGNATURE……DATE……..

For official use

ORDER OF QUESTIONS					
MARKS					

TOTAL MARKS

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SHINING STUDENT

1. a) How do Muslims ensure that *Qur'an* remains in its original Forms? (8 marks)

   b) Describe **Six** reasons which led to the standardization of *Qur'an*. (6 marks)

   c) State the supplication (dua) as stated in the last verse of *Surah Baqara* (Q 2:286) (6 marks)

2. a) Discuss **Eight** teachings on Muslim brotherhood as derived from *Surah Hujurat*.

   (8 marks)

   b) Give **Seven** reasons why Prophet Mohammed (p.b.u.h) was given the Qur'an in piecemeal. (7 marks)

   c) Mention **Five** teachings of *Surah Al-Fatiha.* (5marks)

3. a) Describe **Four** ways through which Imam Bukhari ensured authenticity of His collection of Hadith. (8 marks)

   b) State **Six** characteristics of the *Matn (text)* of authentic Hadith. (6 marks)

   c) The Prophet (p.b.u.h) Said '' If Someone kills a sparrow for sports, the sparrow will cry out on the Day of Judgment. O Lord! That person killed me in Vain, he did not kill one for any useful purpose." In reference to the above Hadith, give reasons why Muslims should care for animals.
   (6 marks)

4. a) Explain **Four** differences between Sijdatul Shukr and Sijda performed in swalat.(8 marks)

   b) State **Six** differences between crime and sin in Islam. (6 marks)

   c) Discuss factors to be considered in the application of Ijma as a source of Islamic sharia. (6marks)

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5. a) Discuss how the application of Hudud Laws can reduce the rate of crimes in the society. (8 marks)

   b) Explain the social Significance of Hajj. (8 marks)

   c) State **Four** contributions by Imam Shafii to Islamic thought. (4 marks)

6. a) State **Eight** similarities in the concept of the revealed scriptures. (8 marks)

   b) Describe the challenges Faced by the prophets of Allah in their mission. (6 marks)

   c) Explain ways in which shirk affects Muslims. (6 marks)

POST MOCK 2022

314/2

ISLAMIC RELIGIOUS EDUCATION

PAPER2

$2^{1}/_{2}$ HOURS

Instructions

1. *This paper has* **six** *questions*
2. *Answer* ***any*** **five** *questions in the answer sheet provided*
3. *Check the question paper to ascertain that both pages provided*
4. *All answers must be in* ***English****.*

NAME…… INDEX NUMBER……

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SHINING STUDENT

CANDIDATES SIGNATURE…….. DATE ……

For official Use

Question N	1	2	3	4	5	6	TOTAL
Marks							

1. (a) Discuss the rationale behind prohibition of abortion in Islam. (5marks)

   (b)Give **seven** significances of the Islamic dress code. (7marks)

   (c)Highlight effects of sexual perversion in the society. (8marks)

2. (a) Explain the importance of *eddat* . (8marks)

   (b) Mention **Seven** forms of child Abuse prevalent in kenya. (7marks)

   (c) Outline **five** illegitimate sources of earnings in Islam. (5marks)

3. (a)Describe **five** ways through which Muslims can assist in the eradication of corruption. (10marks)

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(b)What roles can parents play to ensure proper upbringing of their children?

(6marks)

(c) Identify **four** conditions to be fulfilled be the administration of the estate of the deceased Muslims.
(4marks)

4. (a) Describe **seven** lessons that a Muslims youth can learn from the Ten Rules of Conduct of Imam Al Ghazali.
(8marks)

   (b) State the reforms brought by *Uthman Dan Fodio* under the *Sokoto Caliphate.*

   *((*6marks

   (c) Identify the contributions of *Sheikh Abdalla Swaleh Al-Farsy* to *the* growth of Islam in East Africa. *(*6marks*)*

5. (a) Describe the lessons that Muslims can learn from the prophet's Farewell speech.
(8marks)

   (b) Outline the Circumstances that led to the boycott of *Banu Hashim*.
(6marks)

   (c) State **six** achievements of *Caliph Uthman (R.A).*
*(*6marks)

6. (a) Describe **four** achievements of *Abdulmalik Bin Marwan* of the *Ummayyad* dynasty. (8marks)

(b) Why is *Abbasid era* considered as the Golden Age of Islamic civilization. (7marks)

(c) Highlight the importance of the treaty *Hudaibbiyya* to Muslims. (5marks)

NAME ……. INDEX NUMBER……..

121 /1

Candidate's signature

…… ***MATHEMATICS ALT A***

Class: .....

POST MOCK 2022

Date……..

TIME: $2\frac{1}{2}$ ***HRS***

Instructions to candidates

*(a) Write your **name** and **index** in the spaces provided above.*

(b) Sign and write the date of the examination in the spaces provided above.

*(c) The paper contains **TWO** Sections: **Section I** and **Section II.***

*(d) Answer **ALL** the questions in Section I and **Only five** questions from **Section II.***

(e) All answers and working must be written on the question paper in the spaces provided below each question.

*(f) **Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.***

(g) Marks may be given for correct working even if the answer is wrong.

*(h) **Non-programmable** silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.*

*(i) This paper consists of **15** printed pages.*

*(j) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***

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SHINING STUDENT

(k) Answer all the questions in English.

FOR EXAMINER'S USE ONLY

SECTION I

1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*Total*

SECTION II

17	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*Total*

Total

Grand

SECTION I (50 marks)

*Answer **all** questions in this section in the spaces provided*

1. All odd numbers from 1 – 10 are arranged in descending order to form a number.

(a)(i) Write the number
(1 mark)

(ii) Write the total value of the second digit of the number formed in (a) (i)
(1 mark)

(iii) Express the value of the number in (a) (ii) as a product of its prime factors in power form.

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(2 marks)

2. A shopkeeper bought a bag of sugar. He intends to repack the sugar in $40\ g$, $250\ g$ and $750\ g$. Determine the least mass in grams of sugar that was in the bag.
(3 marks)

3. Given that $\log_{10} 2 = 0.3010$ and $\log_{10} 3 = 0.4771$ without using tables or calculator find $\log 0.036$ correct to 4 significant figures.
(3 marks)

4. Evaluate $\dfrac{\frac{1}{2} of \frac{3}{2} + 1\frac{1}{2}\left(2\frac{1}{2} - \frac{2}{3}\right)}{\frac{3}{4} of 2\frac{1}{2} \div \frac{1}{2}}$ (3 marks)

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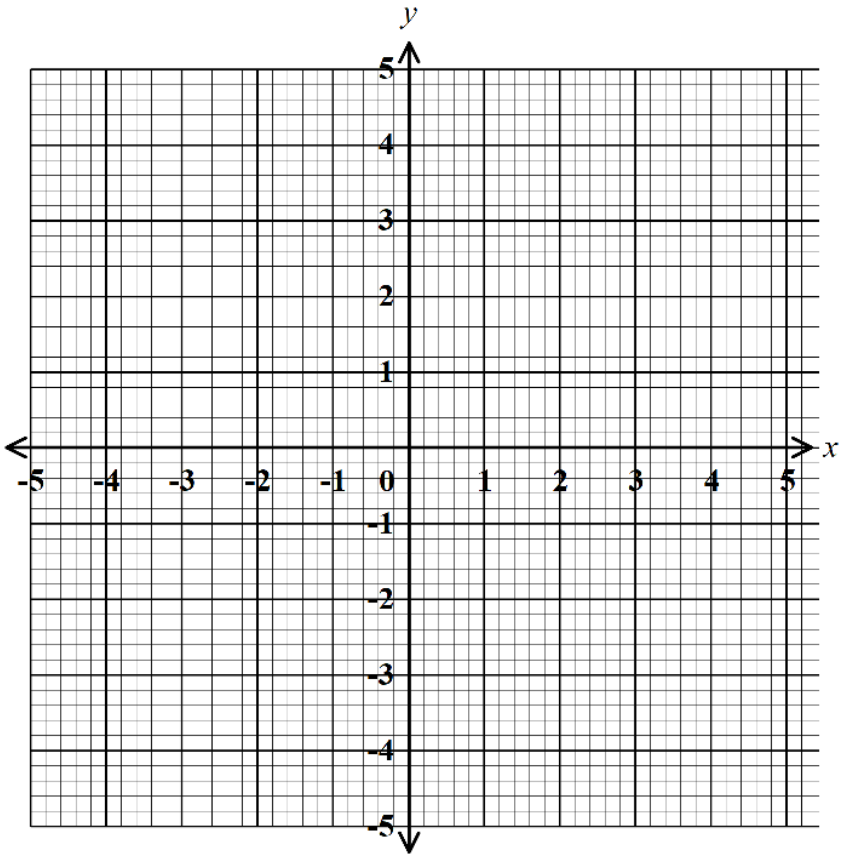
SHINING STUDENT

5. Using the grid provided below, solve the simultaneous equation
(3 marks)

$3x - 4y = 1$

$5x + 7y = 3$



6. Given that a chord of length $10\ cm$ subtends an angle of 1.2^{c} at the circumference of the circle. Calculate the radius of the circle.
(3 marks)

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SHINING STUDENT

7. When a shopkeeper sells articles at $\text{K sh } 24.05$, he makes a 30% profit on the cost price. During a sale, he reduced the price of each article to $\text{K sh } 22.95$. Calculate the percentage profit on an article sold at the sale price.
(3 marks)

8. The size of one interior angle of an irregular polygon is 80^0. Each of the other interior angles is 128^0. Find the number of sides of the polygon.
(3 marks)

9. Simplify $81^{\frac{3}{4}} - \left(\frac{1}{5}\right)^{-1} - 27^0$ (2 marks)

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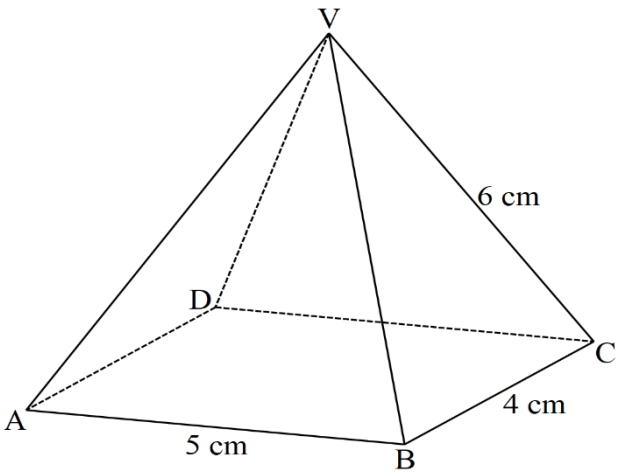
SHINING STUDENT

10. Given the inequalities $x - 6 \leq -3x + 2 < -2x + 9$

(a)Solve the inequality
(3 marks)

(b)Represent on a number line
(1 mark)

11. The diagram below represents a right rectangular based pyramid of 5 cm by 4 cm. The slant edge of the pyramid is 6 cm. Draw and label the net of the pyramid.
(3 marks)



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12. Vectors $\overrightarrow{OA} = 4i + 3j$, $\overrightarrow{OB} = -2i - j$ and $\overrightarrow{OC} = -5i - 3j$. Show that points A, B and C

are collinear.

(3 marks)

13. Find the period , amplitude and phase angle of the function $2y = 3\sin\left(\frac{1}{2}x - 60^0\right)$

(3 marks)

14. Simplify $\frac{20 - 11x - 3x^2}{16x - 12x^2}$ (3 marks)

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15. Write the following ratios in ascending order $2:3$, $15:16$, $7:6$, $13:15$
(3 marks)

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16. Under an enlargement, the image of the points $A(3,1)$ and $B(1,2)$ are $A'(3,7)$ and $B'(7,5)$. Find the centre and scale factor of enlargement.
(4 marks)

SECTION II (50 marks)

*Answer **only five** questions in this section in spaces provided*

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17. A straight line passes through $P(-1,1)$ and $Q(3,4)$.

