KCSE 2022 PASSWORD

ALL SUBJECTS

SUBJECTS PREDICTED;

Mathematics, English, Kiswahili, Biology, Chemistry, Physics, CRE, History, Geography, Business Studies, Agriculture, French, IRE, Home-science &Computer Studies.

1ST Series of Exclusive Set of Probable Questions/Areas Predicted to be examined in the Final Examinations for our KCSE Candidates Scheduled for November 2022.The Key &Pathway to Success

CONFIDENTIAL

For Marking Schemes
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SUCCESS TO ALL CANDIDATES

KCSE 2022 PASSWORD

SERIES 1

NAME……………………………………………… INDEX NO………………………

SCHOOL…………………………………………… SIGN………………………………

DATE…………………………………………………

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

231/1

BIOLOGY

PAPER 1

(THEORY)

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your **Name**, **Index Number** and **School** in the spaces provided above.
2. **Sign** and write the **DATE** of examination in the spaces provided above.
3. Answer **all** the questions in the spaces provided.
4. Answers must be written in the spaces provided in the question paper.
5. Additional pages must not be inserted.
6. Check the question paper to ascertain that all the pages are printed and that no questions are missing.

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1-27	80	

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

1. Explain the following terms.

 a) Taxonomy   **(1mrk)**

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………………………………………………………………………………………………………

b) Species   **(1mrk)**

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2.   State three features used in classifying arthropods into classes.   **(3mrks)**

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3.   a) Name the substance that accumulates in muscles when respiration occurs with insufficient Oxygen.   **(1mrk)**

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 b) Give the three end products of anaerobic respiration in plants.   **(3mrks)**

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4.   a) State three characteristics of a wind pollinated flower.   **(3mrks)**

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b) Explain why sexual reproduction is important to organisms.   **(1mrk)**

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5.   State the functions of the following organelles.

a). Lysosomes   **(1mrk)**

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....

b). Golgi apparatus   **(1mrk)**

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6.   What is the role of vascular bundles in plant nutrition?   **(3mrks)**

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7.   Haemophilia is a genetic disorder which is transmitted through a recessive gene linked to the X chromosome. Using H to represent the normal gene and h for haemophilia, work out the genotypic ratio of the offspring of a marriage between a woman who is carrier for haemophilia gene and a normal man.   **(4mrks)**

8.   a) In what form does energy enter the earth's ecosystem?   **(1mrk)**

....

b)   What is the main source of energy in an ecosystem   **(1mrk)**

....

c)   In what form does energy transferred from one trophic level to another?   **(1mrk)**

....

d) If only a small fraction of energy is transferred from one trophic level to another, what happens to the rest of the energy? **(1mrk)**

....

....

9. The diagram below represents gaseous exchange in the alveolus.
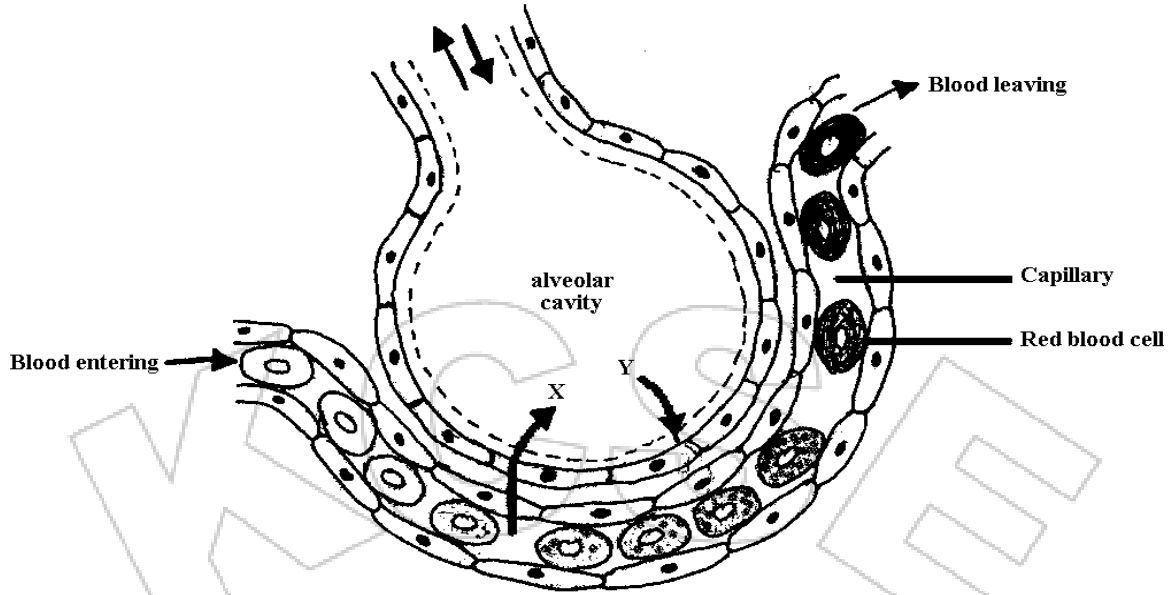
a). Identify the gases labeled X and Y. **(2mrks)**

....

....

b). Trace the path followed by gas Y from alveolar space until it reaches the red blood cells. **(3mrks)**

....

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....

....

c). Name the part of the brain that controls breathing movement in humans. **(1mrk)**

....

....

10. The table below shows the energy use per day in kilojoules

Age(years)	Male	Female
2	5,500	5,500
5	7,000	7,000
8	8,800	8,000
11	10,000	9,200
14	12,500	10,500
18	14,200	9,600
25	12,100	8,800

a). From the table, explain why after age 8 males require more energy than females.   **(1mrk)**

....

....

b). Other than sex and age, name three other factors that determine energy requirements in human beings   **(3mrks)**

....

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11.   a) Define organic evolution.   **(1mrk)**

....

....

b). Give the role played by variation in the process of evolution.   **(2mrks)**

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....

12.   a) What are halophytes?   **(1mrk)**

....

....

b) State three adaptations of halophytes to their habitats. **(2mrks)**

....

....

....

13. **a)** Name the causative agent of the following diseases in humans. **(2mrks)**

Syphilis..

Herpes..

b). State the functions of the following structures. **(2mrks)**

Fallopian tube

....

....

Amniotic fluid

....

....

14. An experiment was set up as shown below to compare the amount of carbon (iv) oxide in expired and inspired air.
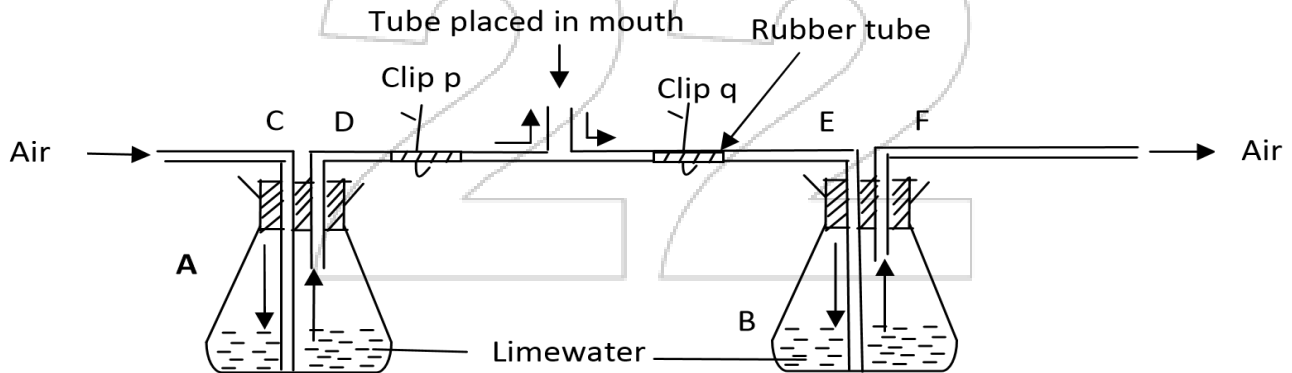
a). State the purpose of the clip **(2mrks)**

i). P

....

....

ii). Q

....

....**(2mrks)**

b). Compare the observations in flask A and B after the experiment. Give reasons for your answer.

(2mrks)

....

....

....

15. Name the form in which carbohydrates are stored in. **(2mrks)**

i). Plants tissues

....

ii). Animal tissues

....

16. Explain how water is gained from the soil by root hairs in plants. **(3mrks)**

....

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17. The diagram below shows the human ear.
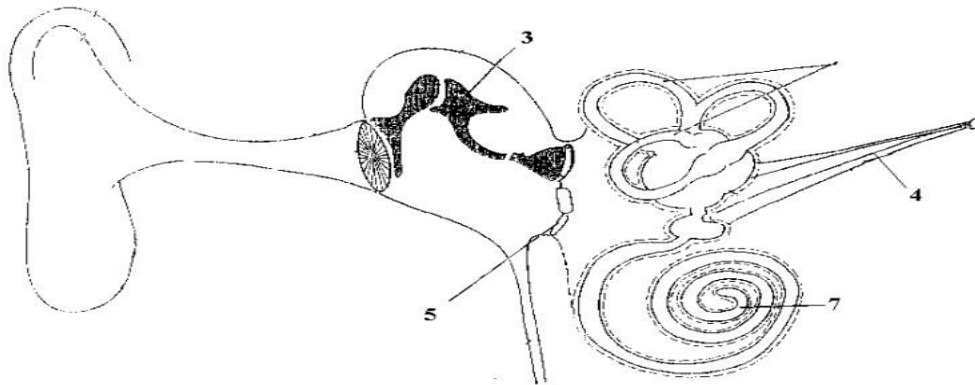
a). Name the structures labeled 3, 4 **(2mrks)**

....

....

b). State the function of the parts labeled 5 and 7. **(2mrks)**

....

....

18. Give the survival value of the following tropic responses

a). Geotropism (1mrk)

....

....

b). Haptotropism (1mrk)

....

....

c). Chemotropism (1mrk)

....

....

19. Distinguish between single and double circulatory systems. (1mrk)

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....

20. Name one disorder caused by a dominant gene. (1mrk)

....

....

21. Name the spore producing structures in pteridophytes. (1mrk)

....

....

22. a). Define transpiration. (1mrk)

....

....

b). State two environmental factors that decrease the rate of transpiration. (2mrk)

....

....

....

23. The graph below shows the relationship between environmental temperature and the body temperature in two different animals A and B.
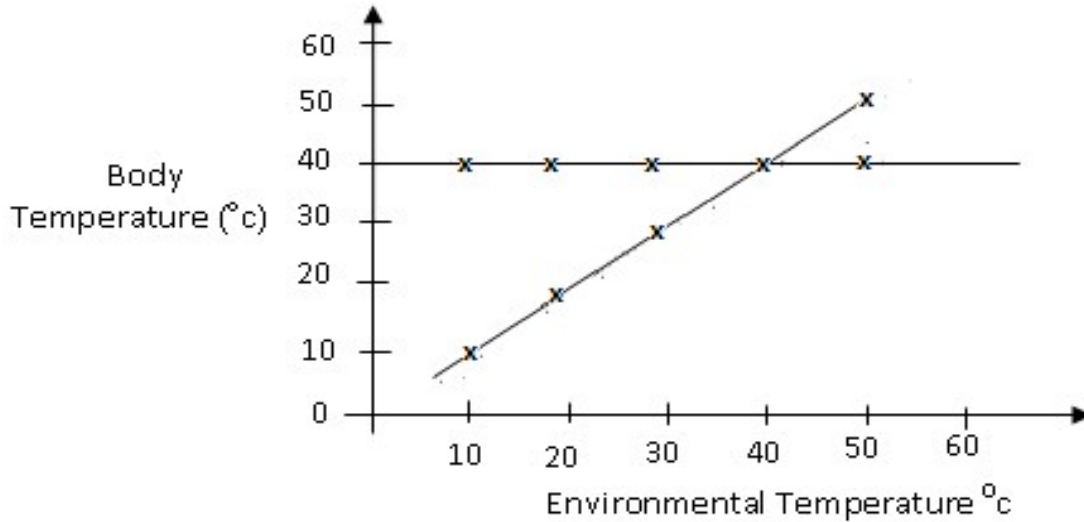
a). State the relationship between the body temperature of animal A and external environmental temperature. **(1mrk)**

....

....

....

b). Give the term used to describe;

i). Animals of type A

....**(1mrk)**

ii). Animals of type B

....**(1mrk)**

24. Nitrogen in the atmosphere cannot be directly utilized by plants. State two ways by which this Nitrogen is made available for plant use. **(2mrk)**

....

....

....

25.   The diagram below shows chemical reaction I and II which are controlled by enzyme A and
B.
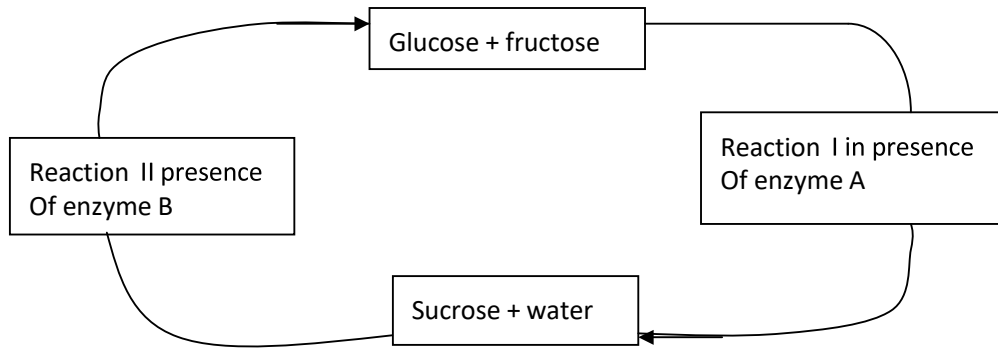
Name the reaction I and enzyme B   **(2mrks)**

Reaction

I………………………………………………………………………………...…………………

Enzyme **B**………………………………………………………………………………………….

26.   State two main functions of a microscope.   **(2mrks)**

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27.   In what form is carbon (IV) oxide transported in blood.   **(2mrks)**

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KCSE 2022 PASSWORD

SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL…………………………………… SIGN………………………………

DATE……………………………………………

231/2

BIOLOGY

PAPER 2

(Theory)

TIME: 2HOURS

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided.*
2. *Sign and write the date.*
3. *This paper consists of two sections.* ***A and B.***
4. *Answer* ***ALL*** *the questions in section A in the spaces provided.*
5. *In section* ***B***, *answer question* ***6 (compulsory)*** *and either question* ***7 or 8*** *in the spaces provided.*

FOR EXAMINERS USE ONLY:

Section	Question	Maximum score	Candidates score
A	1	9	
	2	8	
	3	7	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
TOTAL SCORE		80	

SECTION A
Answer all questions in the spaces provided

1. The diagram below shows some components of a light microscope.
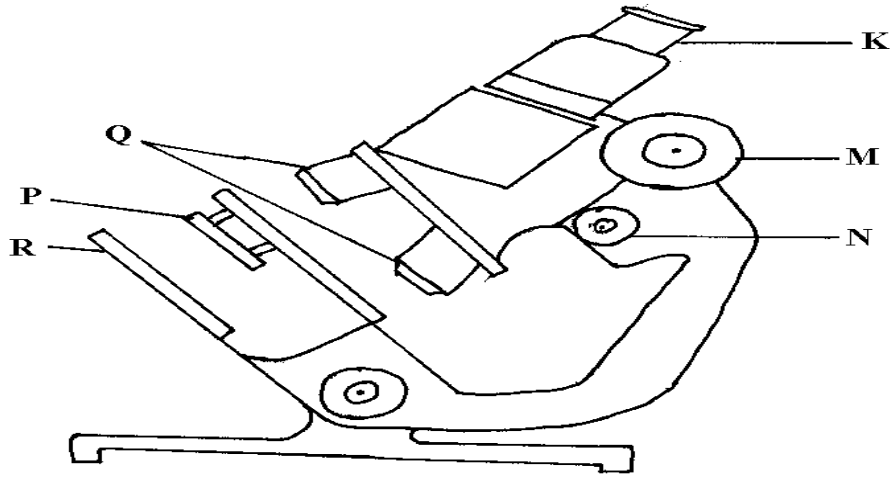
a) Name the parts labeled **(2mrks)**

K

....