(a)Find the length of line PQ
(2 marks)

(b) Find the equation of the perpendicular bisector of line PQ, leaving the equation in the form

$y = mx + c$ (4 marks)

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(c) Determine the equation of line parallel to line PQ and passes through point $(2,3)$, leaving

your answer in double intercept form. Hence state the y intercept.
(4 marks)

18. The marks scored by 30 students in test were recorded as follows

41	43	34	28	19	22
32	38	22	18	25	33
30	41	36	31	28	37
35	34	19	22	29	23
29	44	26	27	29	36

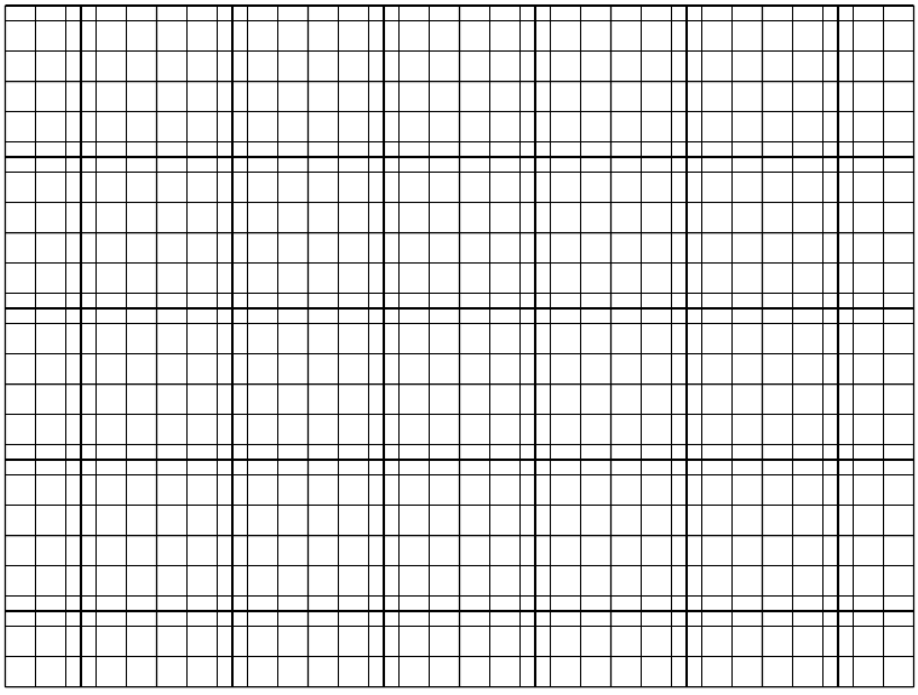
(a) Starting with the class $18-22$, make a frequency distribution table for the data.
(2 marks)

(b) Using the frequency distribution in (a) above calculate :

(i) the mean (2 marks)

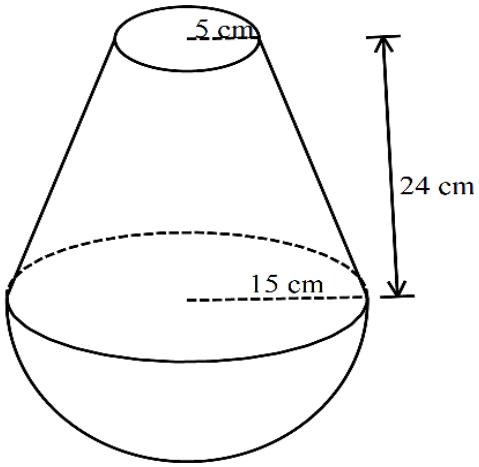
(ii) the median
(3 marks)

(c) Draw a frequency polygon to represent the data.
(3 marks)



SHINING STUDENT

19. The solid below is made up of hemispherical part and a frustum of cone. The top and bottom radius of the frustum are $5\ cm$ and $15\ cm$ respectively. The vertical height of the frustum is $24\ cm$.



(a) Determine the vertical height of the cone from which the frustum was cut.
(2 marks)

(b) Calculate

(i) The volume of the solid correct to 2 decimal places
(3 marks)

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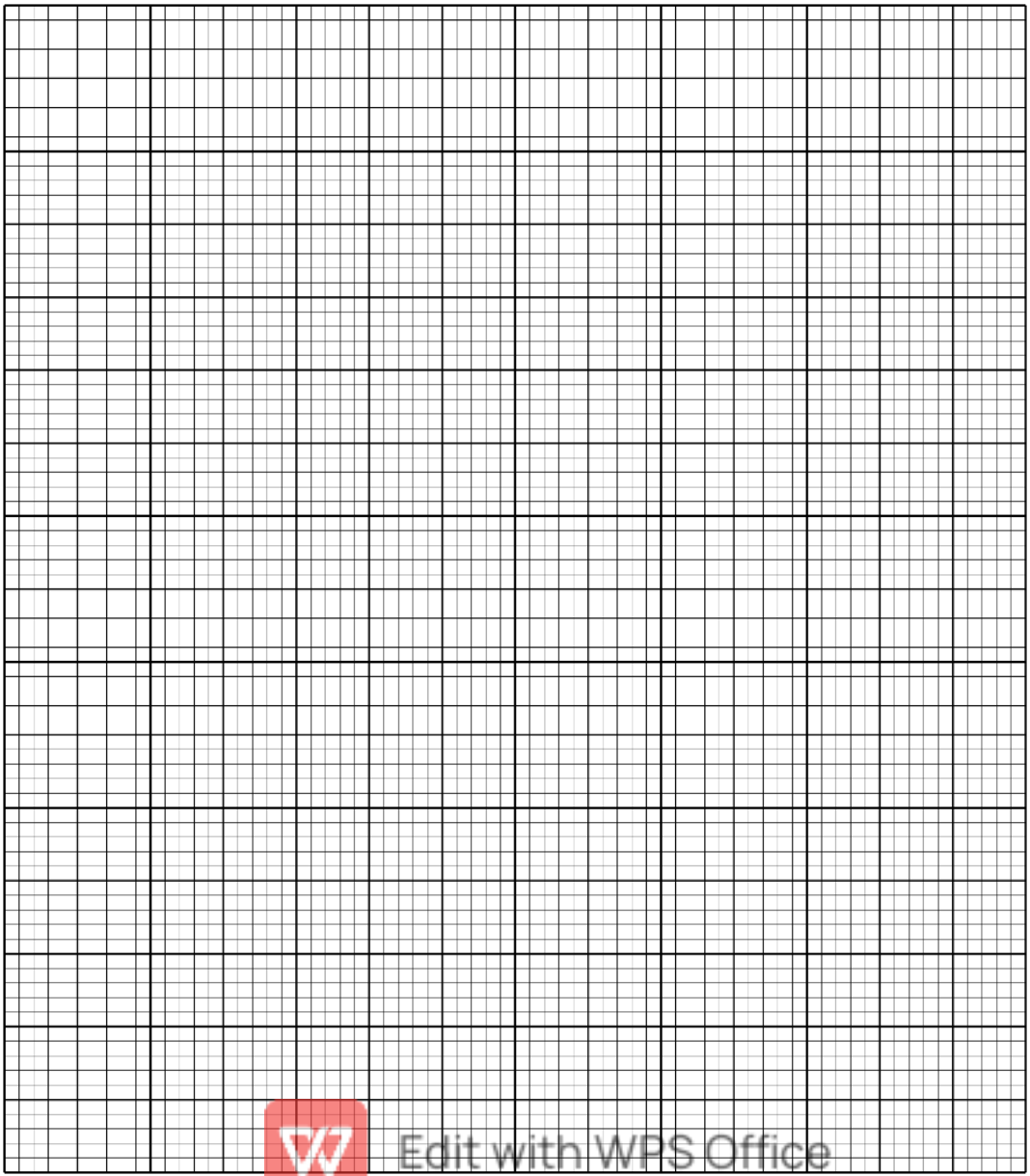
(ii) The surface area of the solid correct to 2 decimal places
(5 marks)

20. (a) (i) Draw the graph of the function $y = 2x^2 -$ for $-2 \leq x \leq$ (5 marks)



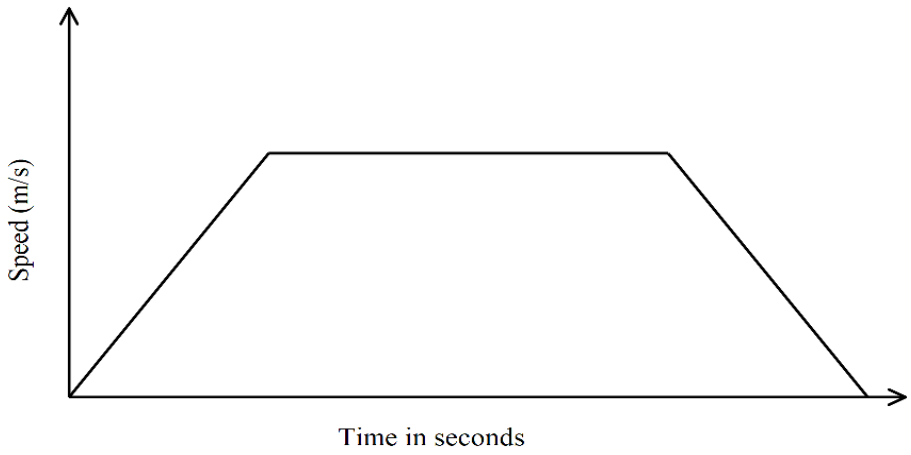
(ii) Use the graph to solve the equation $2x^2 - 3x - 5 = 0$
(1 mark)

(b) Use the graph to solve the simultaneous equation $y = 2x^2 - 3x - 5$ and $y = -2x - 2$ (3 marks)

(c) Write down the quadratic equation which the line $y = -2x - 2$ is solving.
(1 marks)

SHINING STUDENT

21. The diagram below shows the speed time graph for a bus travelling between two stations, the bus starts from rest and accelerates uniformly for 75 seconds. It then travels at constant speed for 150 seconds and finally decelerates uniformly for 100 seconds.



(a) Given that the distance between the two stations is $5225\ m$. Calculate

(i) maximum speed in km/h attained by the bus.
(3 marks)

(ii) the acceleration of the bus
(2 marks)

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(c) A van left Nairobi at 8.30 a.m and travelled towards Mombasa at an average speed of

$80\ km/h$. At 8.30 am a car left Nairobi and travelled along the same road at an average

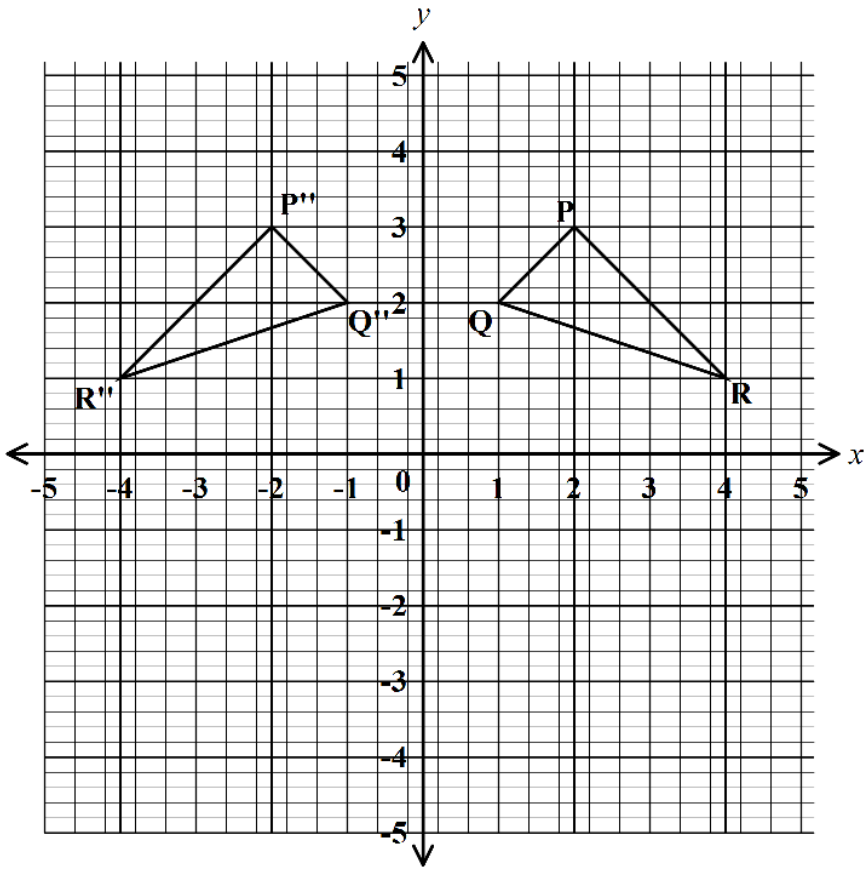
speed of $120\ km/h$.

(i) Calculate the distance covered by the car to catch up with the van.
(4 marks)

(ii) Find the time of the day when the car caught up with van.
(1 mark)

22. On the Cartesian plane below, triangle PQR has vertices P(2, 3), Q(1, 2) and R(4, 1) while triangle P''Q''R'' has vertices P''(-2, 3), Q''(-1, 2) and R''(-4, 1).

SHINING STUDENT



(a) Describe fully the transformation which maps triangle PQR onto triangle P''Q''R''.

(1 mark)

(b) On the same plane, draw triangle P'Q'R', the image of triangle PQR under a reflection in the line $y = -x$

(2 marks)

(c) Describe fully a single transformation which maps triangle P'Q'R' onto triangle P''Q''R''

(2 marks)

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(d) Draw triangle P'''Q'''R''' such that it can be mapped onto triangle PQR by a positive quarter turn about (0, 0)
(3 marks)

(e) State a pair of triangles that is

i) oppositely congruent
(1 mark)

ii) directly congruent
(1 mark)

23. The equation of the curve is $y = x^3 - 2x^2 - 1$

(a) Determine

(i) the stationary points
(4 marks)

(ii) the nature of the stationary points in (a) (i) above
(2 marks)

(b) Determine

(i) the equation of the tangent to the curve at $x = 1$
(2 marks)

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(ii) the equation of the normal to the curve at $x = 1$

(2 marks)

24. The boundaries of ranch AB, BC, CD and DA are straight lines such that B is 075^0 from A and a distance of $50\ km$. C is due east of B and a bearing of $N80^0E$ from A. D is due south of C and a distance of $70\ km$.

(a) Using a scale of **1 cm** to represent **10 km.** show the relative positions of $ABCD$.

(3 marks)

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(b) From the scale drawing, determine

(i) the distance in kilometres between B and C
(2 marks)

(ii) the bearing of A from D
(2 marks)

(iii) the shortest distance from A to border C D
(1 mark)

(c) Calculate the area of the ranch in square kilometer.
(2 marks)

SHINING STUDENT

NAME …… INDEX NUMBER……..

121 /2

Candidate's signature … ……..

MATHEMATICS ALT A *Class: .....*

POST MOCK 2022

Date……..

TIME: $2\frac{1}{2}$ *HRS*

INSTRUCTIONS TO CANDIDATES

Write your Name and Adm. Number in the spaces provided on top of the page.
The paper consists of Two sections. Section I and Section II
Answer **ALL** questions in Section I and any five questions in Section II
Mathematical tables may be used except where stated otherwise.
Candidates will be penalized for not following the instructions given in this paper.
For Examiner's Use Only
SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total

SECTION II (50 MARKS)

17	18	19	20	21	22	23	24	TOTAL

GRAND TOTAL

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SHINING STUDENT

SECTION I

1. Use logarithms to 4 decimal places to evaluate (4 marks)

$$\sqrt[3]{\frac{23.56 \times 0.28^2}{4329}}$$

2. Make **s** the subject of the formula (3 marks)

$$d=p\left(\sqrt{\frac{s^2 - w^2}{r^2 + 5^2}}\right)$$

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SHINING STUDENT

3. Without using tables or calculator, evaluate and simplify (4 marks)

$$\frac{\sin 30^0 + \sin 45^0}{\cos 60^0 - 1}$$

4. Given the position vectors $\vec{OA} = 4\mathbf{i} + 8\mathbf{j} - 2\mathbf{k}$ and $\vec{OB} = 3\mathbf{k} - \mathbf{i} - 2\mathbf{j}$. Point C divides vector AB in the ratio of 3:-1. Find the magnitude of $\vec{OC}$. Give your answer to 2dp (3 marks)

5. Given that the values P=8.2 cm, A=4.1cm and B=7.0 cm were measured to 1dp. Find the percentage error in the evaluation of

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(3 marks)

$$\frac{K}{A \times B}$$

6. Expand $\left(1-\frac{1}{2}x\right)^{10}$ upto the 4^{th} term in the ascending powers of x. Hence evaluate the value of $(0.95)^{10}$ to 3 decimal places. (3 marks)

7. Two types of coffee grade A and B retails at sh.240 and sh.300 respectively. Mohamed sell a mixture of both grades at shs.303 60, making a profit of 10%. Find the ratio in which he mixed the grades.

(3 marks)

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8. Juma a form 2 student was told to pick two number x and y from a set of digits 0,1,2,3,4,5 and 6. Find the probability that the [x-y] is atleast 3.
(3 marks)

9. Two quantities x and y are such that y varies partly as the square of x and partly inversely as the square root of x. Given that when x = 4, y = 40 and when x = 1, y = 18. Find the value of y when x = 0.25. (4 marks)

10. In a triangle ABC, AB=7.2 cm, AC=6.8 cm and angle BAC=120^0.

Calculate;

(i) The length of BC to 3s.f (2 marks)

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(ii) If a circle passes through the vertices A, B and C. Find the radius of the circle. (2 marks)

11. The table below shows income tax rates in a certain year

Monthly income in Kshs	Tax rate in each kshs
$1 \leq x < 9681$	10%
$9681 \leq x < 18801$	15%
$18801 \leq x < 27921$	20%
$27921 \leq x < 37040$	25%
Over 37040	30%

In that year Mr. Mogaka gets a total deduction of ksh5,000 he gets a personal tax relief of kshs.1056 and pays kshs.3944 for NHIF, WCPS and sacco loan repayment. Calculate

(i) P.A.Y.E. (1 mark)

(ii) Monthly income/salary (3 marks)

SHINING STUDENT

12. Given that the matrix $\begin{pmatrix} 3x & x \\ x-6 & -3 \end{pmatrix}$ maps a triangle A(0,0), B(2, 1) and c(3, 5) on to a straight line. Find the possible values of x. (3 marks)

13. The 2^{nd}, 10^{th} and 42^{nd} terms of an A.P forms the first three terms of a geometric progression, if the common differences of the AP=3. Find the sum of the first 10 terms of the G.p. (4 marks)

14. Raw data collected from experimental observation normally have errors. Below is a table of results obtained results from an experiment. The results show how length l(cm) of a metal rod various with increase in temperature T(^{0}c).

T(^{0}C)	0	1	2	3	4	5	6	7	8
L(cm)	4.0	4.3	4.7	4.9	5.0	5.5	5.9	6.0	6.4

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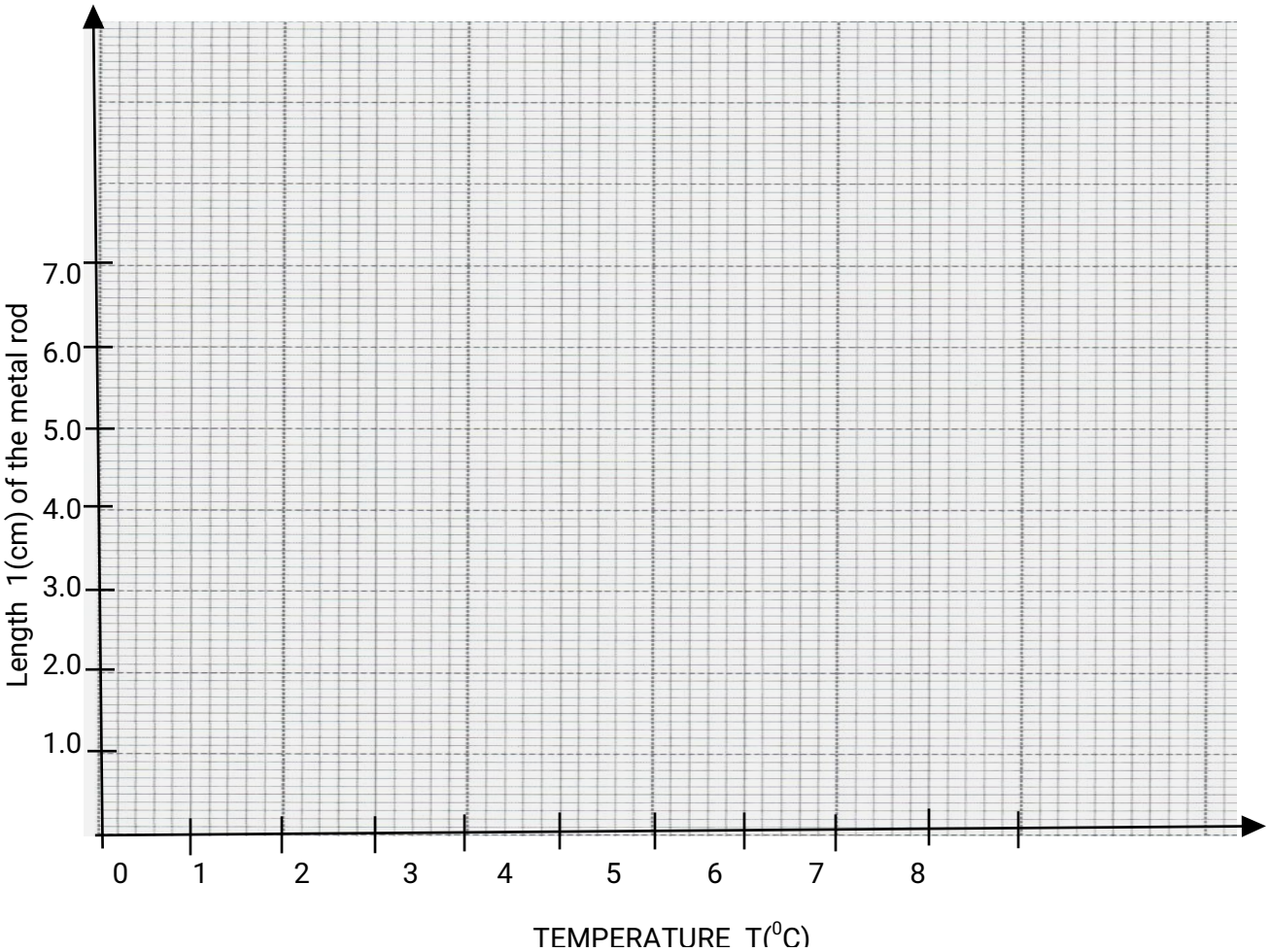
Plot the values in the graph given below and draw the line of best fit.