M

....

b) State the functions of **(2mrks)**

P

....

Q

....

c) A student was viewing a prepared slide of a plant cell under high power microscope. The features of the cell were blurred. Which one of the labelled parts of the microscope would the student use to obtain:-

(i) a sharper outline of the features. **(1mrk)**

....

....

(ii) Give the formula used to calculate magnification in a light microscope. **(1mrk)**

....

....

d) A student was preparing a section of a plant cell to be viewed on a light microscope. Give a reason for each of the following steps:-

(i)Cutting a very thin section   **(1mrk)**

....

....

 (ii) Staining the section   **(1mrk)**

....

....

(iii) Putting the section in water   **(1mrk)**

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....

2. a) Explain what happens to excess amino acids in the liver of humans.   **(4mrks)**

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 b).i) What would happen if a person produced less anti-diuretic hormone?   **(1mrk)**

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....

 ii) What term is given to the condition described in (b) (i) above?   **(1mrk)**

....

....

 c) State *two* portions of the human nephrone found only in the cortex of the kidney.   **(2mrk)**

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3. The diagram below shows a set up that was used to demonstrate fermentation.
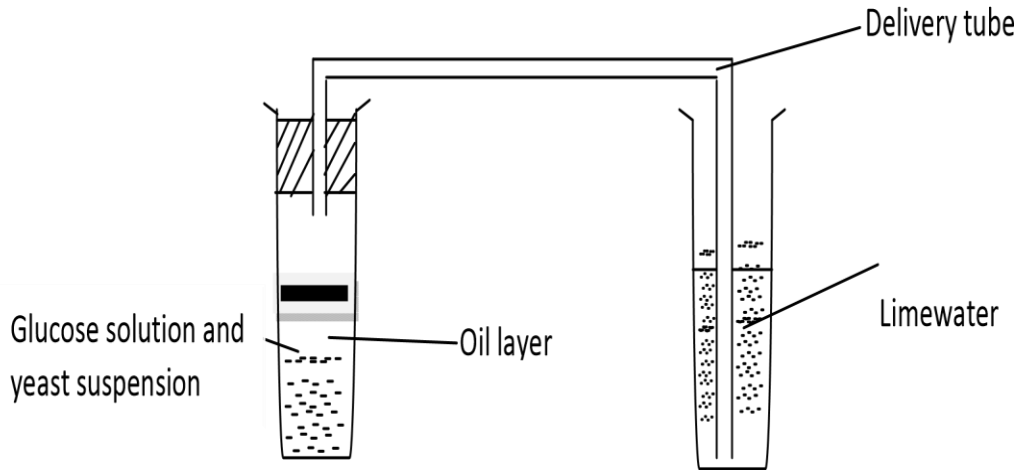
Glucose solution was boiled and oil added on top of it. The glucose solution was then allowed to cool before adding yeast suspension.

a) Why was the glucose solution boiled before adding the yeast suspension? **(1mrk)**

....

b) What was the importance of cooling the glucose solution before adding the yeast suspension?

(1mrk)

....

c) What was the use of the oil in the experiment? **(1mrk)**

....

d) Give *two* reasons why accumulation of lactic acid during vigorous exercise lead to an increase in heart beat. **(2mrks)**

....

....

e). Other than carbon (iv) oxide, *name* the other products of anaerobic respiration in plants. **(2mrks)**

....

....

4.   In an experiment, a black mouse was mated with a brown mouse; all the off-springs were black. The off-springs grew and were allowed to mate with one another. The total number   of (F2) generation off-springs was 96.

a)   Using the letter symbols capital letter B for the gene of black colour and small b for brown colour, Work out the genotype of the F1 generation.   **(3mrks)**

b)   From the information above, work out the following for the F2 generation.

   i) Genotypic ratio.   **(2mrks)**

………

………

………

ii) Phenotypic ratio.   **(1mrk)**

………

   iiii) The total number of brown mice   **(2mrks)**

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5. When a person's hand accidentally touches a hot object it is quickly withdrawn, below is the diagram showing how response occurs
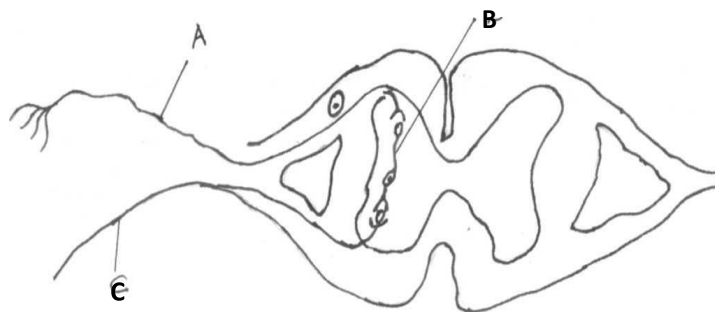
a). Describe a reflex action that will lead to the withdrawal of hand from an object.   **(7mrks)**

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b). Name the substance responsible for the transmission of an impulse across the synapse. **(1mrk)**

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SECTION B

Answer question six and any other one question from this section in the spaces provided.

6. (Compulsory)

An investigation was carried out between 1964 and 1973 to study the changes in fish population in a certain lake. Four species of fish A, B, C and D were found to live in the lake. In 1965, a factory was built near the lake and was found to discharge hot water in the lake raising the temperature from 25° c to 30° c. In 1967, sewage and industrial waste from a nearby town was diverted into the lake. In 1969, discharge of hot water, sewage and industrial waste into the lake was stopped.

The fish populations during the period of investigation are shown in the table below.

Fish population during the period of investigation

Fish species	1964	1966	1968	1970	1971	1971	1973
A	6102	223	20	106	660	4071	7512
B	208	30	11	22	63	311	405
C	36	100	0	0	0	0	0
D	4521	272	23	27	79	400	617
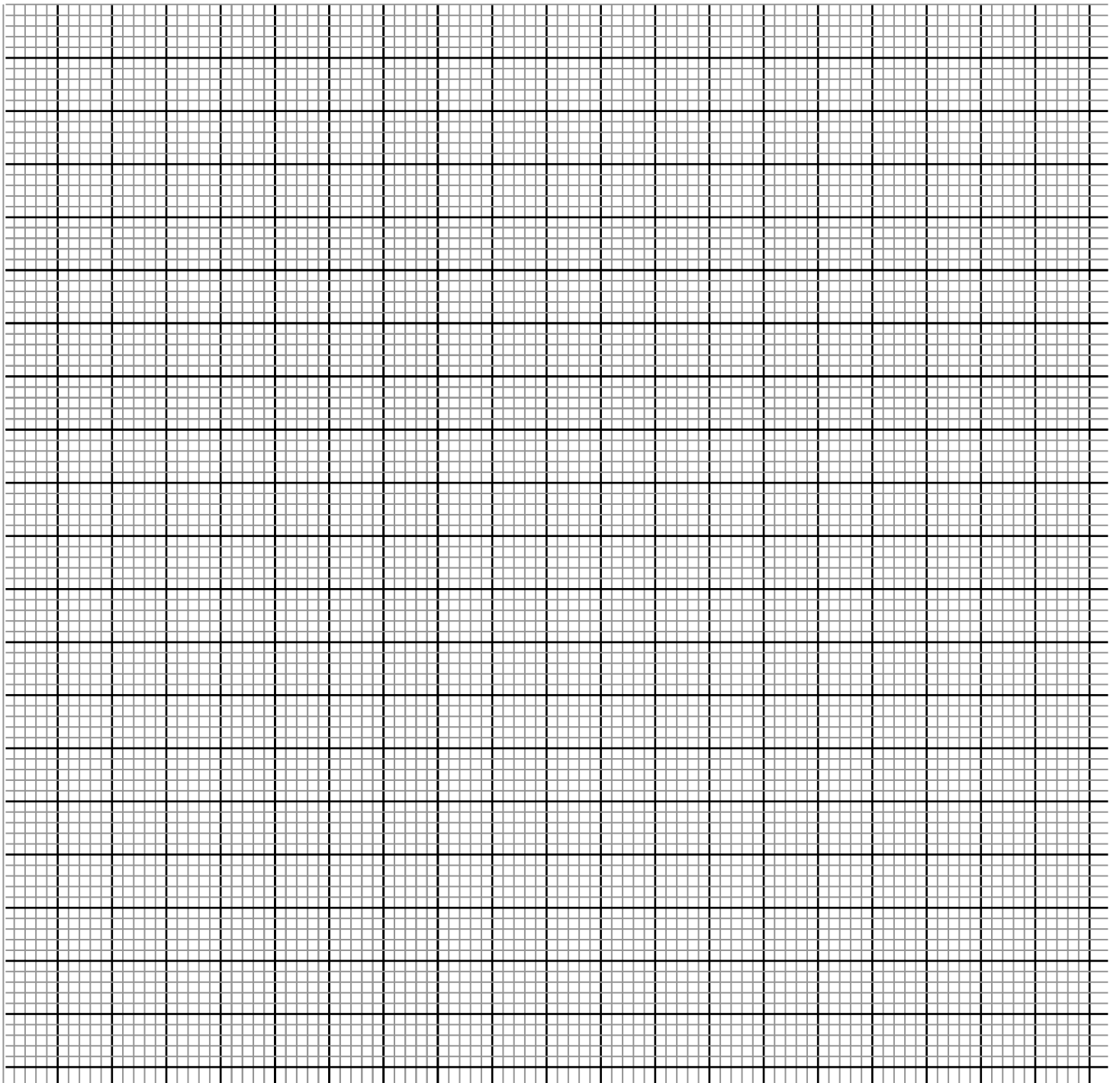
a) (i) In which year was the fish population lowest? **(1mrk)**

....

(ii)*State* the factors that might have caused the lowest fish populations during the year you have stated

in (a) (i) above. **(3mrks)**

....

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(iii) Explain how each factor you have stated in (a) (ii) above could have brought about the

changes in the fish populations.   **(11mrks)**

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 (iii) Why did fish species C remain 0 after 1969?   **(1mrk)**

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b). Other than the factors stated in (a) (i) above, state other four that may affect the population

of fish in the lake.   **(4mrks)**

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7 (a). What is meant by the term digestion?   **(2mrk)**

   b) Describe how the mammalian small intestine is adapted to its function**.**   **(18mrks)**

 8. Discuss the various evidences which show that evolution has taken place.   **(20mrks)**

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KCSE 2022 PASSWORD

SERIES 1

SCHOOL...

DATE..

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

BIOLOGY 231/3

PRACTICAL

CONFIDENTIAL

Each student will require;

Ø Scalpel
Ø Means of timing
Ø 5ml of Sodium hydrogen carbonate solution labelled H
Ø 5ml of 10% Starch solution labelled E
Ø Four labels
Ø Four clean dry test tubes.
Ø 4ml of cooking oil in a test tube
Ø One Irish potato tuber, Solanum tuberosum
Ø 10ml measuring cylinder
Ø A dropper
Ø Ruler
Ø Spatula

Each student will require access to the following;

Ø Mortar and pestle
Ø Iodine solution supplied in a dropper bottle
Ø Distilled water in a wash bottle
Ø Benedict`s solution in a dropper bottle
Ø Source of heat

The photographs should be colored

KCSE 2022 PASSWORD

SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN……………………………

DATE…………………………………………

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

231/3

BIOLOGY

PRACTICAL

PAPER 3

TIME: 1¾ HOURS

INSTRUCTIONS TO CANDIDATES

1. Answer all questions in this paper in the spaces provided after each question.

2. You are required to spend the first 15 minutes reading the whole paper carefully before commencing your work.

3. Candidates should answer the questions in correct English. Incorrect spellings of especially technical terms may be penalized.

FOR EXAMINERS USE ONLY;

QUESTION	TOTAL SCORE	CANDIDATE'S SCORE
1	15	
2	12	
3	13	
TOTAL	40	

1. You are provided with cooking oil, liquids **H** and **E** and an Irish potato.

(a) Label two test tubes **A** and **B**. Place 2cm3 of water into each test tube. Add 8 drops of the cooking oil into each test tube. To the test tube labelled **A**, add 8 drops of liquid **H**. Shake both test tubes. Allow to stand for 2 minutes.

i) Record your observations.   (2marks)

Test tube **A**

……

Test tube **B**

……

ii) Name the process that has taken place in test tube **A**.   (1mark)

……..

iii) State the significance of the process named in (a) (ii) above.   (1mark)

……..

iv) Name;

The digestive juice in humans that has the same effect on oil as liquid **L**.   (1mark)

……..

v)The region of the alimentary canal into which the juice named in (a) (iv) above is secreted(1mark)

……..

(b) Label one test tube **C**.

Place 2cm3 of liquid **E** into the test tube. Add a drop of iodine solution into the test tube.

(i) Record your observation   (1mark)

……..

(ii) Suggest the identity of **E**   (1mark)

……..

(c) Cut out a cube whose sides are about 2cm from the Irish potato provided.Crush the cube to obtain a paste. Place the paste into the test tube labelled **C** containing **E** and iodine solution from (b) above. Leave the set up for at least 30 minutes.

i) Record your observations.   (1mark)

……

……

ii) Account for the results in (c) (i) above.   (3marks)

……

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(d) (i) Cut out another cube whose sides are 1cm from the Irish potato provided. Crush the cube to obtain a paste. Use the paste to carry out food test with Benedict`s solution and record the results.

(1mark)

....

....

(ii) Account for the results in (d) (i) above.   **(2marks)**

....

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2.The diagrams below represents plants , K,L and M. study them carefully and answer the questions that follow
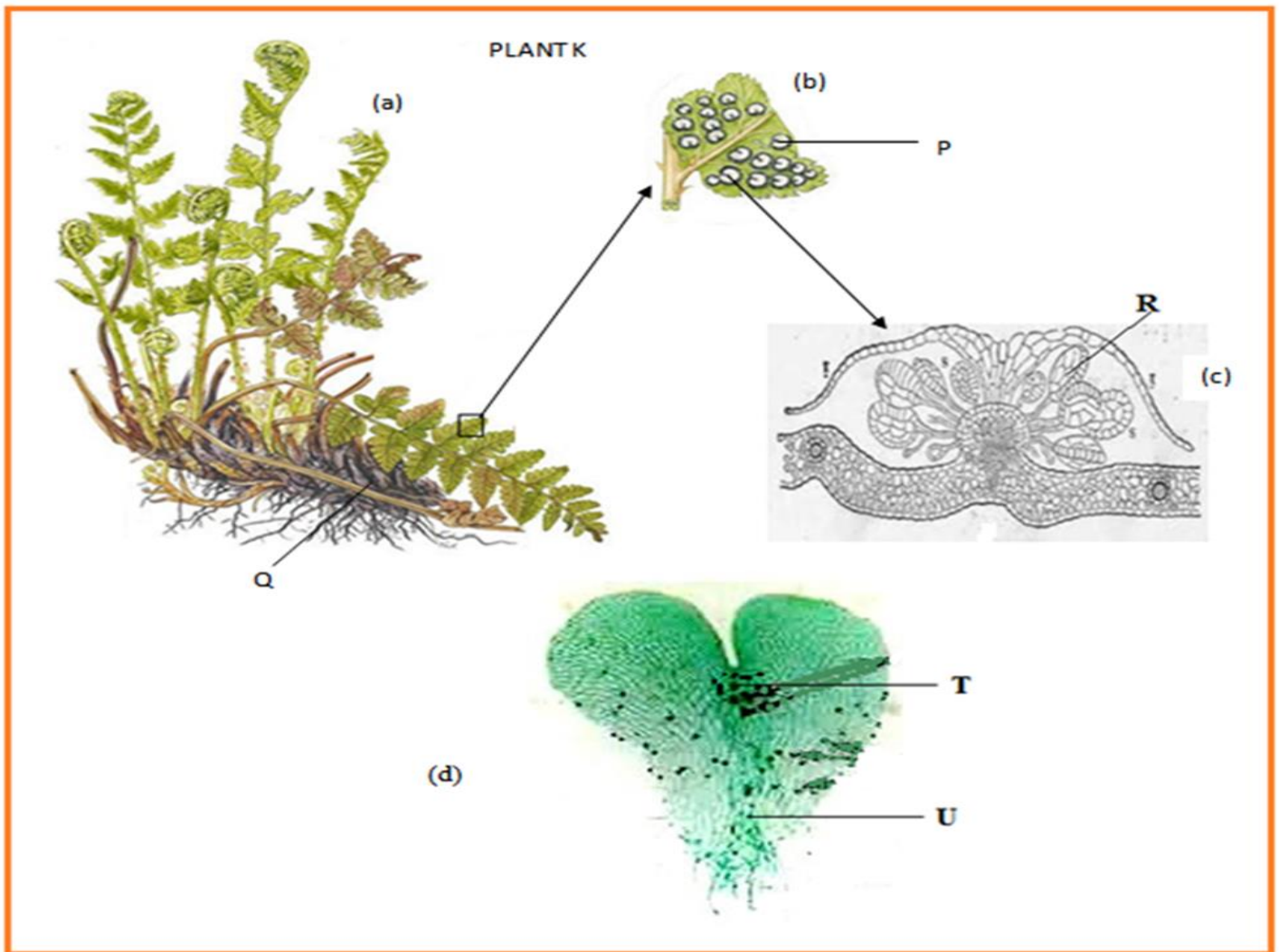
Plant M

(a)

(b)

V

W

Plant L

X

Y

Z
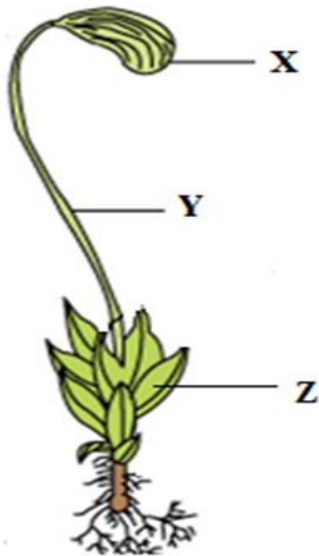
a) Giving a reason in each case, classify each plant into its division.