(2 marks)



15. Evaluate the value of x in the following trigonometric equation.

$\frac{1}{2}\sin^2 2x = +0.25$ for $-180° \leq x \leq 180°$ (3 marks)

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16. The points with co-ordinates A(13,3) and B(-3,-9) are the end of a diameter of a circle centre 0. Determine ;

(i) The coordinates of 0 (1 mark)

(ii) The equation of the circle expressing it in the form

$x^2 + y^2 + ax + by + c = 0$ (2 marks)

SECTION II

17. The following are the vertices of a triangle PQR P(1,1), Q(3, 1) and R(1,4)

i) Plot the triangle on the graph given (1 mark)

ii) Triangle PQR was reflected on the line x = 0 to give $P^1Q^1R^1$. Draw the triangle on the graph given.

iii) The triangle $P^1Q^1R^1$ was transformed by a matrix $\begin{pmatrix} 0 & 1 \\ -1 & 0 \end{pmatrix}$ to give $P^{11}Q^{11}R^{11}$. On the axes draw the triangle $P^{11}Q^{11}R^{11}$ on the grid. (2 marks)

iv) The triangle $P^{11}Q^{11}R^{11}$ was further transformed into a triangle $P^{111}Q^{111}$ and R^{111} using the matrix $\begin{pmatrix} 2 & 0 \\ 0 & 1 \end{pmatrix}$. Draw the triangle and state its coordinates (3 marks)

v) Calculate the area of the triangle $P^{111}Q^{111}R^{111}$ drawn above.

(2 marks)

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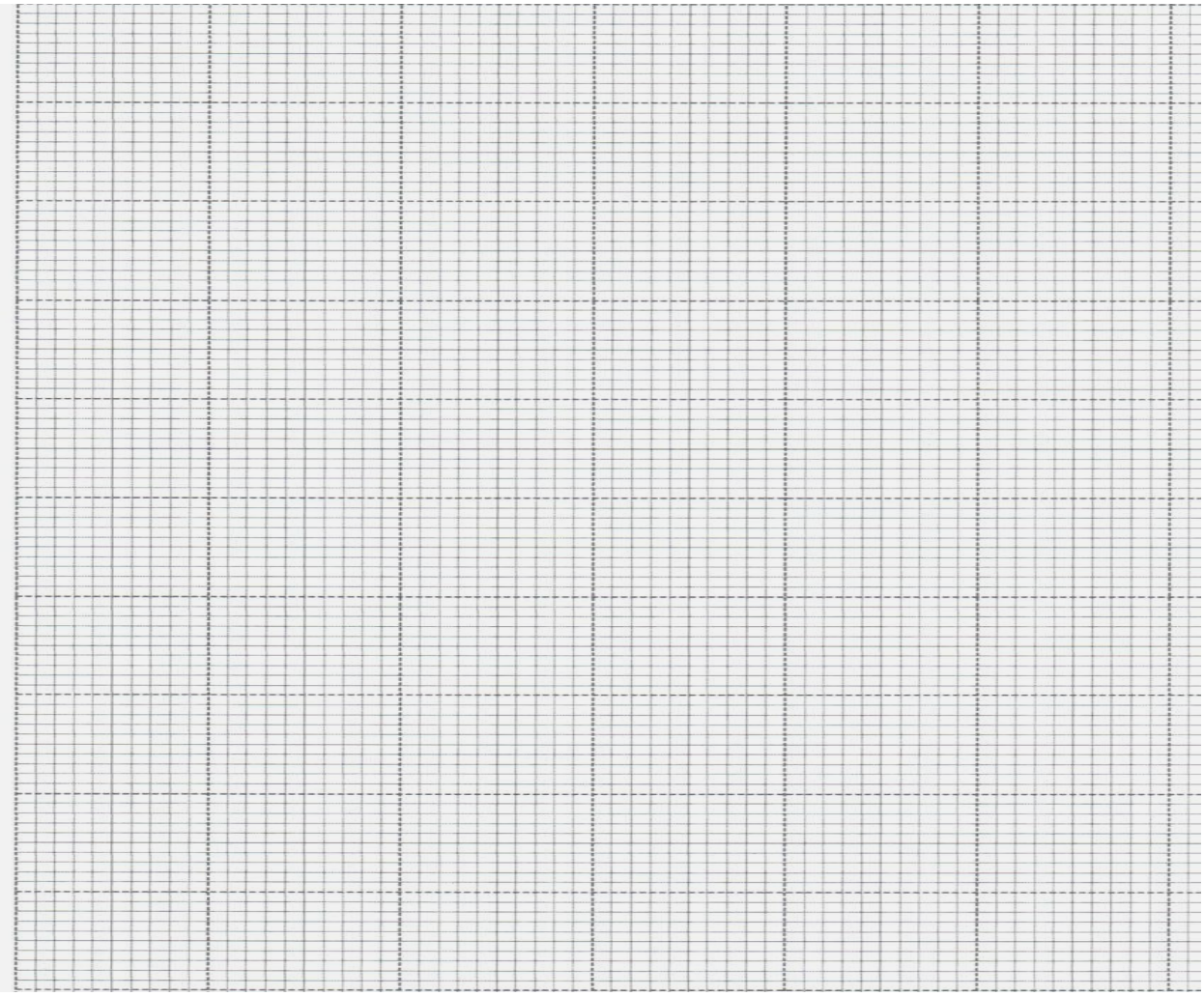
18. The table below shows the number of goals scored in handball matches during a tournament

Number of goals	0-10	10-20	20-30	30-40	40-50
Number of matches	2	14	24	12	8

(a) Draw a cumulative frequency curve in the space below. (3 marks)



i) Find the probability of scoring at least 20 goals using your graph.

(2 marks)

(b) Using an assumed mean of 25 calculate the standard deviation.

(3 marks)

(b) Calculate the 6^{th} decile (2 marks)

19. Using a ruler and a pair of compasses only;

i) Construct a triangle ABC such that AB=6cm, BC=8cm and angle

ABC=$60^{0.}$ (2 marks)

ii) On the same side of BC as A construct the locus of **m** such that angle BMC=60^{0}. (2 marks)

iii) Draw the locus of a point **Q** which is equidistant from B and C.

(2 marks)

iv) Draw the locus of a point R such that RC=3cm. (1 mark)

v) Draw the locus of a point P such that the area of triangle BPC=$12cm^{2}$.
(2 marks)

vi) Locate the region by shading such that; (2 marks)

Angle BMC ≥ 60^{0}, BQ ≥QC, RC<3 and area of BPC> $12cm^{2}$

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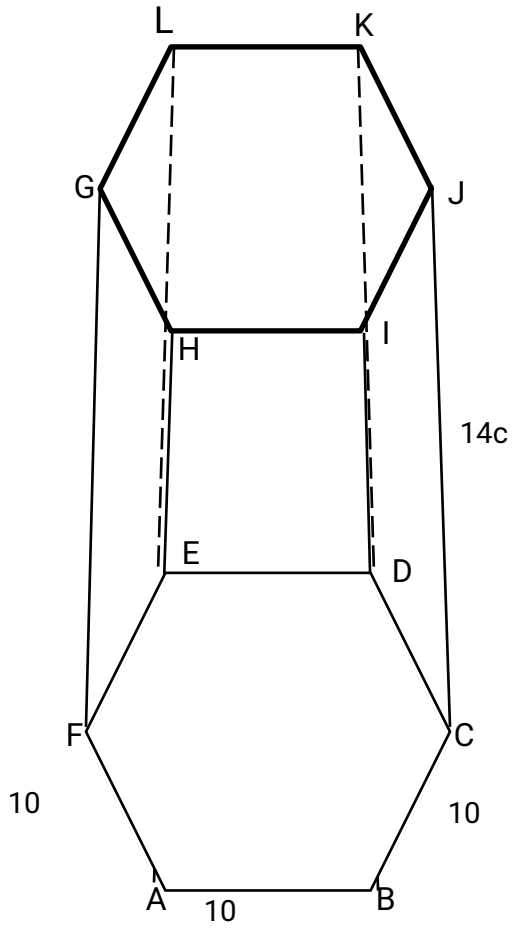
SHINING STUDENT

20.



A B C D E F G H I J K L is a solid frustum which was cut two thirds way from the base of a regular hexagonal based pyramid of side 10cm. If the slant edge is 14cm. Calculate;

i) Perpendicular height of the pyramid (2 marks)

ii) Find the angle between the surface ABIH and ABCDEF (3 marks)

iii) Calculate the angle between HA and the base ABCDEF (2 marks)

iv) Calculate the angle between LK and BI (2

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marks)

21. An Aeroplane moves from point A to D via B and C

(a) Give the position of B if the plane moves due north from A(30^{o}s, 20^{0}W) to B covering a distance of 3600 nm. (2 marks)

(b) Calculate the distance from B to C along the parallel of latitude given that C lies on 50^{0}E. (2 marks)

(c) Calculate the shortest distance from C to D(30^{0}N, 130^{0} W) if the plane moves from C to D. (3 marks)

(d) Given that the plane left A at 0700h and stopped at B for 3 minutes and at C for 45 minutes. Calculate the day and time it will arrive at D. if the speed of the plane was 300knots (3 marks)

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22. Complete the table below for the function $y = x^2 - 3x - 4$ (1 mark)

X	-2	-1.5	-1.0	-0.5	0	0.5	1.0	1.5	2.0	2.5	3.0
y											

(a) Use the table and trapezoidal rule with 11 ordinate to estimate the area bounded by the curve $y = x^2 - 3x - 4$, $x = -2$, $x = 3$ and x-axis (2 marks)

(b) Use the mid ordinate rule with 5 strips to estimate the area bounded by the curve $y = x^2 - 3x - 4$, $x = -2$, $x = 3$ and x-axis (2 marks)

(c) Calculate the exact area above (3 marks)

(d) Find the percentage error involve in using the mid-ordinate role. (2 marks)

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23. A particle moves in such a way that the velocity V at any given time is $v=10t - ½ t^2 - {}^{15}/_2$ mls.

(a) Calculate the initial velocity (1 mark)

(b) Calculate the velocity when the time t=3 (2 marks)

(c) Find the displacement during the 5^{th} second (4 marks)

(d) Calculate the maximum velocity attained (3

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marks)

24. The ministry of health made an order of both Astrazenica and Johnson and Johnson vaccines for a health centre. The total number of both

vaccines should be more than 600 boxes. The number of boxes of Johnson and Johnson should be less than 500 boxes and more or equal to twice the number of Astrazenica. Letting x to represent the number of Johnson and Johnson boxes and y – to represent the number of boxes of Astrazenica.

(a) i) Form all the in equalities in x and y to represent the above information. (3 marks)

ii) Represent the inequalities on a graph (4 marks)

(b) If the cost of importing 1 box of Johnson and Johnson is sh1000 and astrazenica is shs.800. Find maximum cost of importing the vaccines. (3 marks)

Name ……` **Index No.** ……

Candidates Sign: ……

Date: ……

232/1

PHYSICS

Paper 1

Time: *2 Hours*

POST MOCK 2022

Kenya Certificate of Secondary Education (K.C.S.E)

PHYSICS

Paper 1

Time: *2 Hours*

Instruction to Candidates

(o) *Write your name, index number in the spaces provided above.*
(p) *Sign and write the date of examination in the spaces provided above.*

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SHINING STUDENT

(q) *This paper consists of* **two** *sections:* **A** *and* **B**.
(r) *Answer* **all** *the questions in sections* **A** *and* **B** *in the spaces provided.*
(s) ***All*** *working* **must** *be clearly shown.*
(t) *Silent non-programmable electronic calculators may be used.*
(u) *Candidates should answer the questions in English.*

For Examiners Use Only

Section	Question	Maximum Score	Candidate's Score
A	1 – 12	25	
B	13	5	
	14	11	
	15	14	
	16	13	
	17	12	
Total Score		**80**	

This paper consists of 11 printed pages, candidate should check the questions to ascertain that all pages are printed as indicated and that no questions are missing

SECTION A (25 marks)

Answer all the Questions in this section in the spaces provided.

18. Sketch the scale of a vernier caliper showing a reading a 3.00 cm. (2 marks)

19. The figure below shows two drums A and B. Drum A is empty while drum B has a cylindrical rod.

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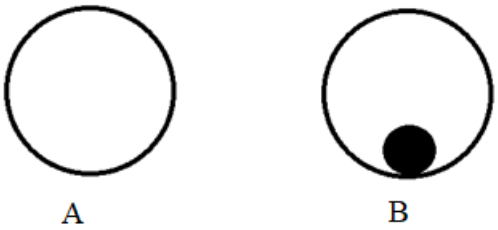

If the two drum are given the same rolling force, state and explain which drum stops first. (2 marks)

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20. An astronaut weighs 500 N on earth and 80N on the surface of another planet. Given that the gravitational field strength of the earth is 10 N/kg, calculate the gravitational field strength of the planet.
(2 marks)

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21. In order to estimate the height of a tree, a student measured the length of its shadow and found it to be 3.2 metres. A metre rule that she had produced a shadow of length 240 centimetres. What is the estimation of the tree height? (3 marks)

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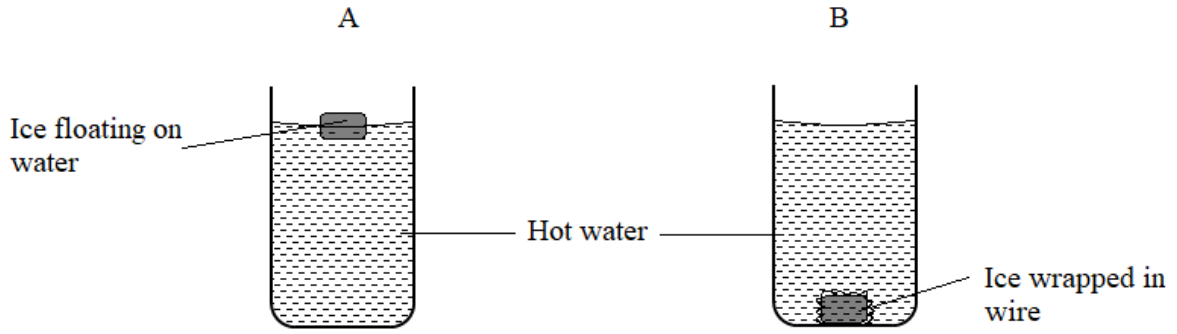
22. The figure below shows two identical containers A and B containing equal amounts of water and an identical ice block.



State with reason, which water cools faster, assuming the gauze absorbs negligible heat (2 marks)

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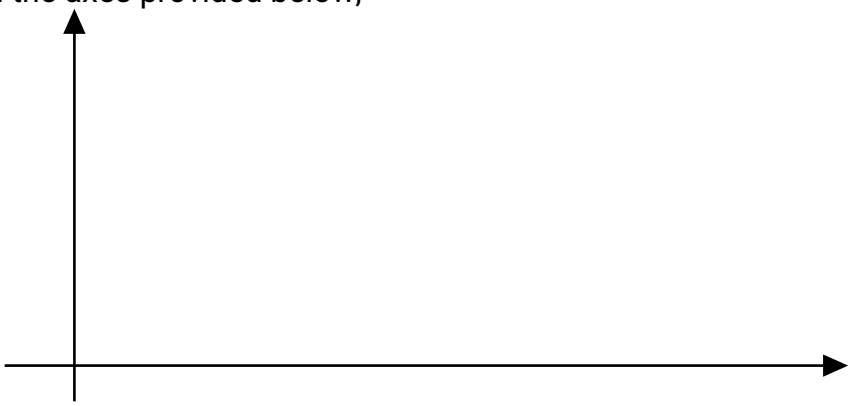
23. On the axes provided below,



(iii) Sketch a graph of pressure (P) against reciprocal of volume ($^{1}/_{V}$) of a fixed mass of an ideal gas at a constant temperature. (1 mark)

(iv) State the physical quantity represented by the gradient. (1 mark)

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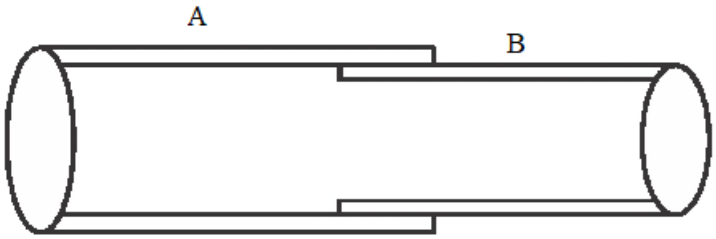
SHINING STUDENT

24. The figure below shows two pipes A and B of different expansivities tightly fitted onto each other at the junction. When some ice was placed at the junction, it became easy to separate the conductors.



Explain which of the two was a better conductor of heat. (2 marks)

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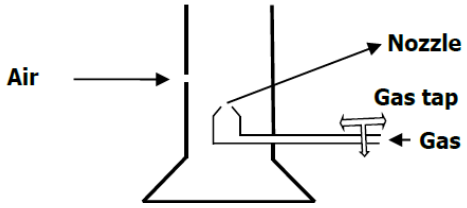
25. The figure below shows a Bunsen burner.



Explain how air is drawn into the burner when the gas tap is open. (2 marks)

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26. (a) Define Brownian motion (1 mark)

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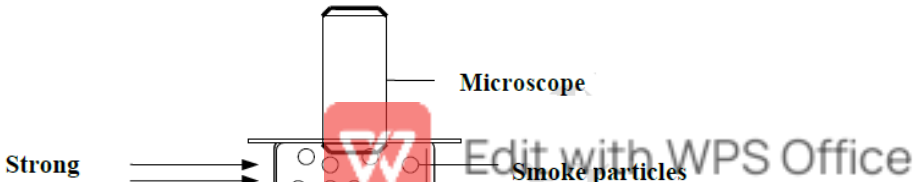
(b) The figure below shows apparatus used to observe the behaviour of smoke particles



in a smoke cell

State one reason why smoke is used in the experiment. (1 mark)

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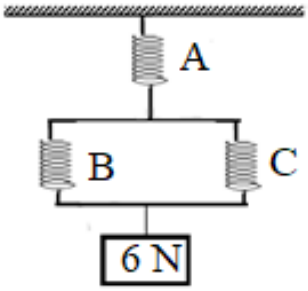
27. Three identical springs each of spring constant 10N/m and weight 0.5N are used to support a load as shown.



Determine the total extension of the system (2 marks)

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28. Other than the friction in a screw jack, state the reason it why it can't be 100% efficient. (1 mark)

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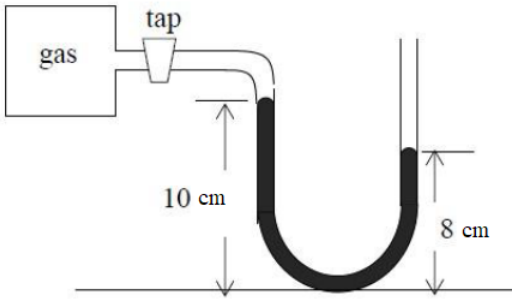
29. A U-tube containing mercury is used as a manometer to measure the pressure of a gas in a container. When the manometer has been connected and the tap opened, the mercury in the U-tube settles as shown in the diagram below.



If the atmospheric pressure is 760 mmHg and the density of mercury is 13 600 kg/m^3, calculate the pressure of the gas in Pascals. (3 marks)

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SECTION B (55 marks)

Answer all the Questions in this section in the spaces provided.

30. (a) State two ways of increasing the stability of a body (2 marks)

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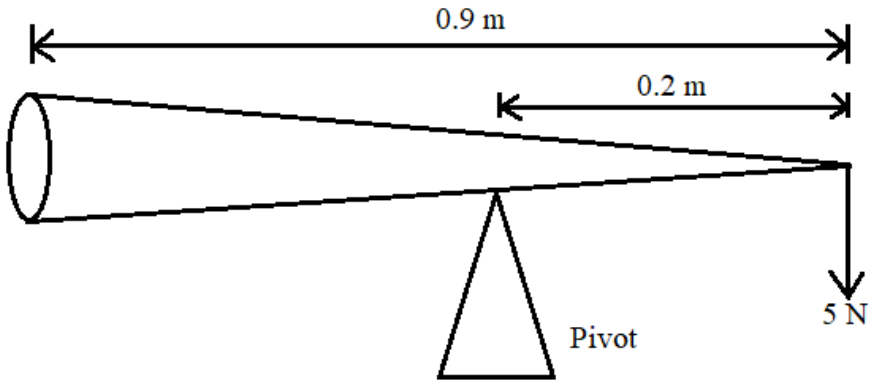
(b) The figure below shows a solid cone which has a uniform density in equilibrium under action of force F.



Determine the weight of the cone. (3 marks)

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31. (a) State the law of floatation. (1 mark)

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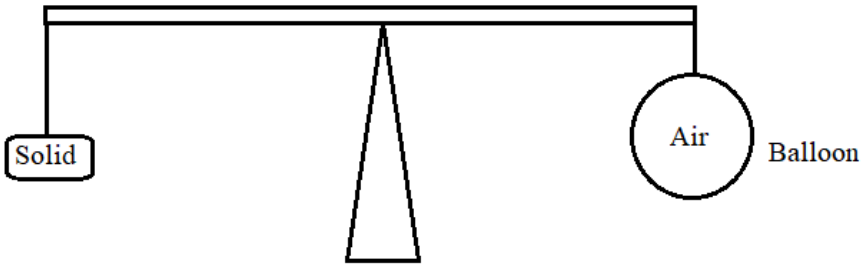
(b) The system in the figure below is at equilibrium.



State and **explain** what may be observed as temperature of surrounding is increased. (2 marks)

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(c) A hot air balloon is tethered to the ground on a windless day. The envelop of the

balloon contains 1200 m^3 of hot air of density 0.8kg/m^3. The mass of the balloon *(not including the hot air)* is 400kg. The density of the surrounding air is 1.3 kg/m^3.

(iv) Explain why the balloon would rise if it were not tethered. (2 marks)

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(v) Calculate the tension in the rope holding the balloon to the ground. (3 marks)

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(vi) Calculate the acceleration with which the balloon begins to rise when released. (3 marks)

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32. A string of negligible mass has a metal ball tied at the end of the string 100cm long and the ball has a mass of 0.04kg. The ball is swinging horizontally, making 4 revolutions per second.

Determine;

(g) the angular velocity. (3 marks)

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(h) the angular acceleration (2 marks)

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(i) The tension on the string (2 marks)

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(j) The linear velocity (2 marks)

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(k) A muddy water was put in a container and whirled at a high speed in a horizontal circle. Explain how the high speed causes the separation of mud from water (2 marks)

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(l) What provides for the centripetal force the following cases of circular motion? (3 marks)

(iv) The moon moving around the earth.

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(v) A cyclist negotiating a curve.