Plant K   **(2mks)**

Division**………………………………………………………………………………………………**

Reason.

………………………………………………………………………………………………………

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Plant L   **(2mks)**

Division...

Reason

....

....

b) Using observable features only, state the subdivision of plant M   **(2marks)**

Sub-division...

Reason

....

....

c) Identify the parts labeled **P,U,V & Y**   **(4mks)**

P

....

U

....

V

....

Y

....

d) State the functions of part T and state why (d) grows in wet areas.   **(2 marks)**

Function of T

....

....

Reason why (d) grows in wet areas

....

....

3. Below are diagrams of part of the urinary system. Examine them.
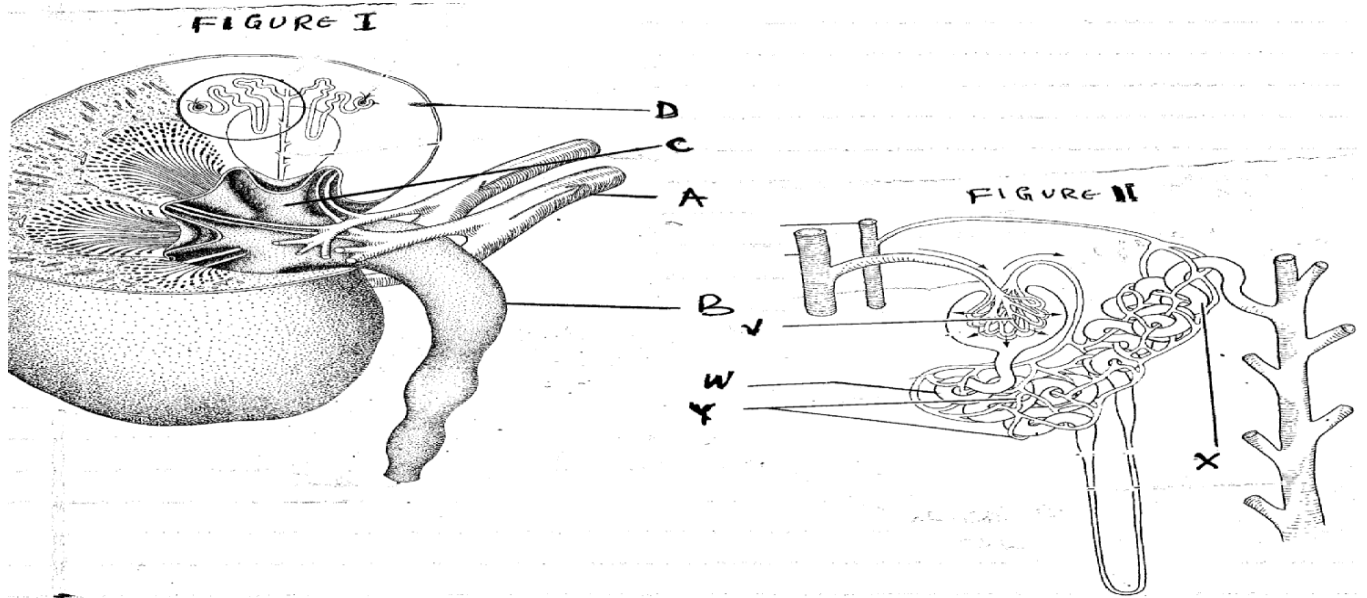
FIGURE I

FIGURE II

i)Name the parts labeled A and B in figure 1   **(2mks)**

A………………………………………………………………………..

B………………………………………………………………………..

ii)Name the parts labeled V, W, X and Y in figure 11.   **(4mks)**

V……………………………………………….

W……………………………………………….

X……………………………………………….

Y……………………………………………….

b)   State two adaptations of part labeled W to its function   **(2mks)**

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

c)In the diagram, name the part where;

i)Counter current flow occurs   **(1mks)**

ii)Reabsorption of water occurs   **(1mks)**

d)Explain what would happen to the process of urine formation in absence of anti-duiretic hormone

 (ADH)   **(3mks)**

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KCSE 2022 PASSWORD

SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN……………………………

DATE…………………………………………

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

233/1

CHEMISTRY

PAPER 1

TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

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

b) *Sign and write the date the examination is done.*

c) *Answer* **all** *the questions in the spaces provided.*

d) *Mathematical tables and* **electronic calculators** *may be used.*

e) *ALL workings* **MUST** *be clearly shown where necessary.*

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1-27	80	

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

1. During the extraction of copper from copper pyrite ($CuFeS_2$), some of the processes include.

(i) Crushing the ore.

(ii) Mixing the crushed ore with water, oil and bubbling air through it.

(iii) Roasting the ore.

a) What name is given to process (ii) and give its use. **(1 ½ mk)**

Name…………………………………………………………………………………

Use……………………………………………………………………………………

………………………………………………………………………………………

b) Write equation for roasting of the copper pyrite. **(1mk)**

………………………………………………………………………………………

………………………………………………………………………………………

c) _Give one_ use of the copper metal. **(1mk)**

………………………………………………………………………………………

2. Aluminium chloride solution changes the blue litmus paper red. Explain this observation. **(1½mks)**

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

3. The set up below was made by a form four student. At the start of the experiment, the bulb did not light.

Bulb

Dry Cl₂ (g)

2
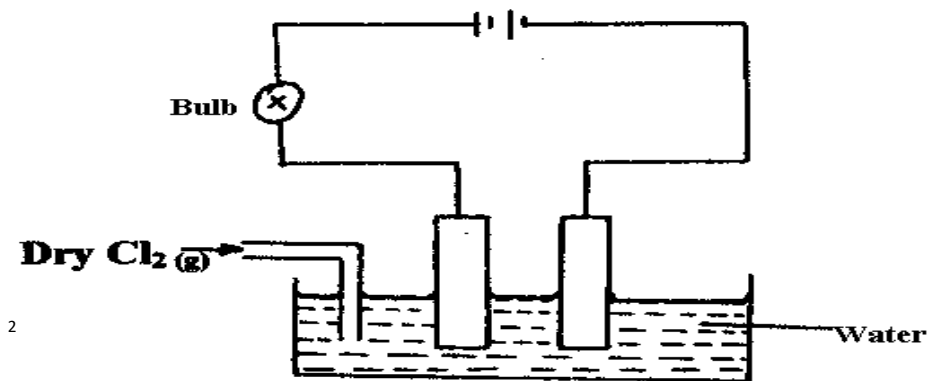
Dry Cl

Water

a) *State* and *explain* the observation made when $Cl_{2(g)}$ was bubbled in the water for about 10 minutes.

(**2mks**)

....

....

....

b)   Write the chemical equation for the reaction which took place at the cathode.   (**1mk**)

....

....

4. The flow chart below shows some properties of two allotropes of element P.
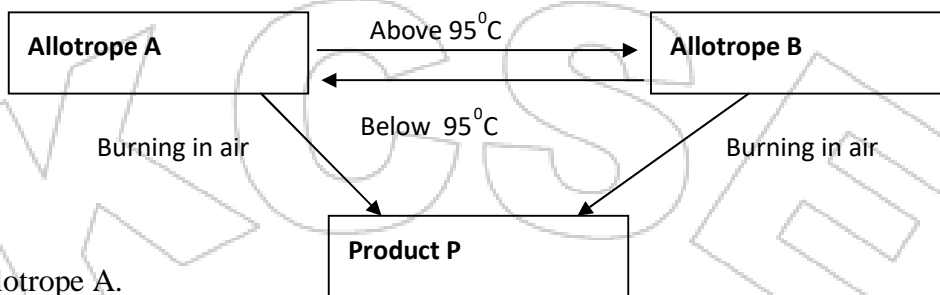
i) Name the allotrope A.   (**1mk**)

....

ii)   W rite an equation to show formation of product P.   (**1mk**)

....

iii)   What does 95^0C represent?   (**1mk**)

....

5. a) 100g of a radio isotope was reduced to 12.5g after 81days. Calculate the half-life of the radio isotope.   (**2mks**)

....

....

....

b) $_{80}^{212}x$ decays by beta emission. What is the mass number and the atomic number the element produced after the decay?   (**1mk**)

....

....

6. Boilers used for boiling hard water are normally covered with boiler scale after sometime.

a) What is the chemical name for the boiler scale? **(1mk)**

....

....

b) How is the boiler scale removed**?** **(1mk)**

....

....

c) State *any one* advantage of using hard water**.** **(1mk)**

....

....

7. a) Name the following compounds

$$O \quad /\!/$$
i) $CH_3CH_2CH_2 C\_OH$...**(1mk)**
ii) $CH_3COOCH_2CH_2CH_3$..**(1mk)**

b) Complete the following equation.

$$\begin{array}{ccc} H & & H \\ & \searrow C = C \nearrow + O & \quad \text{Cold dilute} \\ & [\ ] & \\ H \nearrow & H & \quad \xrightarrow{H^+, KMnO_4} \end{array}$$
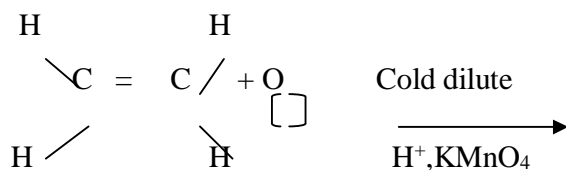
8. Two samples of a similar substance from different containers were investigated. The graph below represents the variation of temperature with time when heated.
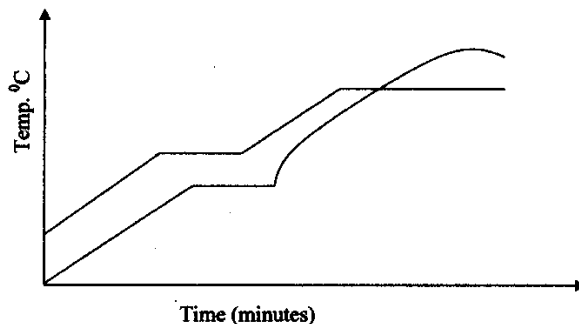
a) Explain the variation in the curves of:

Sample

I...**(1mk)**

Sample

II…………………………………………………………………………………………………… **(1mk)**

b) Common salt is sprinkled on roads during winter in temperate countries. Explain. **(1mk)**

………………………………………………………………………………………………………

………………………………………………………………………………………………………

9. a) Write an ionic equation for the reaction between copper II ions in solution and excess ammonia solution. **(1mk)**

………………………………………………………………………………………………………

………………………………………………………………………………………………………

b) Name the complex ion formed in the reaction in (a) above. **(1mk)**

………………………………………………………………………………………………………

………………………………………………………………………………………………………

10. The chart below shows the last stages in the manufacture of sulphuric acid using the contact process.

Sulphur (IV) Oxide → CHAMBER I → CHAMBER II →

R (into Chamber I)

S (into Chamber II)
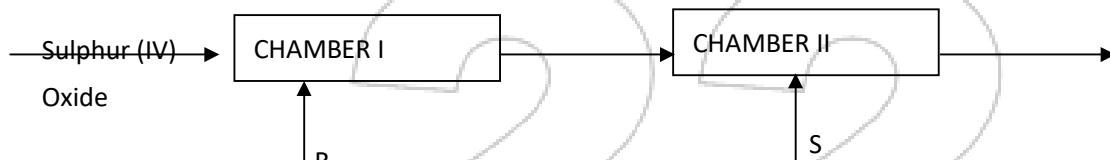
a) Identify substances R and S (2mks)

………………………………………………………………………………………………………

………………………………………………………………………………………………………

b) Write an equation for the reaction taking place in chamber II**.** **(1mk)**

………………………………………………………………………………………………………

………………………………………………………………………………………………………

11. a) State Boyle's Law. **(1mk)**

………………………………………………………………………………………………………

………………………………………………………………………………………………………

b) On the axes below sketch a graph of pressure against volume**.** **(1mk)**

Volume

5
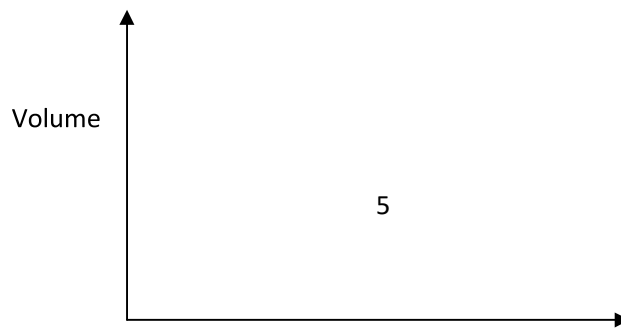
c) Explain the shape of the graph terms of kinetic theory. **(1mk)**

....

....

12. a) Aluminium is reactive metal yet most household utensils are made up using it. Explain.

(1mk)

....

....

b) It is not advisable to use wood ash to wash aluminium utensils. *Explain* **(1mk)**

....

....

c)i) Define the term **alloy** **(1mk)**

....

....

ii) Duralumin is an alloy used for making aircraft components. What is its constituent? **(1mk)**

....

....

13. The following information is for two chlorides of element A and B.

Chloride Mpt (^{0}C)	Bpt(^{0}C)	Solubility in 100g of water	Solubility in 100g of benzene
800	1140	38	0.07
23	77	0.08	Very soluble

a) Which chloride has a molecular structure? Explain. **(1mk)**

………

………

b) Which of the elements A and B could be a metal? Explain. **(1mk)**

………

………

………

c) Explain the differences in solubility of the chloride in water. **(1mk)**

………

………

14. The table below shows the P^H values of solutions J to N

Solution	J	K	L	M	N
P^H	5	13	2	10	7

b) Which solution.

i) Contains the largest concentration of hydroxide ions? **(1mk)**

………

ii) Is likely to be a solution of acetic acid? **(1mk)**

………

b) In the equation below, identify the reagent that acts as an acid in the forward reaction. Give a reason.
(2mks)

$NH4+(aq)+H2O(l) \rightleftharpoons NH3(aq)+H3O+(aq)$

……

……

……

……
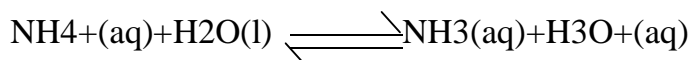
15. Hydrogen sulphide was bubbled into solutions of metallic nitrates as represented in the flow chart below.