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(vi) Aeroplane taking a bend.

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33. (a) Define specific latent heat of vaporization (1 mark)

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(d) A jet of dry steam at 100_0C is sprayed on to the surface of 100g of dried ice at 0^0C contained in a well-lagged copper calorimeter, until all the ice has melted and the
temperature begin to rise. The mass of water in the calorimeter when the temperature reaches 40^0C is found to be 120 g. Assuming that the specific latent heat of fusion of ice is 336000JKg^{-1}, specific heat capacity of water is 4200J/Kg/K, heat capacity of the calorimeter is 300J/K. Determine the:

(iv) Heat gained by ice to melt (2 marks)

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(v) Heat gained by the calorimeter and the melted ice (3 marks)

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(vi) The specific latent heat of vaporization of water. (3 marks)

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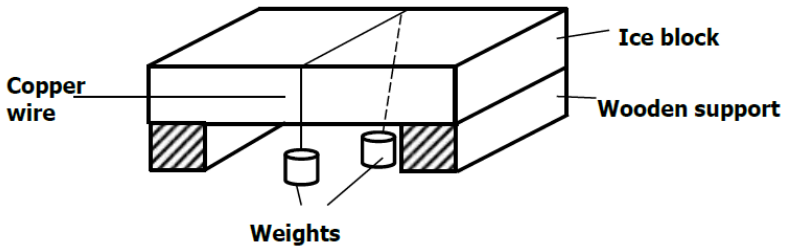
(e) Figure below shows a block of ice with two heavy weights hanging such that the

copper wire connecting them passes over the block of ice.



(iii) It is observed that the wire gradually cuts its way through the ice block, but leaves it as one piece. Explain.
(2 marks)

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(iv) What change would be observed if the copper wire used in the experiment was replaced an iron wire. Explain your answer. (2 marks)

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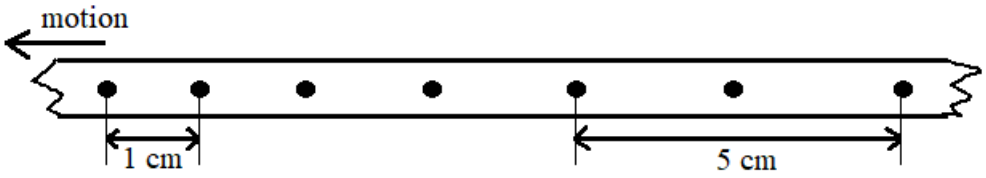
34. (a) The figure below shows the pattern formed on a tape in an experiment to determine the acceleration of a trolley. The frequency of the ticker tape used was 50Hz.



Calculate

iv) The initial velocity of the trolley (2 marks)

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v) The final velocity of the trolley (2 marks)

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vi) The acceleration of the trolley (3 marks)

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(b) Define the terms;

(iii) Inelastic collision. (1 mark)

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(iv) Inertia (1 mark)

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(c) A bullet of mass 20g leaves the muzzle of a gun at a speed of 250m/s. If the mass of the gun is 3.5kg, calculate the recoil velocity of the gun.
(3 marks)

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SHINING STUDENT

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Name ……` **Index No.** ……

Candidates Sign: ……..…..…..

Date: ……..

232/2

PHYSICS

Paper 2

Time: *2 Hours*

POST MOCK 2022

Kenya Certificate of Secondary Education (K.C.S.E)

PHYSICS

Paper 2

Time: *2 Hours*

Instruction to Candidates

(v) *Write your name, index number in the spaces provided above.*
(w) *Sign and write the date of examination in the spaces provided above.*
(x) *This paper consists of* **two** *sections:* **A** *and* **B**.
(y) *Answer* **all** *the questions in sections* **A** *and* **B** *in the spaces provided.*
(z) ***All*** *working* **must** *be clearly shown.*
(aa) *Silent non-programmable electronic calculators may be used.*
(ab) *Candidates should answer the questions in English.*

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SHINING STUDENT

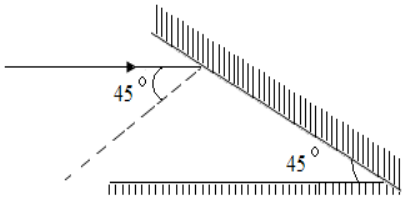
Section	Question	Maximum Score	Candidate's Score
A	1 – 12	25	
B	13	12	
	14	12	
	15	12	
	16	9	
	17	10	
Total Score		80	

This paper consists of 12 printed pages, candidate should check the questions to ascertain that all pages are printed as indicated and that no questions are missing

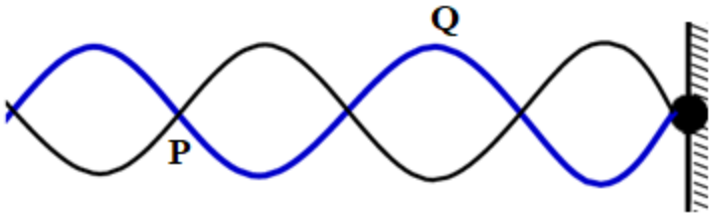
SECTION A 25 MARKS

Answer all the questions in the spaces provided.

18. The figure below shows a ray of light incident on a mirror at an angle of 45^{o}. Another mirror is placed at an angle of 45^{o} to the first one as shown. Sketch the path of the ray until it emerges. (2 marks)



19. The figure below shows a transverse stationary wave along a string.



Name P and Q and explain how each is formed. (3 marks)

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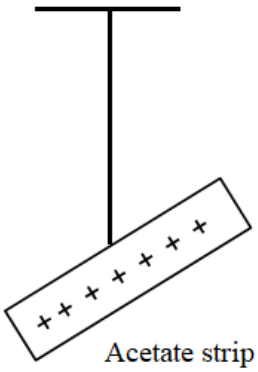
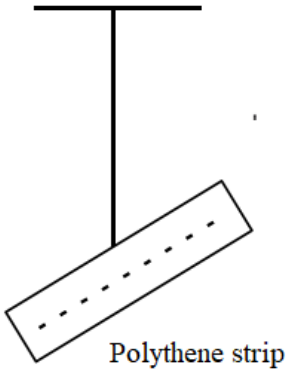
20. The diagrams below show a positively charged acetate strip and a negatively charged polythene strip freely suspended and isolated.





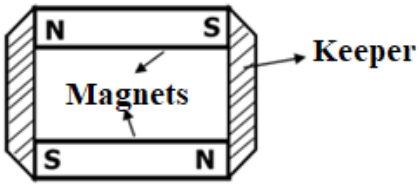
Two rods X and Y are brought up in turn to these strips. X attracts the acetate strip but repels the polythene strip. Rod Y does not repel either the acetate or the polythene. State the type of charge on

each rod.

X ..... (1 mark)

Y ..... (1 mark)

21. The figure below shows how magnets are stored in pairs with keepers at the end. Explain how this method of storing helps in retaining magnetism longer
(1 mark)



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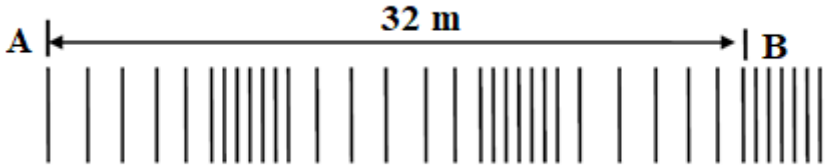
22. The diagram below shows waves generated from a tuning fork. If the wave takes 0.1 second to move from point A to B. determine the frequency of the wave. (3 marks)



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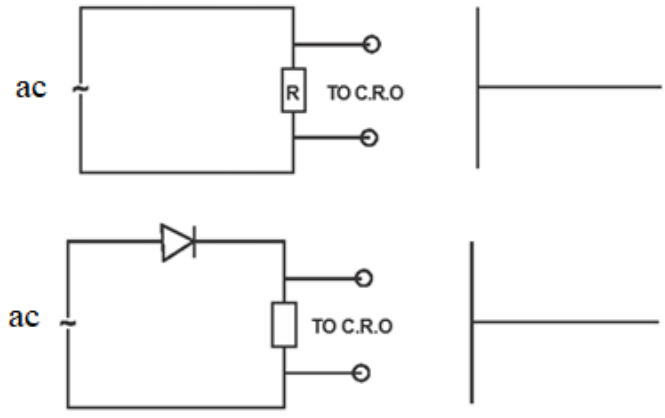
23. In the figure 9 and 10 below, sketch a graph for each to show the variation of voltage with time as displayed on a CRO screen. (2 marks)



24. Other than current state two other factors that affect the magnitude of force on a current carrying conductor placed in a magnetic field. (2 marks)

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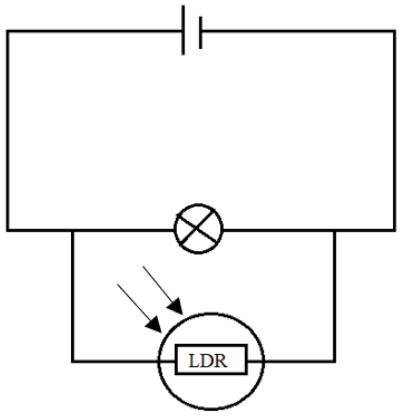
25. Concave mirrors are used by dentists to examine teeth. By use of a ray diagram show how this is achieved. (2 marks)

26. A student connected the set up below in the laboratory. Explain the observation made on the bulb when the set-up below is taken to a dark room
(2 marks)



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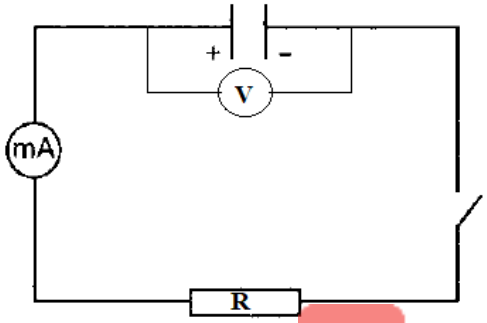
27. The figure below shows a fully charged capacitor



(iii) State the observation made on the voltmeter when the switch is closed. (1 mark)

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(iv) State the function of resistor R (1 mark)

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28. Calculate the maximum number of 100W bulbs that can be safely connected to 240V in a circuit fitted with 13A fuse. (2 marks)

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29. The figure below part of electromagnetic spectrum.

A		Visible light	UV	

Identify radiation A and state its source. (2 marks)

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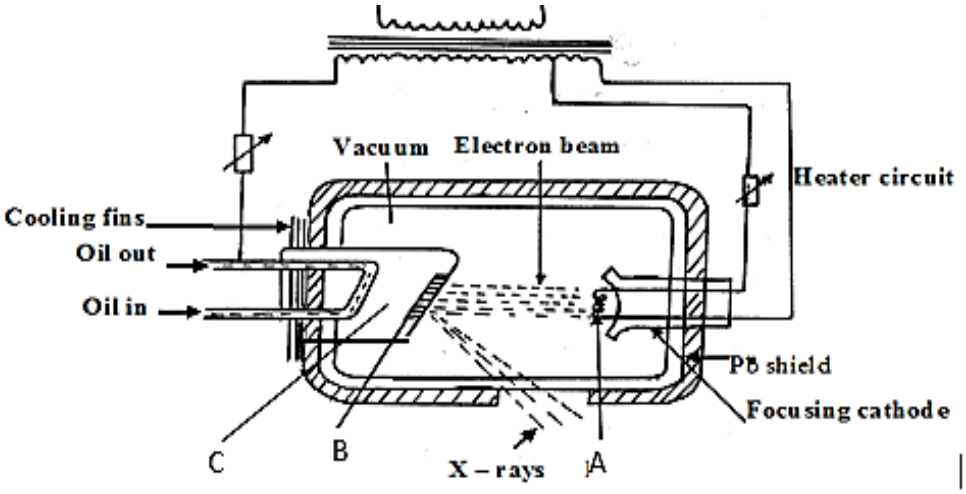
SECTION B 55 MARKS

Answer all the questions in this section in the spaces provided.

30. (a) The figure below shows a X-ray tube.



(vi) Name the part labelled C (1 mark)

……

(vii) State the property of the material labelled B on the diagram which makes it suitable for use in the X-ray tube.
(1 marks)

……

……

(viii) Why is C inclined at an angle of 45^{o}? (1 mark)

……

……

(ix) State the adjustment that can be made to vary

III. The quality of X-rays (1 mark)

……

……

IV. The quantity of the X-rays. (1 mark)

……

……

(x) An x-ray tube has an accelerating potential of 100KV. Determine the maximum frequency of the x-rays produced.

(Plank's constant = 6.63×10^{-34} Js, e = 1.6×10^{-19}C) (3 marks)

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……

……

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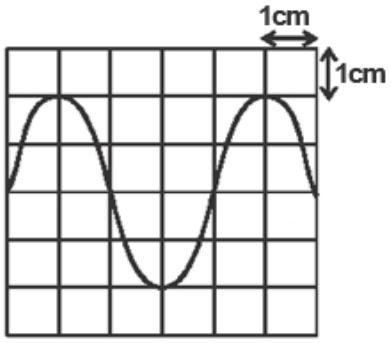
(e) In a CRO, waveform given below was displayed on the screen when the sensitivity at the Y plate was10V/cm andtime base set at 20 milliseconds/cm.



Determine:

(iii) peak voltage (2 marks)

.....

.....

.....

(iv) frequency of the signal (2 marks)

.....

.....

.....

31. a) $^{226}_{88}Ra$ decays into $^{222}_{86}Rn$ by emission of an alpha particle. Write a nuclear equation for the decay (1 marks)

d)

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iii) What do you understand by the term half-life of a radioactive substance? (1 mark)

.....

.....

iv) A G.M tube registers 20 counts. When a radioactive source is brought close to it, it registers 3220 counts and 120 counts 30 hours later. What is the half-life of this substance? (3 marks)

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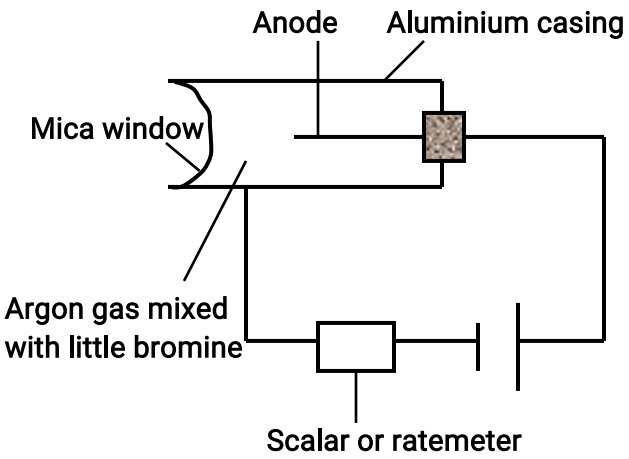
e) The figure below shows a G.M tube.



vi) What is the purpose of the mica window? (1 mark)

.....

.....

vii) Explain the purpose of the bromine (2 mark)

.....

.....

viii) Why should argon gas be kept at low pressure (1 mark)

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.....

ix) What is meant by the term "*dead time*" as used in GM tube (1 mark)

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.....

x) Briefly explain how GM tube works. (2 marks)

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32. (a) State the Ohms Law (1 mark)

.....

.....

(b) You are provided a rheostat, 2 cell, a voltmeter, an ammeter, a switch and a fixed resistor.

iii) Draw a circuit diagram that can be used to verify Ohms law. (2 marks)

iv) Describe how the above set up can be used to determine Ohms law. (4 marks)

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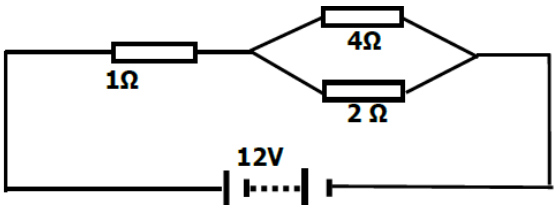
(f) **Study** the circuit diagram below and answer the questions that follow.



Calculate

(iii) Determine the total resistance in the circuit. (2 marks)

.....

.....

(iv) The current through the 4Ω resistor (3 marks)

.....

.....

.....

.....

33. a) State Snell's law (1mark)

.....

.....

e) A ray of light travelling from water to glass makes an angle of incident of 30^0. Find the angle of refraction in the glass. Refractive index of water = $^4/_3$. Refractive index of glass = $^3/_2$ (3 marks)

.....

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.....

f) State the necessary and sufficient conditions for total internal reflection to occur. (2 marks)

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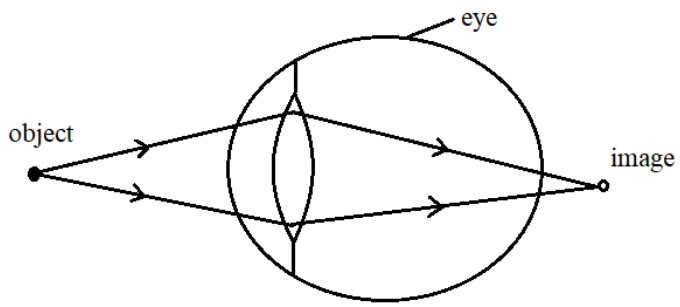
g) The figure below shows a human eye defect.



(iii) State one possible cause of this defect. (1 mark)

.....

.....

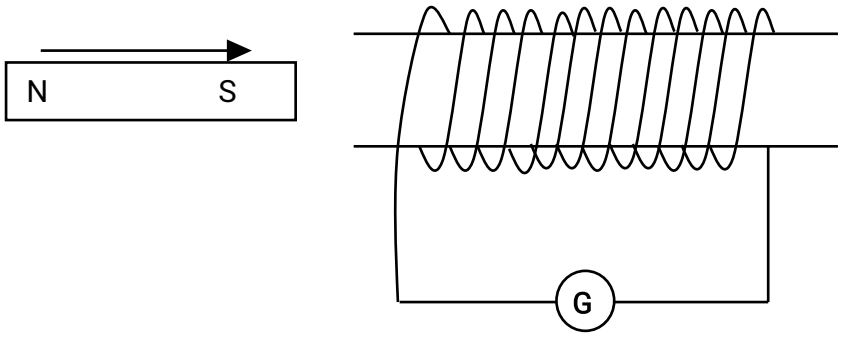
(iv) On the diagram, show how the defect is corrected. (2 mark)

34. (a) State the Lenz's law of electromagnetic induction. (1 mark)

.....

.....

(b) A bar magnet is moved into a coil of an insulated copper wire connected to a zero centre galvanometer as shown below



(iii) Show on the figure above the direction of the induced current in the coil (1 mark)

(iv) State and explain what is observed on the galvanometer when the south pole of the magnet is moved into and then withdrawn from the coil. (2 marks)

……

……

(c) A transformer has 800 turns in the primary and 40 turns in the secondary winding. The alternating voltage connected to the primary is 240V and current of 0.5.A. If 10% of the power is dissipated as heat within the transformer, ddetermine the current in the secondary coil.

(3 marks)

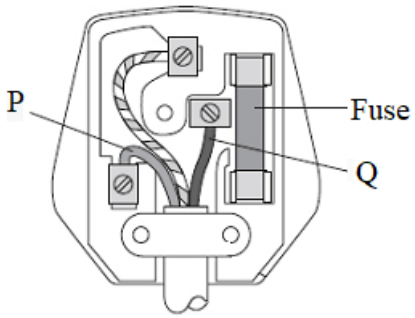
……

……

……

……

(g) The diagram below shows a three-pin plug.



(iii) Name the colour of conductors P and Q (2 marks)

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P……Q……

……

(iv) Why is the earth pin longer than the rest in the three-pin plug shown above? (1 mark)

……

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POST MOCK 2022

PHYSICS PAPER 3

PRACTICAL CONFIDENTIAL

Please provide the following for the physics practical paper.

QUESTION 1

- 2 dry cells
- A cell holder
- A switch
- An ammeter *(with a scale range of 0-1A)*
- Six connecting wires
- Wire mounted on the metre rule labelled X ***(SWG 28 or 0.37mm in diameter)***
- A micrometer screw gauge *(to be shared)*
- A Voltmeter

QUESTION 2

- a metre rule

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- knife edge raised at least 20 cm above bench
- one 50 g mass and one 100 g mass
- a beaker or any container
- 2 pieces of thread *(around 15 cm each)*
- some water in a beaker
- Liquid L in a beaker *(Paraffin)*
- Some tissue paper.
- A triangular **glass** prism
- A piece of soft board
- Four optical pins
- Four office pins
- A sheet of plain paper

Name ……` **Index No.** ……

Candidates Sign: ……

Date: ……

232/3

PHYSICS

Paper 3 (Practical)

Time: *2 ¼ Hours*

POST MOCK 2022

Kenya Certificate of Secondary Education (K.C.S.E)

PHYSICS

Paper 3 (Practical)

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SHINING STUDENT

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided above.*
- *Sign and write the **date** of the examination in the spaces provided above.*
- *You are supposed to spend the first **15** minutes of the **2 ½** hours allowed for this paper reading the whole paper carefully before commencing your work.*
- *Marks are given for a clear record of the observation actually made, their suitability, accuracy and the use made of them.*
- *Candidates are advised to record their observations as soon as they are made*
- *Non-programmable silent electronic calculators **may be** used.*
- *Candidates should check the question paper to ascertain that all the pages are printed and that no questions are missing.*

For Examiner's Use Only.

Question	Maximum score	Candidate's score
1	20	
2	20	
Total	40	

This paper consists of 8 printed pages candidates should check the questions to ascertain that all pages are printed as indicated and that no questions are missing

QUESTION 1

You are provided with the following: -

- 2 dry cells
- A cell holder
- A switch
- An ammeter
- Five connecting wires

- Wire mounted on the metre rule labelled x
- A micrometer screw gauge [to be shared
- A Voltmeter

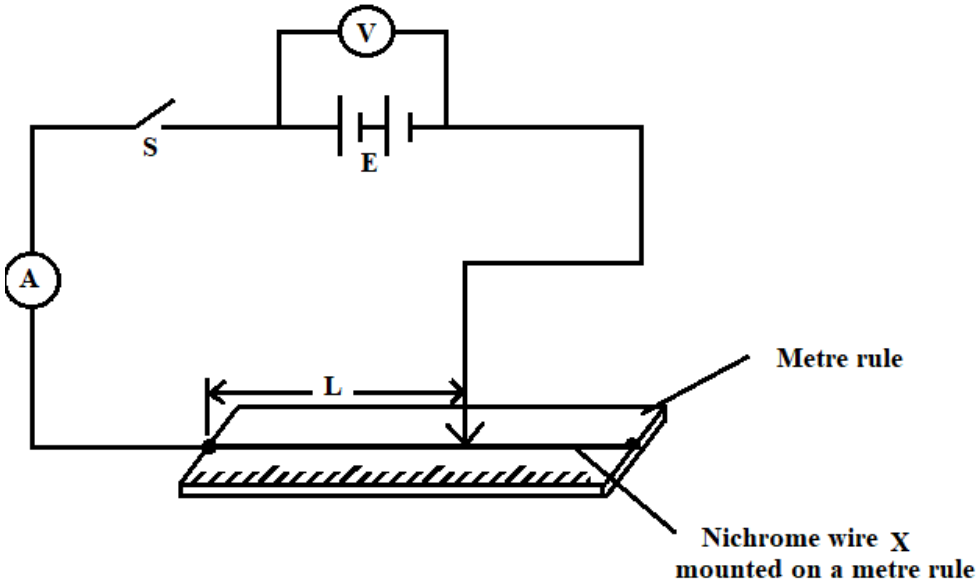
Proceed as follows

(a) Measure the diameter of the wire three times and determine the average diameter,

(b) D ……. m (2 marks)

(c) Determine the cross-section area of the wire, A……. m^2 (1 marks)

(d) Connect the circuit as shown in the figure below.