Hydrogen sulphide
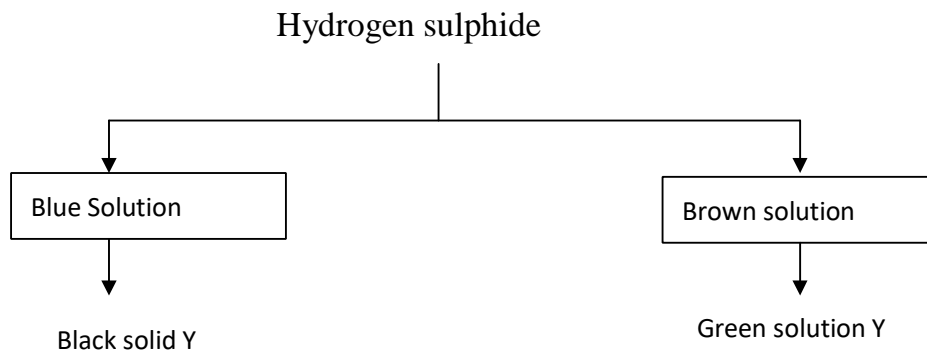
a) Identify two solutions   **(2mks)**

I. Blue solution…………………………………………………………..…………………………………

II. Green solution…………………………………………………………………………………………

16. A polymer has the following structure.

——— CH_2 ——— CH ——— CH_2 ——— CH ——— CH_2 ——— CH ———

| | | |
CN CN CN
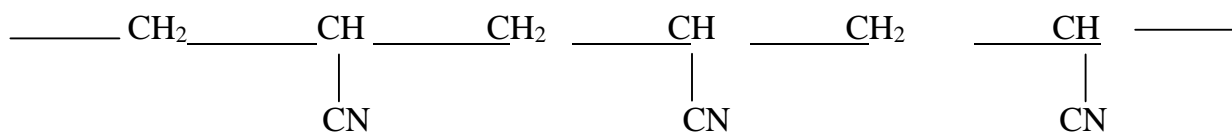
A sample of this polymer is found to have a molecular mass of 5194.*Determine* the number of monomers in the polymer (H=1.0, C=12.0,N=14.0)   **(2mks)**

……

……

……

17. Study the diagram below and answer the questions.
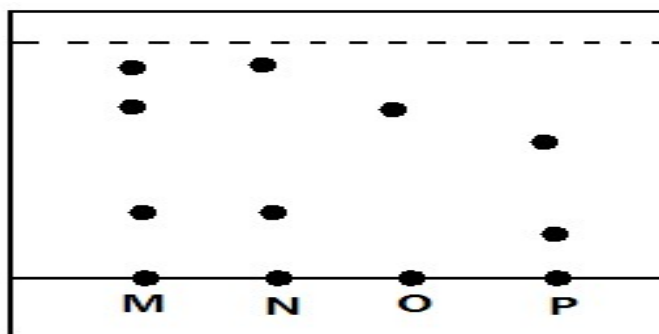
a)   On the diagram mark the base line.   **(1mk)**

b)   Name the dyes which are in M.   **(1mk)**

……

……

···

c)Which mixture of dyes has the dye with lowest solubility? Explain.   **(1mk)**

···

···

18.   The following is energy level diagram for the reaction.

$$\frac{1}{2} A_{2(g)} + \frac{1}{2} B_{2(g)} \rightarrow AB_{(g)}$$
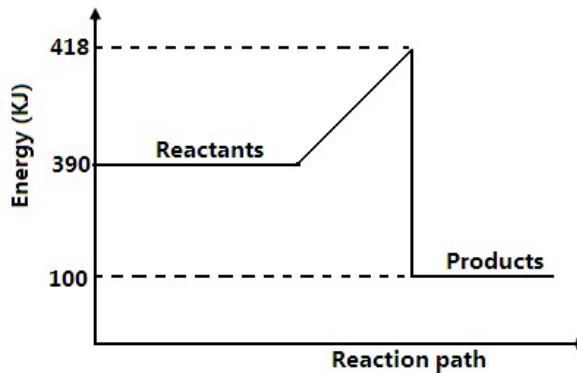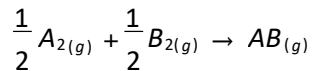
a)   Calculate the activation energy for this reaction.   **(1mk)**

···

···

···

b)   Calculate the enthalpy change (ΔH)for the reaction.   **(1mk)**

c)Use the information below to answer the questions that follow:

        Equation: Enthalpy of formation

i) $H_{2(g)} + \frac{1}{2}O_{2(g)} \rightarrow H_2O_{(l)}$ $\Delta H_1 = -286kJmol^{-1}$

ii) $C_{(s)} + O_{2(g)} \rightarrow CO_{2(g)}$ $\Delta H_2 = -394kJmol^{-1}$

iii) $2C_{(s)} + 3H_{2(g)} + \frac{1}{2}O_{2(g)} \rightarrow C_2H_2OH_{(l)}$ $\Delta H_3 = -277kJmol^{-1}$
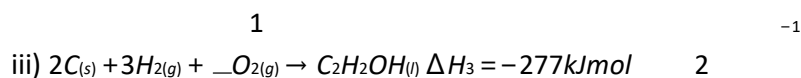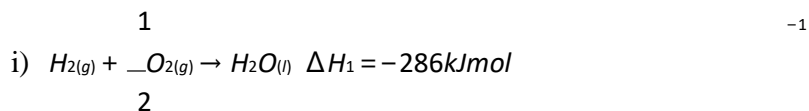
Calculate the molar enthalpy of combustion of ethanol. Given that:
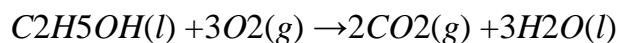
$$C_2H_5OH(l) + 3O_2(g) \rightarrow 2CO_2(g) + 3H_2O(l)$$ **(3mks)**

19.   A given element Q has atomic number of 14 and consists of isotopes as shown below.

Isotope	X	Y	Z
Isotopic mass	28	29	30
Percentage abundance	92.2	4.7	3.1

a)   Determine the relative atomic mass of Q.   **(2mks)**

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

b)   State the group and period to which Q belongs.

Group…………………………………………………………………………………(½ mk)

Period………………………………………………………………………………… (½ mk)

20.   Study the following equilibrium equation.

$$2A_2(g) + B_2(g) \rightleftharpoons 2A_2B(g) \qquad \Delta H = -197 KJmol-1$$
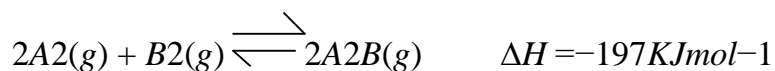
a)   Suggest two ways of increasing the yield of A_2B.   **(2mks)**

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

b) Draw the energy level diagram for the forward reaction. **(1mk)**

21. Study the diagram below and answer the questions that follow. The diagram shows the method used to separate components of mixture Q. **(1mk)**
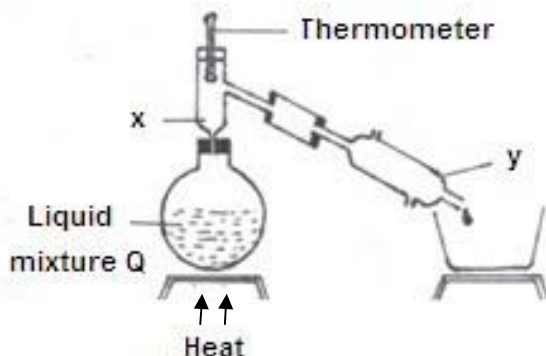
a) Name X and Y. **(1mk)**

X..

Y..

b) What is the purpose of apparatus X? **(1mk)**

....

....

c) Show the direction of flow of cold water used for cooling the vapour formed. **(½mk)**

d) What name is given to the above method of separating mixtures? **(1mk)**

....

22. The set up below was used by students to collect dry chlorine gas.
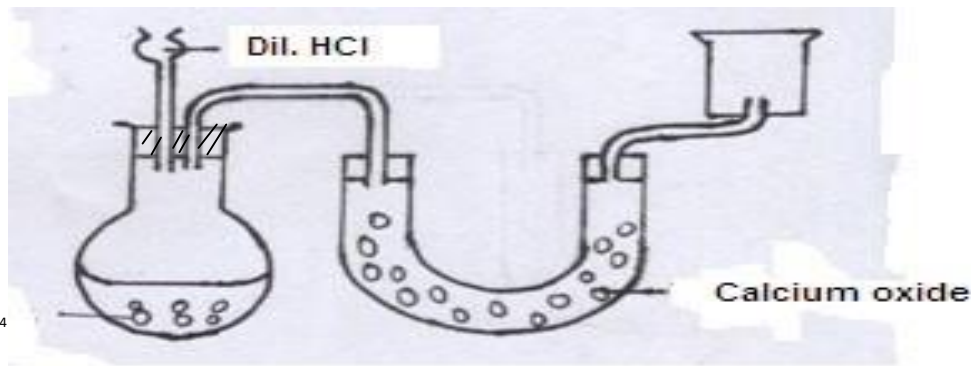
a) Identify with reasons, two faults in the set **up** **(2mks)**

....

....

....

b) Give another reagent that can be used in the place of potassium manganate. **(½ mk)**

....

....

23. The following are standard electrode potentials for the given half-cells.

$$E^{\theta} \text{ Volts}$$

$Zn_{2+(aq)} + 2e_- \rightarrow Zn_{(s)}$	$= -0.76$
$Pb_{2+(aq)} + 2e_- \rightarrow Pb_{(s)}$	$= -0.13$
$Fe^{2+} + 2e^- \rightarrow Fe_{(s)}$	$= -0.44$
$Ag^+ + e \rightarrow Ag_{(s)}$	$= + 0.80$
$Cu_{2+} + 2e \rightarrow Cu_{(s)}$	$= +0.34$

a) Which one of the above is the

   i) Strongest reducing agent? **(½ mk)**

....

ii) Strongest oxidizing agent? **(½ mk)**

....

b) What would be observed when a zinc rod is dipped into a solution containing copper II ions? Explain using E^{θ} values. **(2mks)**

....

....

....

24. State the conditions under which ammonia gives the following products when heated.

i) Nitrogen and hydrogen. **(1mk)**

....

....

ii)   Nitrogen and water.   (1mk)

....

....

iii)   Nitrogen(ii) oxide and water.   (1mk)

....

....

25.   The elements P,R,Q,S has atomic numbers 11, 14, 17 and 18 respectively

a)   Which of the elements is the most electronegative? Explain   (1mk)

....

....

b)   Which of the elements would react most vigorously with cold water?   (1mk)

....

....

26.   A student lowered burning magnesium in gas jar of sulphur (IV) oxide as shown the diagram
    below.
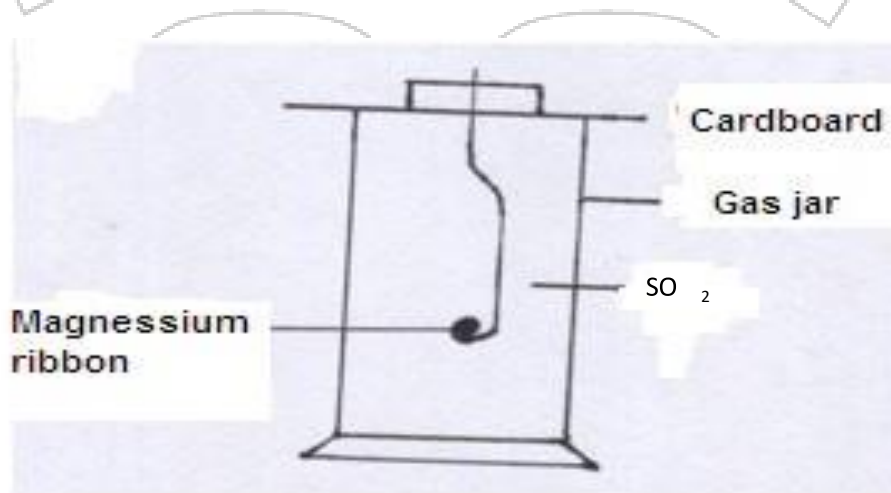
a)   Explain the observation made in the gas jar.   (1mk)

....

....

b)   Write the equation of the reaction that takes place in the gas jar.   (1mk)

....

....

KCSE 2022 PASSWORD

SERIES 1

NAME……………………………………………… INDEX NO………………………

SCHOOL………………………………………… SIGN………………………………

DATE……………………………………………

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

233/2

CHEMISTRY

PAPER 2

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

Answer all the questions in the spaces provided.
Mathematical tables and electronic calculators may be used.
All workings must be clearly shown where necessary.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAX. SCORE	CANDIDATES SCORES
1	13	
2	13	
3	12	
4	11	
5	12	
6	10	
7	09	
TOTAL	**80**	

1. A form one teacher cut small pieces of sodium and performed different experiments. In each of the experiments below, state the observations and write an equation of the reaction.

I. A piece of sodium metal is burnt in excess air.

Observation **(1mk)**

....

....

Equation **(1mk)**

....

....

II. Product in (I)above is added to water.

Observation **(1mk)**

....

....

Equation **(1mk)**

....

....

III. Heated sodium is lowered into a gas jar of chlorine.

Observation **(1mk)**

....

....

Equation **(1mk)**

....

....

IV. A small piece of sodium is put in cold water in a beaker and resulting solution is tested with litmus paper.

Observation **(1mk)**

....

....

Equation **(1mk)**

....

....

b) Define the term ionization energy. **(1mk)**

....

....

c) Study the following ionization energy values and answer the questions that follow.

Ionization	Ionization Energy(kj/mole
$Na\ (g) \rightarrow Na+(g) +e$	500
$Na+(g \rightarrow Na\ 2+(g) +e$	4600
$Na\ 2+(g) \rightarrow Na\ 3+(g) +e$	6900
$Mg\ (g) \rightarrow Mg+(g) +e$	740
$Mg+(g) \rightarrow Mg2+(g) +e$	4500
$Mg2+(g) \rightarrow Mg3+(g) +e$	7700
$Mg3+(g) \rightarrow Mg4+(g) +e$	10500

i) What do the values of energies of ionization suggest about the

 I. First electron removed from a sodium atom. **(1 ½ mk)**

....

....

....

II. First two electrons removed from a magnesium atom. **(1½mk)**

....

....

....

ii) Calculate the energy change in the process $Mg_{(g)} \rightarrow Mg_{(g)}^{3+} + 3e$ **(1mk)**

....

....

....

2. a) Study the information in the table below and answer the questions that follow.

Number of Carbon atoms per molecule	Relative molecular mass of hydrocarbon
2	28
3	42
4	56

i) Write the general formula of the Hydrocarbons in the table. **(1mk)**

………………………………………………………………………………………………

ii) Predict the relative mass of the Hydrocarbon with 5 carbon atoms. **(1mk)**

………………………………………………………………………………………………

iii) Determine the molecular formula of the Hydrocarbon in (ii) above and draw the structural formula.

Molecular formula **(1mk)**

………………………………………………………………………………………………

Structural formula **(1mk)**

………………………………………………………………………………………………

2 (b) The scheme below shows some reactions starting with Propanol. Study it and answer the questions that follow.
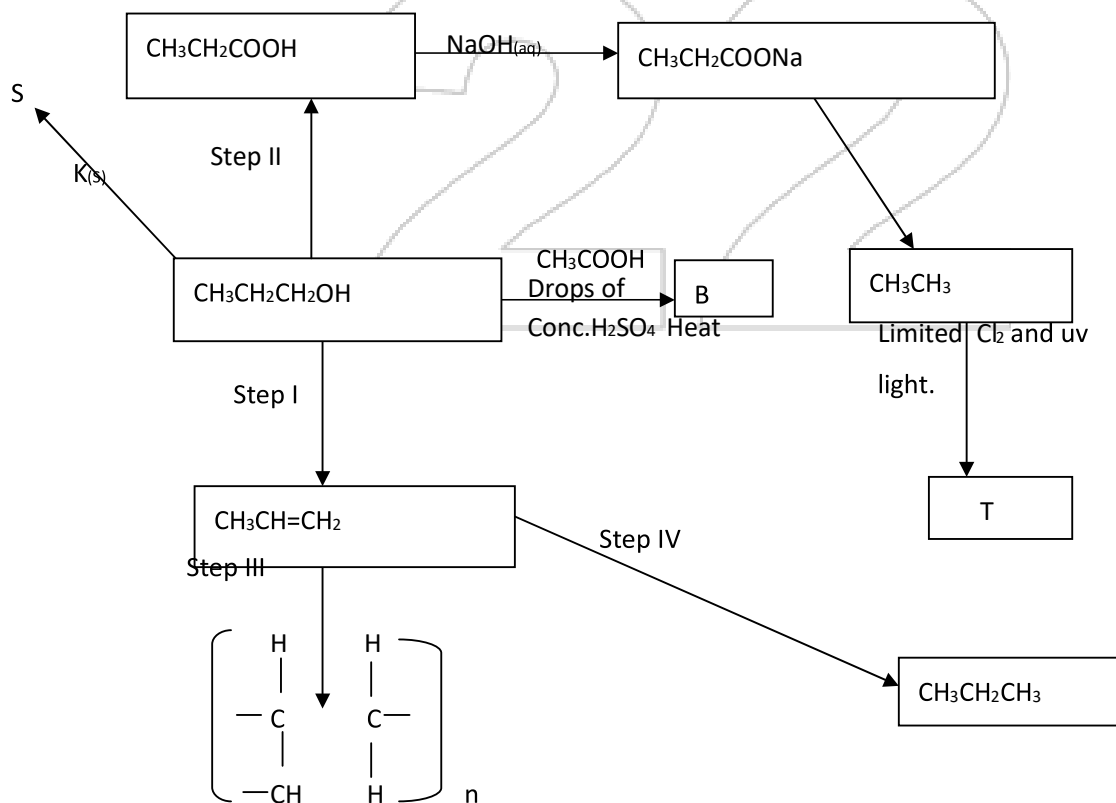
i) Write down the formula of compounds S and T.

S_____(1m k)

T_____(1m k)

ii)   Draw the structural formula of compound **B.**   **(2mks)**

iii)   Name the type of reaction, reagent and conditions in the reactions in step I and step IV.

Step	Type of reaction	Reagent	Condition
I			
IV			

(3mks)

iv)   *Name two* chemical tests that can be used to differentiate propanol from propanoic acid.

Propanol	**Propanoic acid**
i)	
ii)	

3. Study the scheme below and answer the questions that follow.
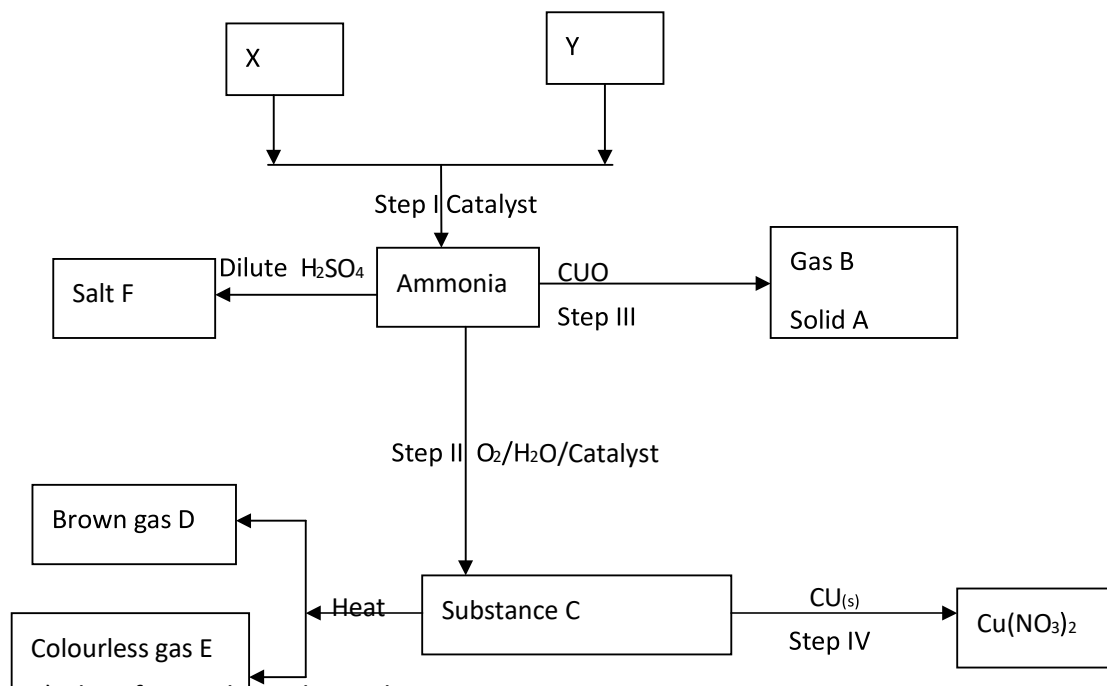
a) Identify X and Y and give their sources.

X_____ **(1mk)**

Source_____

Y_____ **(1mk)**

Source_____

b) Identify the catalyst used in step I   **(1mk)**

…………………………………………………………………………………………

c) Name the substances   **(2mks)**

A_____

B_____

C_____

D_____

d) Write chemical equations that shows

   i) The formation of substance C   **(2mks)**

………………………………………………………………………………………………

………………………………………………………………………………………………

ii) The reaction between substance C and copper metal.   **(2mks)**

………………………………………………………………………………………………

………………………………………………………………………………………………

e) Describe a chemical

 test for gas E.   **(1mk)**

………………………………………………………………………………………………

………………………………………………………………………………………………

 f) i) *State one* economic use of substance F.   **(1mk)**

………………………………………………………………………………………………

………………………………………………………………………………………………

   ii) *Name* the optimum conditions for the production of ammonia gas.   **(1mk)**

………………………………………………………………………………………………

………………………………………………………………………………………………

4. a) In a class experiment 5.0g of ethanol CH_3CH_2OH, were completely burnt and all the heat evolved was used to heat 500cm³ of water from 20⁰c to 80⁰c. Given that the specific heat capacity of water =4.2kj/kg/k, density of water =1cm⁻³, c=12, O=16.0 and H=1.0

i) Write a balanced equation to show the reaction that takes place when ethanol burns.   **(1mk)**

……

……

ii) Calculate the heat energy.

I. absorbed by the water.   **(1mk)**

……

……

II.   Given out when one mole of ethanol was burned completely.   **(2mks)**

……

……

……

……

b) Use the information in the energy cycle diagram below to answer the questions   that follow.
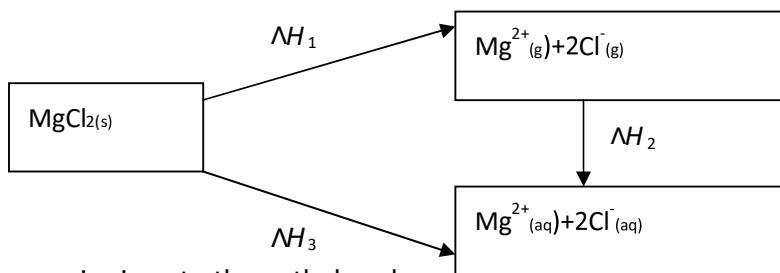
i) What name is given to the enthalpy change

I. ΔH_2

_____ **(1mk)**

II. ΔH_3 _____

(1mk)

ii) Given the ΔH_1 =2489kj and ΔH_2 =-2659kj, *calculate* the value of ΔH_3 .   **(2mks)**

……

……

c) Using the information and answer in b (ii) above draw the energy level diagram for dissolving magnesium chloride.

5. The diagram below shows some reactions starting with Lead(II) nitrate solid. Study it and answer the questions that follow.

```
┌────────────────────────┐   Step 5          ┌──────────────────────────┐
│  Lead (II) nitrate (aq) │ ─────────────────▶│   Lead (II) Carbonate    │
└────────────────────────┘                    └──────────────────────────┘
       ▲              Reagent K
       │  Step 4 water
┌────────────────────────┐
│  Lead (II) nitrate(s)   │
└────────────────────────┘
       │  Step I
       ▼
┌────────────────────────────┐              ┌──────────────────────────┐
│ Nitrogen (IV) oxide+ gas Q  │              │      Dry H₂ gas           │
└────────────────────────────┘              └──────────────────────────┘
       │  Step 2
       ▼  water
┌────────────────────────┐    ┌──────────────────┐    ┌──────────────┐
│   Acidic product S&R    │    │  Lead (II) oxide  │    │   Products    │
└────────────────────────┘    └──────────────────┘    └──────────────┘
       │                                      Heat
       ▼                          Step 3   Hot  Conc.
┌────────────────────────┐                 Sodium
│        Gas Q            │                 hydroxide
└────────────────────────┘              ┌──────────────┐
                                        │  Colourless   │
                                        │  solution     │
                                        └──────────────┘
```

__   (**1mk**)

I_____
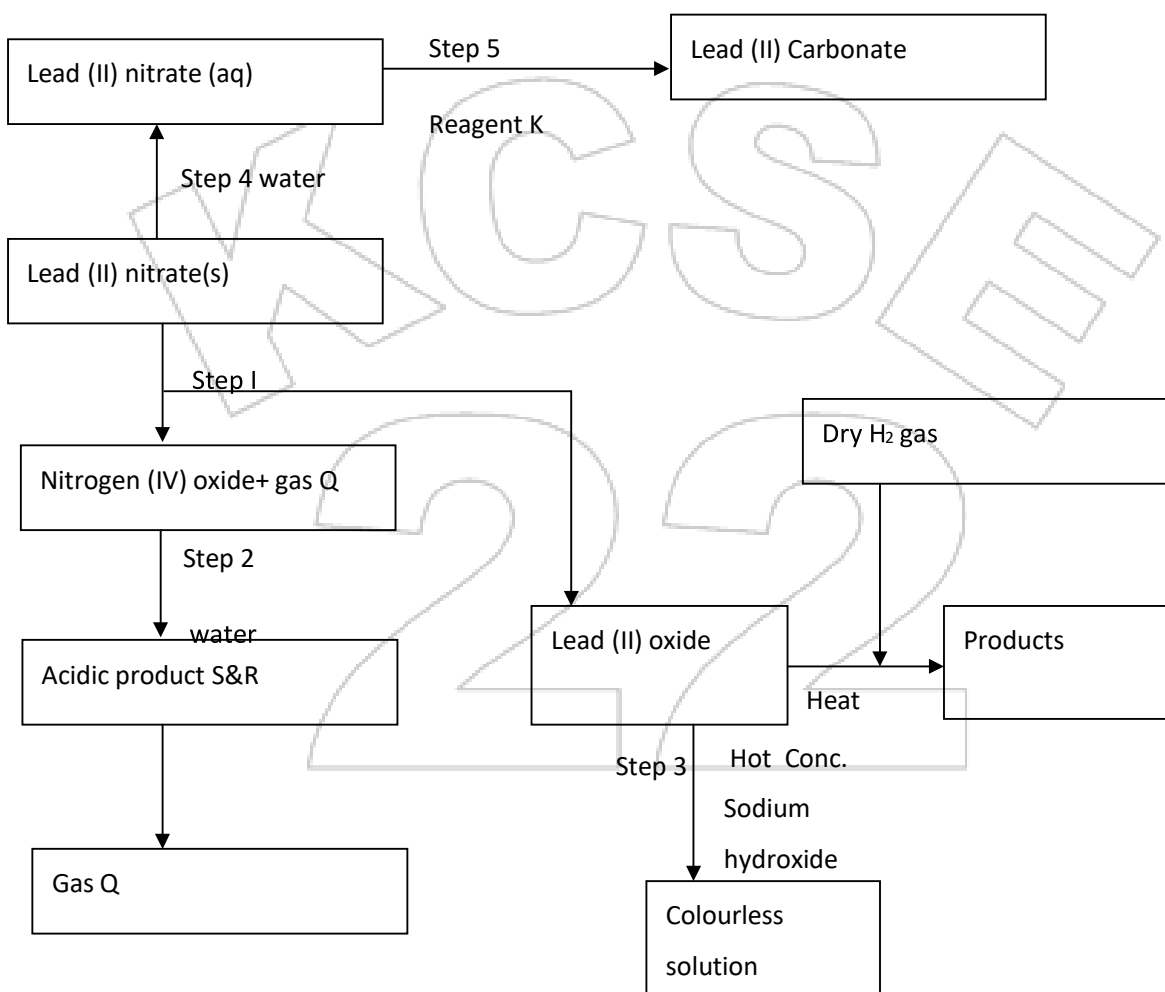
a) i) State the conditions necessary in **step 1**

………

………

………

ii) Identify

I. Reagent K. **(1mk)**

....

II.   Gas

Q...**(1mk)**

III.   Acidic products S and R. **(2mks)**

....

....

iii) Write

I. The formula of the complex ion formed in step 3. **(1mk)**

....

II.   The equation for the reaction in step 5. **(1mk)**

....

b)   i) The reaction between lead (II) nitrate and concentrated sulphuric acid starts but stops
immediately. Explain with the help of an equation. **(2mks)**

....

....

....

ii) Name one reagent that can be reacted with concentrated sulphuric acid to produce
nitric (v) acid. **(1mk)**

....

c) Write the formula of the ion formed in each of the reactions described below.

i) Excess ammonia is added to solution containing copper (II) ions**. (1mk)**

....

....

ii)   Excess sodium hydroxide solution is added to a solution containing aluminium ions. **(1mk)**

....

....

6. The diagram below is the down cell for the extraction of sodium metal. Use it to answer the questions that follow.

Sodium Chloride+Solid V
Chlorine gas
Molten sodium
Steel gauze cylinder
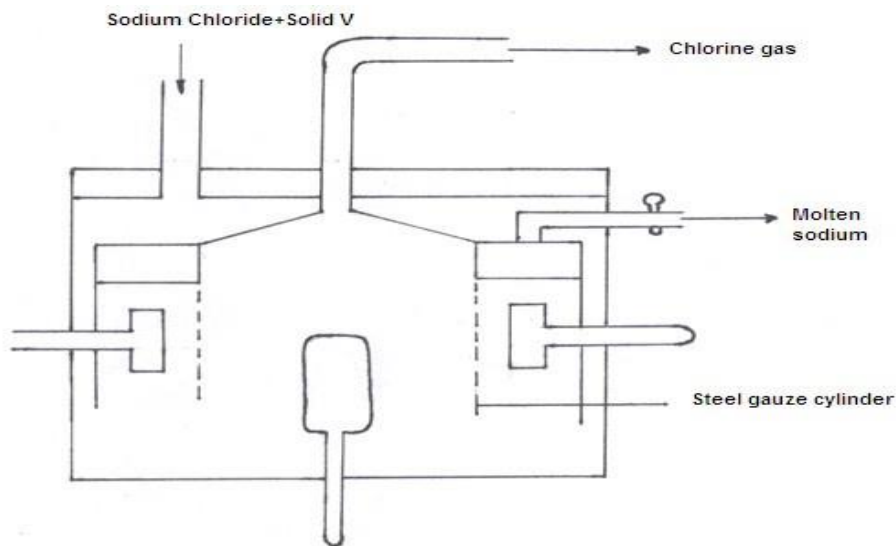
a) In which state is sodium chloride and how is it maintained in the state. **(2mks)**

……

……

…………………………………………………………………………………………

b) Name solid V and state its use.

Name_____ **(½ mk)**

Use_____ **(½ mk)**

c) Give a reason why the anode is made of graphite and not steel. **(1mk)**

……

……

d) Write equations for reactions that take place at

Anode_____ **(½ mk)**

Cathode_____ **(½ mk)**

e) State the main impurity in the sodium collected and state how it is removed. **(1mk)**

……

g) State *any two* uses of sodium metal. **(2mks)**

……

……

7. a) The set up below represents the arrangement used to prepare substance S by passing a stream of dry hydrogen chloride gas over heated iron wool.