(e) **Measure** the voltage E from the Voltmeter, before closing the switch.

E = ... (1 mark)

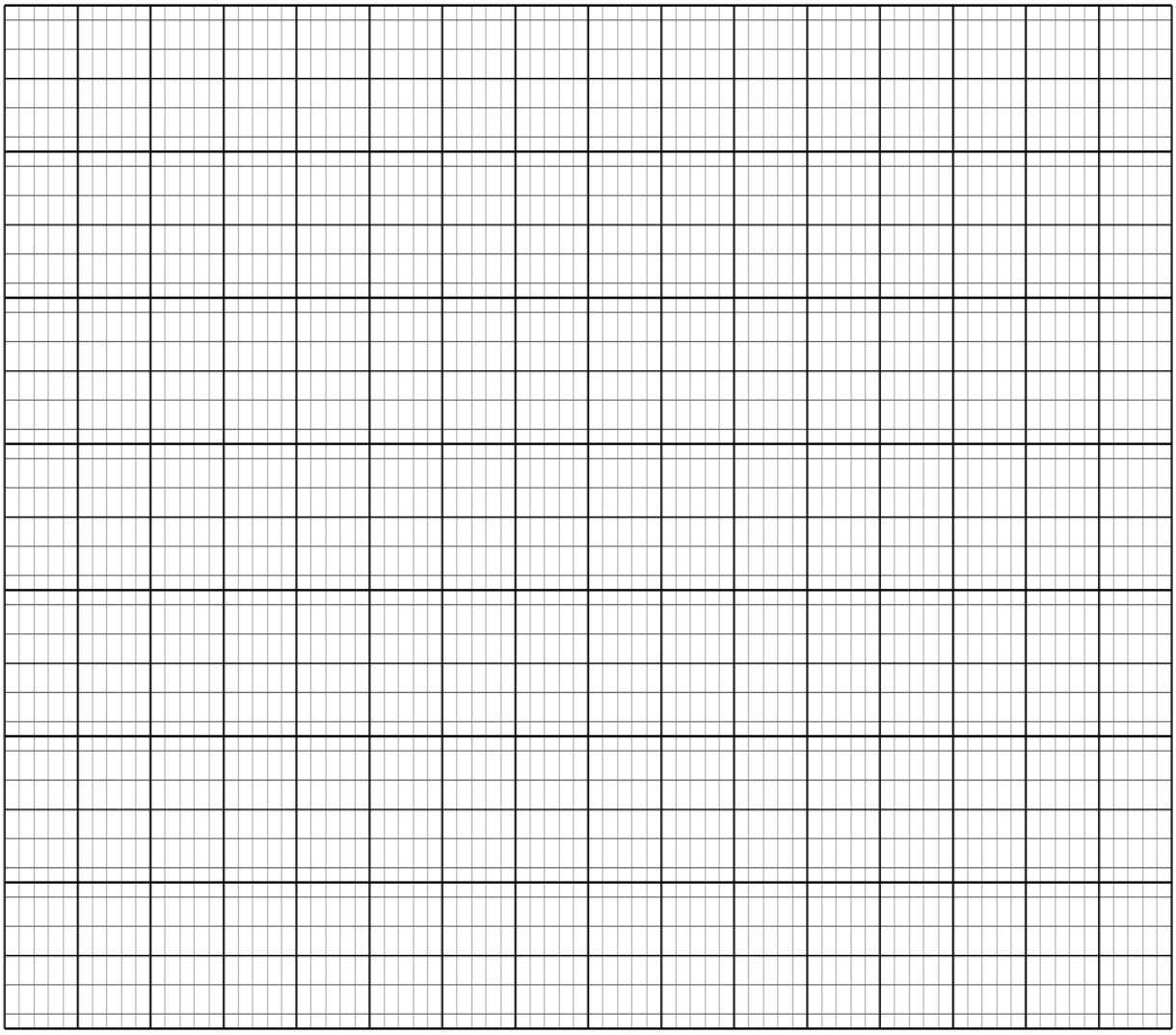
(f) Adjust the length, ℓ of the wire to 0.2m, close the switch, S and read the value of current and record in the table below.

Length, ℓ (m)	0.2	0.3	0.4	0.5	0.6	0.7
Current, I (A)						
$\frac{1}{I}$ (A^{-1})						

(g) Repeat the procedure in (c) above for the values of lengths given. (5 marks)

(h) **Calculate** the value of $^{1}/_{I}$ and record in the table above. (1 mark)

(i) On the grid provided **plot** a graph of $\frac{1}{I}$ (y- axis) against *I* (5 marks)



(j) **Determine** the gradient of the graph. (2 marks)

……

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……

……..

() Given that, $\frac{1}{I} = \frac{\delta}{EA}l + \frac{r}{E}$, determine the value of δ and r. (3 marks)

……

……

……

QUESTION 2

You are provided with the following:

- a metre rule
- knife edge raised 20 cm above bench
- one 50 g mass and one 100 g mass
- a beaker or any container
- some thread
- some water in a beaker
- Liquid L in a beaker
- tissue paper
- A triangular glass prism
- A piece of soft board
- Four optical pins
- Four office pins
- A sheet of plain paper

PART A

Proceed as follows:

(i) Balance the metre rule edge and record the reading at this point

Balance point = ... cm (1 mark)

For the rest of this experiment the knife edge must be placed at this position

(j) Set up the apparatus as shown in the figure below.

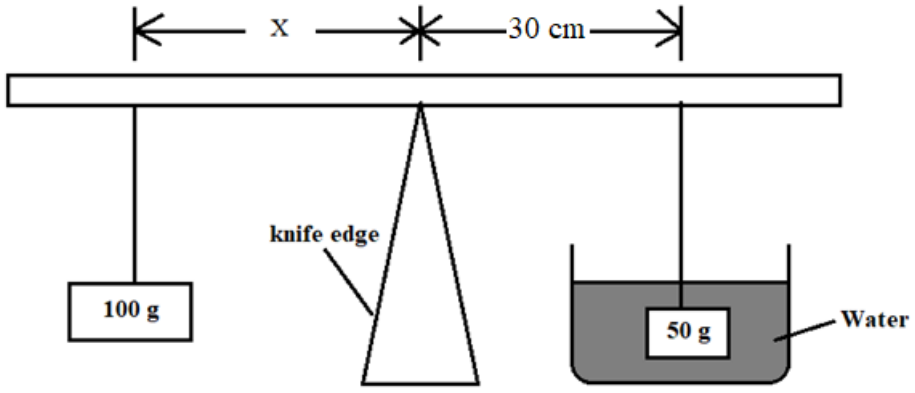
(k) Use the thread provided to hang the masses such that the positions of support can be adjusted. The balance is attained by adjusting the position of the 100g mass.

Note that the distances X is measured form the knife edge and the 50g mass is fully submerged in the water.

(l) Record the value of X .

X =.....cm (1 mark)

(m).....Apply the principle of moments to determine the weight W_w of the 50 g mass in water and hence determine the up thrust U_w in water



W_w.....

N

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..... (2 marks)

U_w ..... N (1 mark)

(n) Remove the 50 g mass from the water and dry it using tissue paper.

(o) Maintaining the distance of 30cm in step (d), now balance the metre rule when the 50 g mass is fully submerged in the liquid L Record the value of the distance X.

X = ... cm (1 mark)

(p) Apply the principle of moments to determine the weight W_L of the 50 g mass in the liquid L and hence determine the upthrust U_L in the liquid

(iv) W_L= (2 mark)

……

(v) U_L= (1 mark)

…….

(vi) RD of liquid L (2 marks)

……

……

PART B

Proceed as follows:

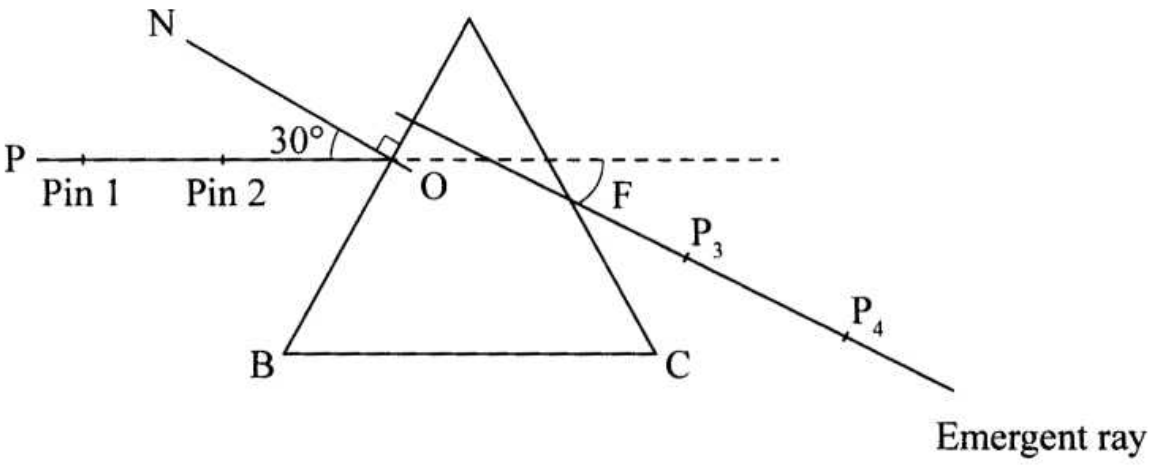
(h) Place the plain sheet of paper on the soft board and pin it using the office pins at the comers. Trace the triangular prism outline of the prism on the sheet of paper (use the upper part to leave space for two other outlines on the same page). Label the vertices of the outline at A, B and C. Remove the prism from the paper.

(i) On the outline at a point O near the centre of side AB draw a normal ON.

(j) Draw a line PO at an angle of 30° to the normal ON as shown in **the figure below.**

(k) Replace the prism accurately on the outline. Fix two optical pins vertically on line PO at different points **(see the figure below).**

(l) View the images of the two pins through side AC of the outline. Fix a third and fourth pin vertically such that they are in line with the images of the first and second pin. Remove the prism and the pins. Draw a line joining the marks made by the third and fourth pins and extend it to join line PO (also extended) as shown below.



Measure F, the angle of deviation of the emergent ray. (2 marks)

……

……

(m) Repeat part (e) for other angles of incidence shown in the table below. (Draw a fresh outline of the prism for each angle of incidence)

Complete table 1 (3 marks)

Angle of incidence	30°	50°	70°
Angle of deviation			

(n) Determine:

(iii) E the angle of emergence (between the emergent ray and the normal at the point of emergence) at the least angle of deviation. (2 marks)

……

……

……

(iv) K given that $K = 2\sin\left(30+\frac{F_o}{2}\right)$ (where F_0 is the least angle of deviation) (2 marks)

……

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(Attach the plain sheet of paper to your question paper and hand them in).