Conc.H_2SO_4

Iron wool

X

Substance S

Heat

Conc.H_2SO_4

NaCl
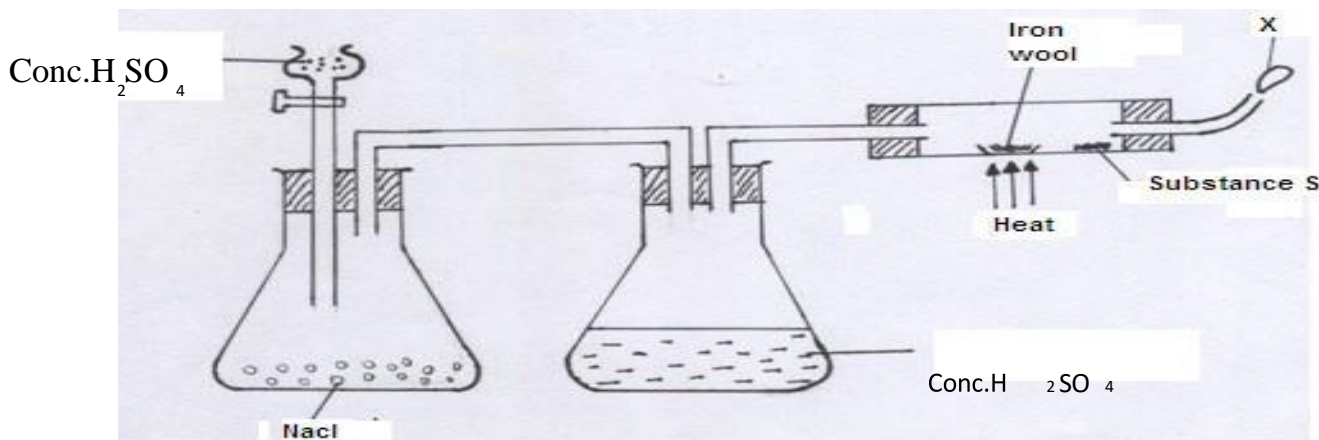
i) Correct the mistake in the set up above   **(1mk)**

ii)   Give the chemical equations for the reaction.

I. that involves formation of substance

S_____ **(1mk)**

II.   at point

X_____ **(1mk)**

iii) What precautions would you take when carrying out this experiment. Give reasons   precaution

I_____½ **mk)**

Reason_____ (½ **mk)**

    Precaution 2_____(½ **mk)**

   Reason_____ (½ **mk)**

b) 300cm³ of hydrogen chloride gas were passed over 7.0g of heated iron wool until there was no further change. The reaction vessel then was allowed to cool to room temperature.

i) Determine the mass of iron that remained at the end of the experiment.(Molar gas volume at r.t.p=24000cm³, Fe=56)   **(2mks)**

....

....

....

ii) Determine the volume of 2M sulphuric acid that would be required to react with excess iron that remained in the above experiment, b(i) above.   **(2mks)**

....

....

....

KCSE 2022 PASSWORD

SERIES 1

233/3

CHEMISTRY

PAPER 3
(CONFIDENTIAL)

Requirements for candidates

In addition to the apparatus and fittings found in a Chemistry laboratory, each candidate will require the following.

a) *Exactly 4.5g of solid N*
b) *About 100cm^3 of solution P*
c) *One burette 0 – 50ml*
d) *One pipette 25ml*
e) *Two conical flasks 250ml*
f) *Thermometer*
g) *100ml measuring cylinder*
h) *About 1g of solid M*
i) *About 1g of solid Q*
j) *Phenolphthalein indicator*
k) *Universal indicator solution*
l) *PH Chart (1-14 range)*
m) *About 500ml of distilled water in a wash bottle*
n) *5 dry test tubes*
o) *1 Boiling tube*
p) *Clean Metallic spatula*
q) *Blue and red litmus papers*
r) *About 0.5g sodium hydrogen carbonate solid*

Each candidate should have access to:
1. *Source of heat*
2. *2M sodium hydroxide supplied with a dropper*
3. *2M ammonium hydroxide supplied with a dropper*
4. *2M HCl acid supplied with a dropper*
5. *Lead (II) nitrate supplied with a dropper*
6. *Acidified potassium manganate (VII) supplied with a dropper*
7. *0.5M Barium chloride supplied with a dropper*

NOTES
1. Solid N is 4.5g of oxalic acid weighed accurately and stoppered.
2. Solid M is Ammonium aluminium sulphate
3. Solid Q is Oxalic acid.
4. Solution P is 0.4M NaOH.

KCSE 2022 PASSWORD

SERIES 1

NAME…………………………………………….   INDEX NO………………………

SCHOOL………………………………………….   SIGN…………………………….

DATE………………………………………………

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

233/3

CHEMISTRY

Paper 3

PRACTICAL

Time: 2 ¼ Hours

INSTRUCTIONS TO CANDIDATES.

- *Answer **all** the questions in the spaces provided*
- *You are **not** allowed to start working with the apparatus for the first 15 minutes of the 2 ¼ hours allowed in this paper. This is to enable you read the question paper and make sure you have all the chemicals and apparatus you may need.*
- *Mathematical tables and Electronic calculators may be used.*
- *All working **must** be clearly shown where necessary.*

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidates Score
1	20	
2	12	
3	8	
Total	40	

QUESTIONS

1. You are provided with:

✓ 4.5g of dibasic acid (**H₂X. 2H₂O**), **Solid N**

✓ 0.4M sodium hydroxide, **Solution P**

You are required to:

a) You are required to determine the solubility of Solid N in water at different temperatures.

b) Determine RAM of dibasic N in H₂X.2H₂O.

PROCEDURE I

Retain the contents of the boiling tube for use in procedure (II)

(d) Complete table I by calculating the solubility of solid **N** at different temperatures.

NOTE:

You may hasten cooling for the first two temperatures readings by pouring cold water from the tap
on the sides of the boiling tube.

a) **TABLE I**   **(6marks)**

Volume of water added (cm³)	4	6	8	10
Crystallization temperature, (°C)				
Solubility of solid C in g/l00g water				

(b) Plots graph of solubility of solid N against crystallizing temperature   **(3marks)**
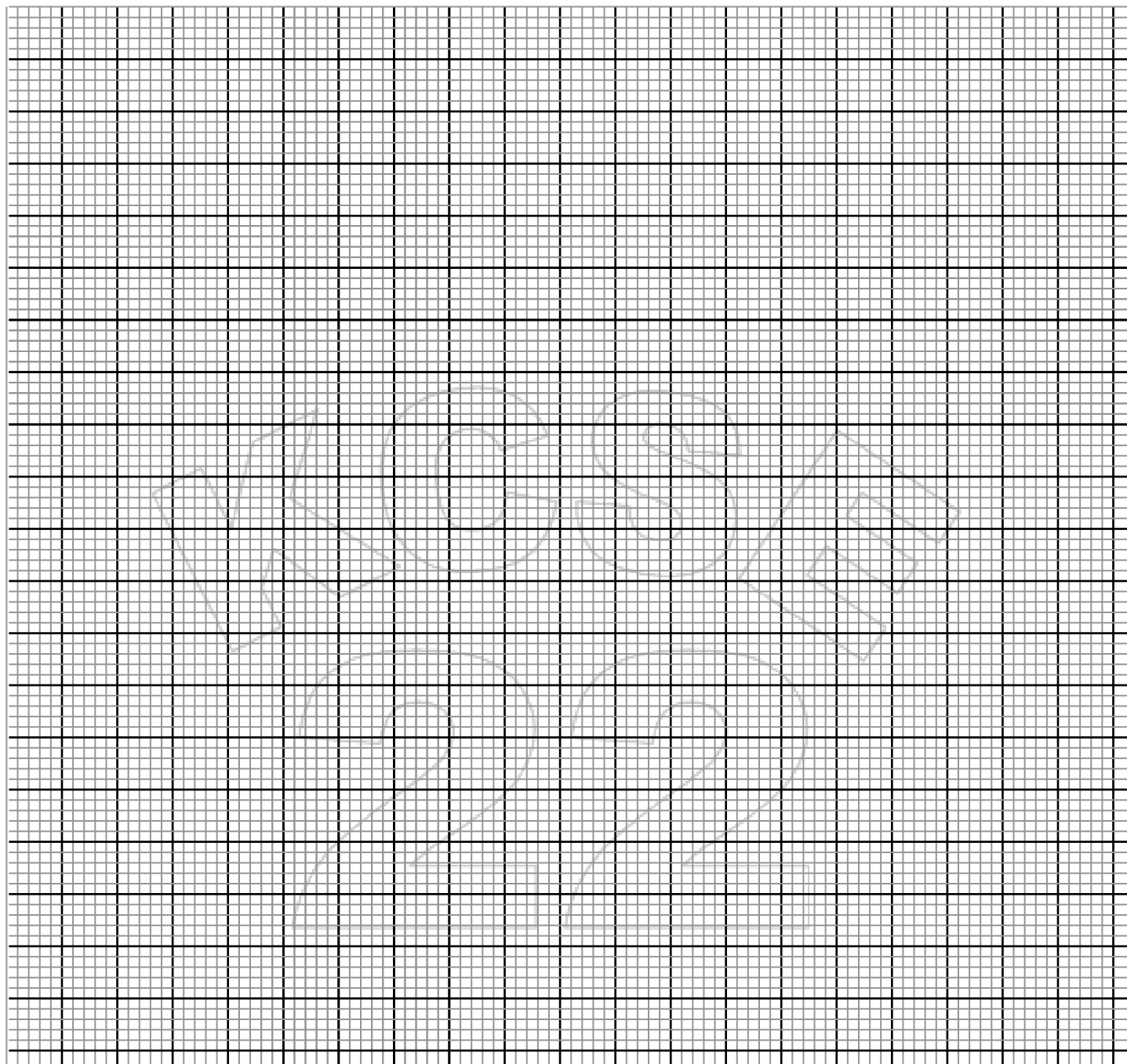
(c) Use your graph to determine

i. the solubility of solid N in water at 55°C.   **(1 mark)**

ii. determine the temperature at which 100g of solid N would dissolve in 100 cm^3 of water.   **(1 mark)**

Procedure II

Transfer the content of the boiling tube into 100ml Measuring cylinder. Rinse both the boiling tube and thermometer with distilled water and add to the measuring cylinder and shake thoroughly. Add more water **carefully** to make up to 100 ml mark. Label this solution **N**. Fill the burette with solution **N** ($H_2X. 2H_2O$). Pipette 25cm³ of solution **P** into a conical flask. Add 2-3 of Phenolphthalein indicator and titrate with solution **N**. Record your readings in table **II** below. Repeat the procedure and complete table **II**.

Table II   **(4marks)**

	I	II	III
Final burette reading (cm³)			
Initial burette reading (cm³)			
Volume of solution A used (cm³)			

i)Calculate the average volume of solution N used.   **(1 mark)**

ii)   Calculate the ;

I. Number of moles of sodium hydroxide in 25 cm³ solution P.   **(1mark)**

II. number of moles dibasic acid solution N used, given the equation for the reaction as;

   $2NaOH + H_2X \longrightarrow Na_2X + 2H_2O$ **(1mark)**
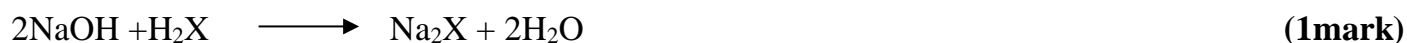
III. number of moles of dibasic acid in 100cm³ of solution N   **(1mark)**

iii)   Determine the ;

I. Relative formula mass of dibasic acid, $H_2X.2H_2O$.   **(1mark)**

II. RAM of X in dibasic acid, $H_2X.2H_2O$.   (H=1,O=16)   **(1mark)**

2. You are provided with **solid M** containing two cations and one anion. Carry out the tests given and record your observations and deductions in the space provided.

(a) Place half of solid **M** in a clean dry test-tube and heat gently then strongly. Test any gases produced with both blue and red litmus papers.

Observation	Inference
(2 marks)	(1mark)

(b) Place the remaining solid M into a boiling tube. Add about10cm^3 of distilled water and shake thoroughly. Divide the resultant mixture into 4 portions.

(i) To the first portion add a few drops of sodium hydroxide solution till in excess.

Observation	Inference
(1 mark)	(1 mark)

(ii) To the second portion, add a few drops of ammonium hydroxide solution till in excess.

Observation	Inference
(1 mark)	(1 mark)

(iii) To the third portion, add 2-3 drops of dilute hydrochloric acid.

Observation	Inference

(1mark)	(1mark)

(iv) To the third portion, add 2-3 drops of Lead (II) nitrate solution.

Observation	Inference
(1mark)	(1mark)

(v) To the third portion, add a few drops of Barium chloride solution.

Observation	Inference
(½ mark)	(½ mark)

3) You are provided with solid **Q**. Carry out the tests below. Record your observations and inferences in the spaces provided.

i). Place about half of solid **Q** on a metallic spatula and burnt it using a non-luminous flame

Observations	Inferences
(1mark)	(1mark)

ii) Place the remaining solid **Q** in a clean boiling tube and add about $5cm^3$ of water and shake thoroughly.

I) To about $2cm^3$ of the solution **Q**, put the universal indicator paper provided to determine its P^H.

Observations	Inferences

(1mark)	(1mark)

II) To about 2cm^3 of solution **Q**, add three drops of acidified potassium manganate (VII) solution and warm.

Observations	Inferences
(1mark)	(1mark)

III) To about 2cm^3 of solution **Q**, add solid sodium hydrogen carbonate.

Observations	Inferences
(1mark)	(1mark)

KCSE 2022 PASSWORD

SERIES 1

NAME…………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN………………………………

DATE……………………………………………

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

232/1

PHYSICS

PAPER 1

TIME: 2 HOURS

INSTRUCTIONS:

Write your name and index number in the space provided above Sign and write the date of examination in the spaces provided above.

*This paper consist of **TWO** section **A** and **B***

*Answer **ALL** questions in section **A** and **B** in the spaces provided.*

***ALL** working must be clearly shown.*

*Mathematical tables and electronic calculators may be used. **Take g =10m/s²***

FOR EXAMINERS USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1-14	25	
B	15	9	
	16	13	
	17	9	
	18	10	
	19	14	
	TOTAL SCORE	80	

SECTION A (25MARKS)

1.   An air bubble expands as it rises to the surface of water in a deep pond. State the cause of this given that the temperature remains constant.   **(1mrk)**

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2.   The simple pulley in figure 1 is used to lift a 3kg mass.
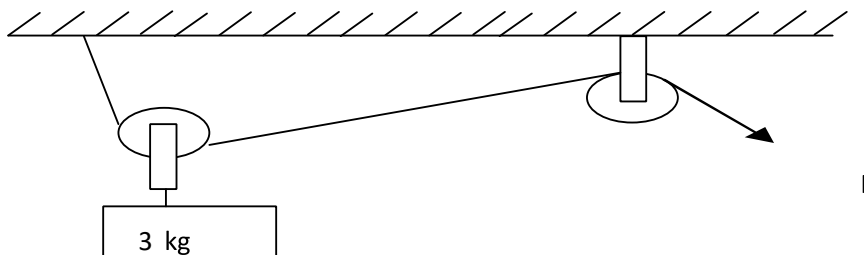
Through what distance must the string at F be pulled to lift the mass 0.2m high.   **(2mrks)**

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3.   The thermal conductivity of a metal increases with the increase cross-sectional area of the metal. Explain how the cross-section affects conductivity using the electron movement.   **(1mrk)**

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4.   The set up figure 2 is used to investigate the effect of pressure on melting point. It is observed that the thin wire cuts through the ice block but it remains one piece.
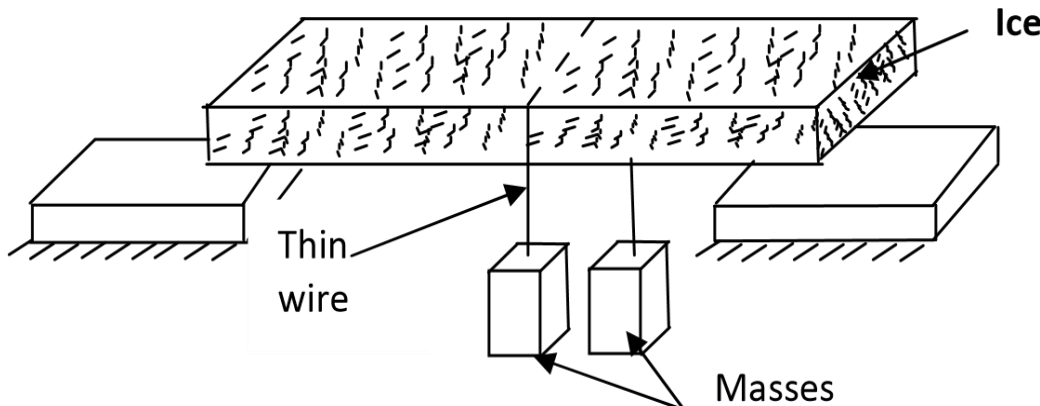
Explain the observation above. **(2mrks)**

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5. (i). Explain why a liquid and not a gas is used as a hydraulic machine fluid. **(1mrk)**

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ii). State the other important property of a liquid that hydraulic machines depend on. **(1mrk)**

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6. Figure 3 shows a marble placed on an inverted bowl.
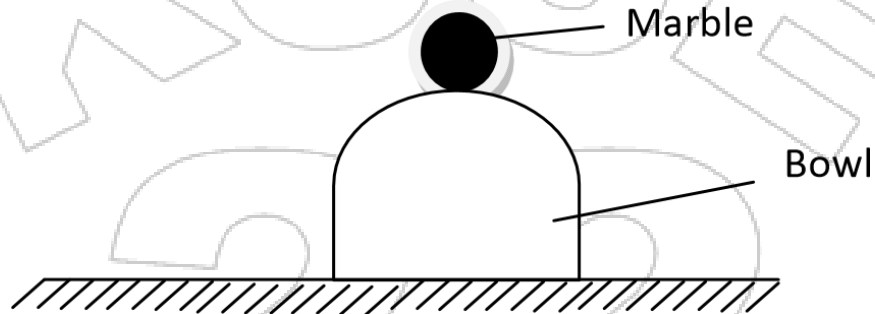
State and explain the type of equilibrium the marble is. **(2mrk)**

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7. i) Figure 4 shows two forces acting on an object, P is a force of 20N and the object moves with constant velocity. What is the value of the opposing force F? **(1mrk)**

Figure 4

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ii). Figure 5 shows the forces acting on a rain drop which is falling to the ground
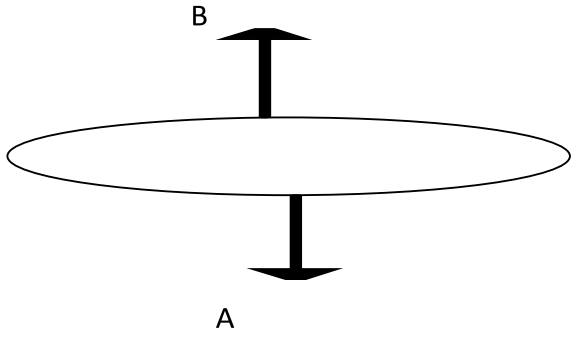
a).i). Name the force A causing the raindrop to fall. **(1mrk)**

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ii). Force B opposes the motion of the drop. State one possible cause of this force. **(1mrk)**

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b). State what happens to the drop when force A = force B **(1mrk)**

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8. State two molecular differences between a real gas and ideal gas. **(2mrks)**

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9. A man lifts a weight of 300N through a vertical height of 2m in 6 seconds. Determine the power developed. **(2mrks)**

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10. A drop of Methylated spirit placed on the back of the hand feels colder than a drop of water at the same temperature. **(1mrk)**

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11. "Air flow over the wings of an air craft causes a lift". Explain this statement with the aid of a labeled diagram. **(2mrks)**

12. Figure 6 shows a suspended copper solid immersed in a fluid.
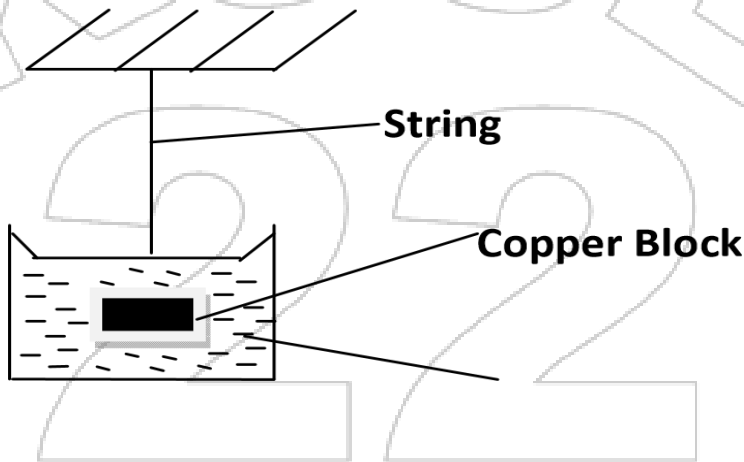
Liquid Figure 6

Explain what will happen to the tension in the string if a liquid of higher density is used. **(1mrk)**

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13. A bucket containing water is rotated in vertical circle of radius 80cm. What should be its velocity so that the water may not spill out. **(2mrks)**

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14.   A rubber ball of mass 400g strikes a wall horizontally at 6.0m/s and bounces back at 4m/s. In 0.02 second. Determine the total force it exerts on the wall.   **(2mrks)**

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SECTION B (55MARKS)

15.   a) State the pressure law of an ideal gas.   **(1mrk)**

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b). At 20^0c the pressure of a gas is 50cm of mercury. At what temperature would the pressure of the gas fall by 30cm of mercury. Give the temperature in degrees Celsius.   **(2mrks)**

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c). Define the absolute zero of the Kelvin temperature scale.   **(1mrk)**

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d) A hole of area 2.0 cm^2 at the bottom of a tank 2m deep is closed with a cork. Determine the force on the cork when the tank if filled with water. Take density of water = 1000kgm^{-3} and g = 10m/s^2

(4mrks)

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16. Ian has a mass of 70kg. He dives from a high diving pond. His vertical velocity at different times is shown in the graph in figure 7.
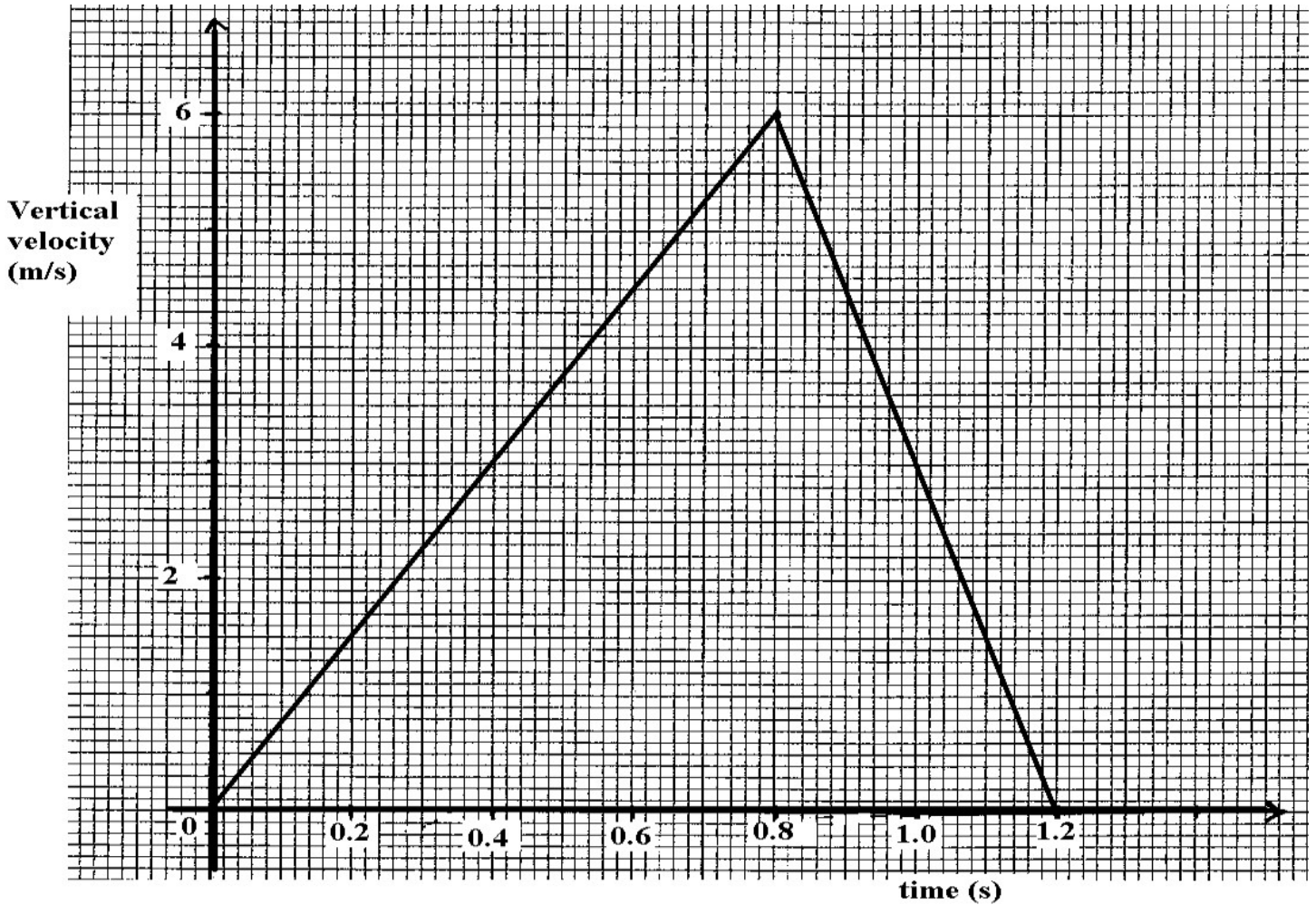
a). From the graph

i) Determine the height of the diving board   **(3mrks)**

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ii)   Determine the retarding force on Ian in the water.   **(3mrks)**

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b) i) Calculate the loss of Ian's Potential energy after 0.5sec diving.   **(3mrks)**

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ii). Determine Ian's kinetic energy 0.5s after he started the dive.   **(3mrks)**

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iii) Give an explanation for the differences between the answer to part b) (i) and (ii).   **(1mrk)**

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17. Figure 8 shows a child of mass 40kg at point A of a fair ground ride. If the velocity of the child at A is 8m/s and the wheel exhibits uniform circular motion,C
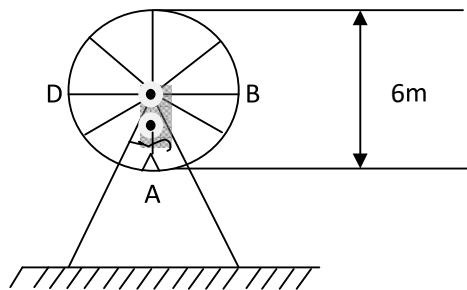
a). Determine the velocity of the child at point B.   **(2mrks)**

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b) Determine the centripetal force acting on the child.   **(3mrks)**

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c). At which position will the normal reaction of the seat be maximum? Give a reason for your
answer.   **(2mrks)**

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d). Sketch a graph of gravitational potential energy of the child against height as she moves from
point A to Point C. On the graph indicate the values of gravitational potential energy at points A B
and C.   **(3mrks)**
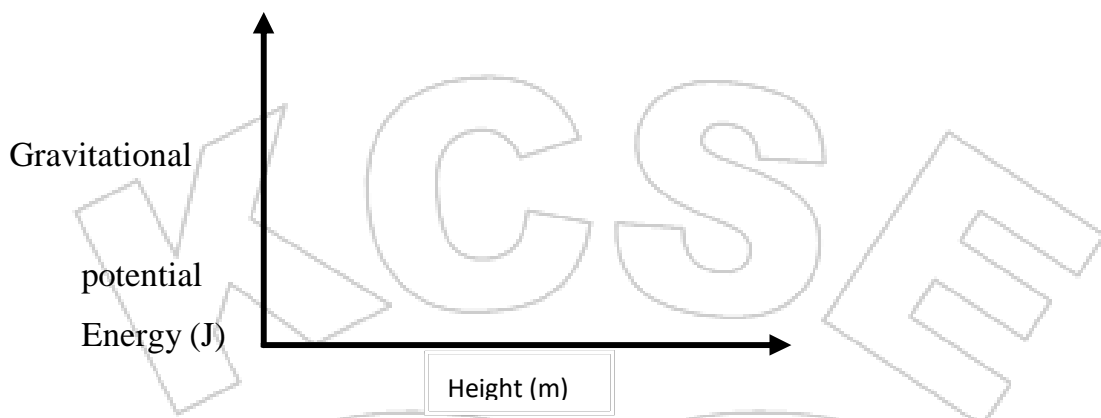
18. a) Define specific heat capacity.   **(1mrk)**

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b) In an experiment to determine the specific latent heat of water, steam at 100^0C was passed into
water contained in a well lagged copper calorimeter.
The following measurements were made
Mass of colorimeter = 60g
Initial mass of water = 80g
Initial room temperature of water = 15^0c
Final temperature of the mixture 45^0c
Final mass of water + calorimeter + condensed steam =160g
Specific heat capacity of water = $4200Jkg^{-1}k^{-1}$ and specific heat capacity of copper = $390Jkg^{-1}k^{-1}$
i). Calculate:
a)Mass of condensed steam   **(1mrk)**

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b)   Heat gained by the calorimeter and water.   **(4mrks)**

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ii) Given that Lv is the specific latent heat of evaporation of steam,

a). Write an expression for the latent heat of vaporization of steam.   **(2mrks)**

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b) Determine the value of Lv.   **(2mrks)**

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19. Figure 9 shows the same metal block weighted in the air, water and liquid. Given that the reading
 of the level of water becomes 75cm^3 when the metal is fully immersed,

Figure 9

0.9N

a)   b)   c)

                                                                      Water Liquid
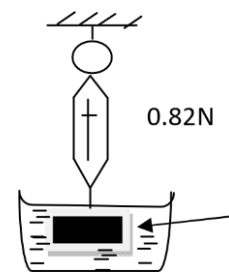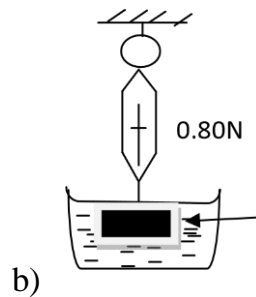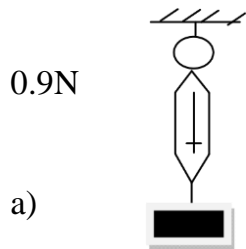
Determine (i) Density of the metal   **(3mrks)**

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ii) Water level before the solid was immersed.   **(2mrks)**

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iii) Explain why the spring balance gives different reading in figure 9 (b) and 9 (c) with the same
   metal block.   **(2mrks)**

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b)   A piece of wood of mass 16g and volume 20cm^3 floats on water. What additional mass should
  be placed on it so that it may float with its surface level within the surface of water.   **(2mrks)**

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c)i). State one conditions of equilibrium for a body acted upon by a number of parallel forces.**(1mrk)**

....

ii).Figure 10 below shows a uniform plank of length 6.0cm acted upon by forces shown. If the plank
 has a weight of 30N, determine the weight of W given that volume of metal block is 5000cm^3, density
of water = 1g/cm^3 **(4mrks)**
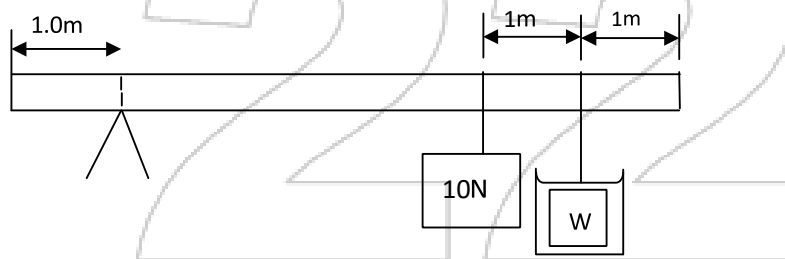
Figure 10.

KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………. INDEX NO………………………

SCHOOL……………………………………. SIGN…………………………………

DATE…………………………………………

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

232/2

PHYSICS

PAPER 2

TIME: 2 HOURS

INSTRUCTIONS TO THE CANDIDATES:

*Write your **name** and **index number** in the spaces provided above This paper consists of **two** sections A and **B.***
*Answer **all** questions in section **A** and **B** in the spaces provided.*
*All working **must** be clearly shown in the spaces provided.*
Mathematical tables and electronic calculators may be used. Take $h = 6.64 \times 10^{-34} js$
$M_e = 9.1 \times 10^{-31} Kg,$

FOR EXAMINERS' USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1-16	25	
B	17	12	
	18	10	
	19	14	
	20	12	
	21	7	
	TOTAL	**80**	

SECTION A (25 marks)

Answer all questions in this section in the spaces provided

1.Figure 1 shows an object AB placed in front of a pin-hole camera. Using a ray diagram, show how the image is formed on the screen.
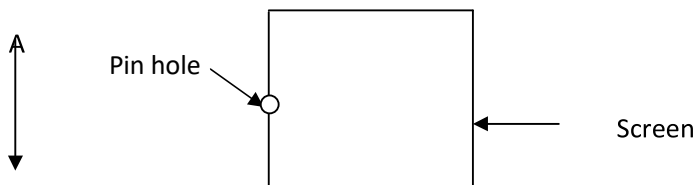
2.*State* the conditions necessary for a wave incident on a slit to be diffracted. ᴮ   **(2mrks)**

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3.Figure 2 represents a transformer connected to an Ac source and a resistor R.
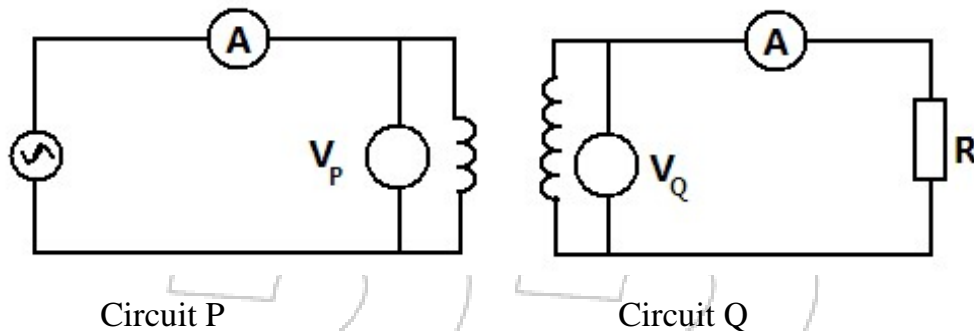
Circuit P   Circuit Q

a). Compare the ratios $\frac{I_P}{I_Q}$ and $\frac{V_Q}{V_P}$ where I_p and I_Q are the currents flowing through the circuits P and Q respectively while V_P and V_Q are the potential differences across the circuits P and Q respectively.   **(1mrk)**

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b) *State* the assumption made in question 3 (a) above.   **(1mrk)**

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4. Figure 3 below shows a simple experiment using a permanent magnet and two metal bars X and Y put closer the iron fillings.

Y X

X Y
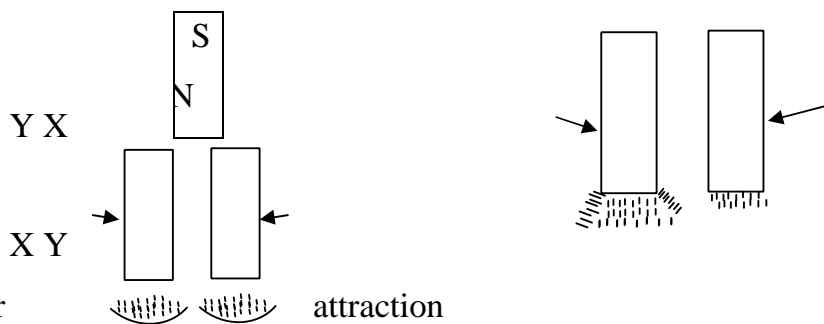
b). After   attraction

a). During attraction

State with a reason which bar is made from a soft magnetic material.   **(2mrks)**

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5. *State one* difference between a chemical reaction and radioactivity.   **(1mrk)**

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6. Figure 4 shows a Zener diode connected in a circuit in series with a bulb.

S1

S2
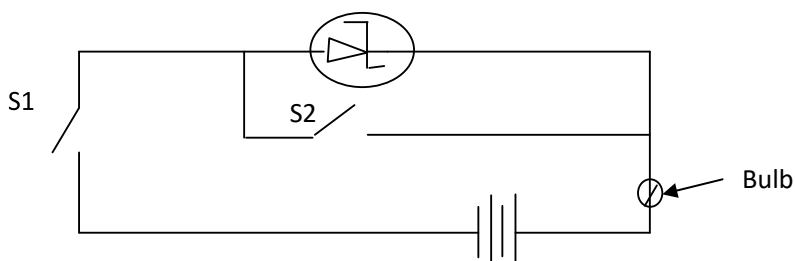
Bulb

It is observed that the bulb lights when both switches S_1 and S_2 are closed. *State* and *explain* the observation made on the bulb when S_1 is closed and S_2 is open.   **(2mrks)**

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7. *State* the advantage of generating an Ac supply rather than DC voltage supply in a power station.

     (1mrk)

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8.Figure 5 shows a force on a conductor carrying current when placed in a magnetic field.

Current out of paper

R [   ] ⊙ [   ] T
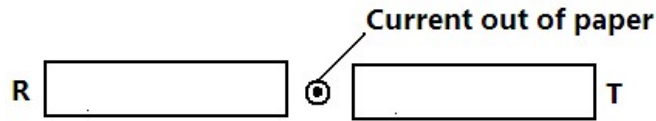
Figure 5

State the polarities R and T.   **(1mrk)**

T _____

R _____

9.What is the purpose of a fuse in domestic wiring system?   **(1mrk)**

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....

10. The period of a wave is T seconds. Its wavelength is λ metres. Show that $v = f\lambda$ where v is the speed of the wave and f is the frequency.   **(2mrks)**

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11. In determining the depth of an ocean, an echo sounder producing ultrasonic sound is used. *Give one* reason why this sound is preferred.   **(1mrk)**

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12. What causes electrical resistance in conductors?   **(1mrk)**

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13. *State one* advantage of a CRO as a voltmeter over other voltmeters.   **(1mrk)**

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14. A ray of light incident on the surface of a glass prism is observed as represented in the
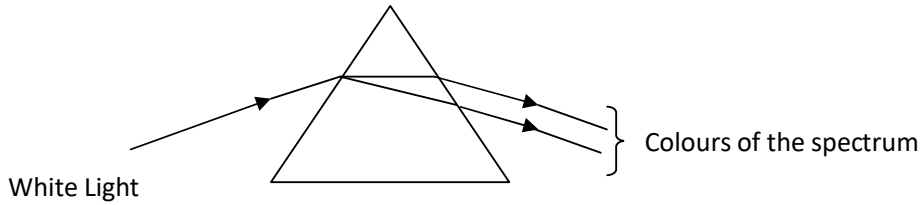
Figure 6.

Explain this observation. **(2mrks)**

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15. Figure 7 shows how a distant object is focused in defective eye.

Parallel Rays
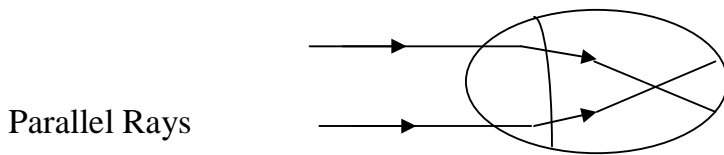
Figure 7

a).*State* the nature of effect. **(1mrk)**

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b). Suggest a suitable lens to correct the defect. **(1mrk)**

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....

16. One of the isotopes of Uranium has a half life of 576 hours.

Complete the table below to show how the mass varies with time from the initial mass of 4000mg.

Time (minutes)	34560	69120
Mass (mg)	4000	

Explain why the mass of the isotope will not eventually reduce to zero. **(1mrk)**

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SECTION B (55Marks)

__Answer ALL the questions in this section in the spaces provided__

17.　　　a).The following nuclear reaction is part of radioactive series.

$$^{210}_{82}A \xrightarrow{\beta} \ ^{210}_{x}B \xrightarrow{r} \ ^{210}_{84}C \xrightarrow{s} \ ^{y}_{82}D$$

i). Name the radiations represented by r and s　　　　　　　　　　　　　　　**(2mrks)**

s_____

r_____

ii). Determine the numbers represented by x and y.　　　　　　　　　**(2mrks)**

y

....

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X

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b) Figure 8 shows the features of a diffusion cloud chamber used for detecting radiations for radioactive sources.
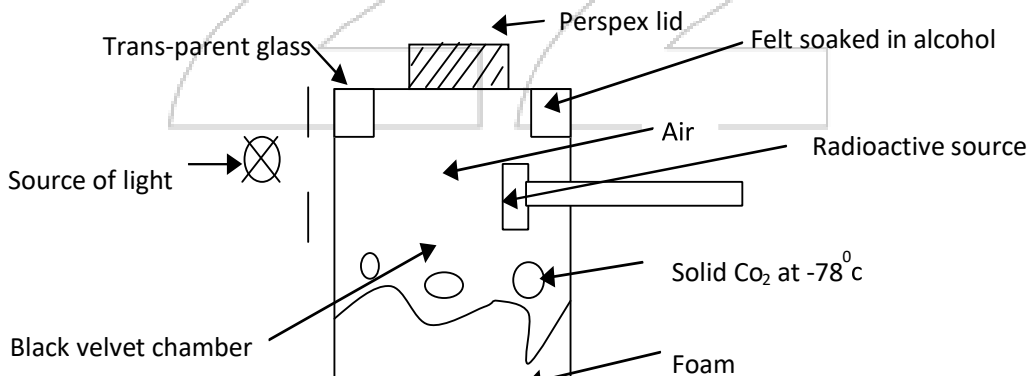
i) State the property of alcohol that makes it suitable for use in the chamber.　　　　**(1mrk)**

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ii)　　　*State* the function of the Perspex lid.　　　　　　　　　　**(1mrk)**

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iii)   ***Explain*** why the base velvet chamber is painted black.   **(1mrk)**

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iv)   Explain how the radiation from the radioactive source is detected in chamber.   **(4mrks)**

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v)   ***State two*** advantages of the cloud chamber over a charged gold leaf electroscope when used
as detectors of radiations.   **(2mrks)**

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18. a). Figure 8 shows an object AB, placed in front of a converging mirror. C is the center of
curvature of the mirror.

Using a ray diagram, determine the size of the image of AB as reflected by the mirror.   **(4mrks)**

b). In an experiment to determine the local length of a convex lens, the corresponding values of the object distance u, and the image distance v, both measured from the optical center of the lens were obtained. The graph below shows the relationship between v and u.
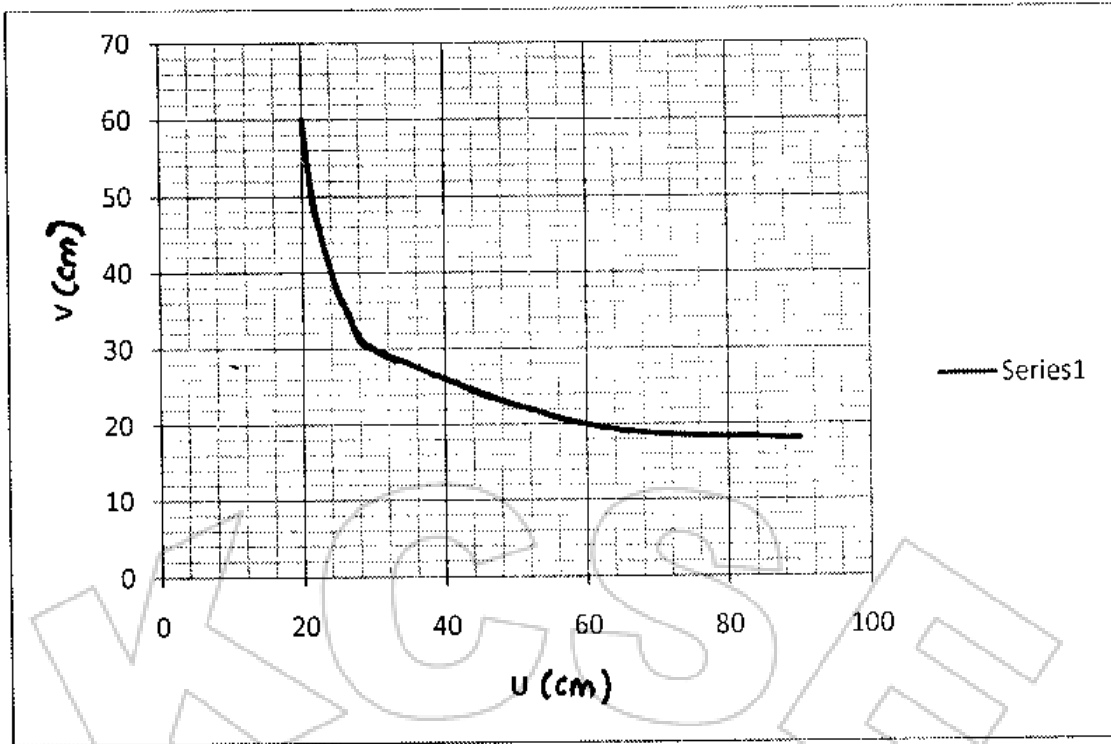
i) Using the graph above and without using the lens formula, determine the value of the focal length of the lens. **(3mrks)**

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ii) A convex mirror of focal length 10cm forms an image 5cm from the mirror. By calculations, determine the position of the object as measured from the mirror. **(3mrks)**

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19. a) State Ohm's law. **(1mrk)**

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b). A dry cell of emf E and an internal resistance of r is used to drive a current through various

resistors of resistance R and the $\frac{1}{I}$ values of and R plotted on a graph in figure 9.
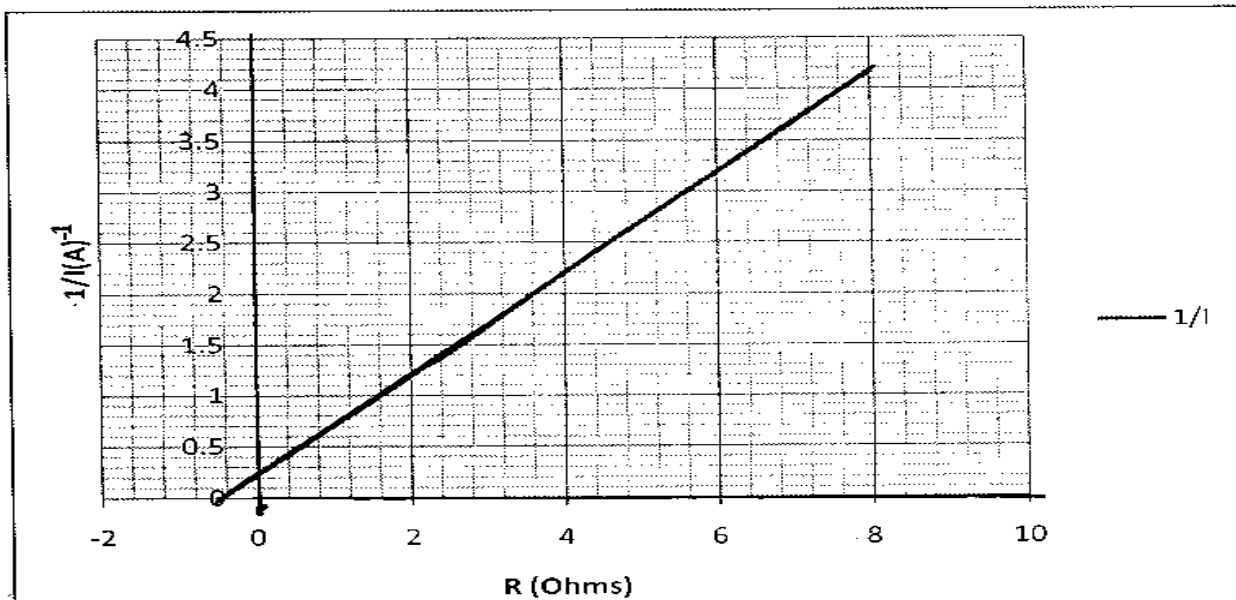
Figure 9.

The variables I and R are related by the equation $\frac{1}{I} = \frac{R}{E} + \frac{r}{E}$

(i) Using the graph in figure 9, determine the emf, E of the cell. **(4mrks)**

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....

iii) Show that the internal resistance r of the cell is given by r = -R intercept and hence determine r.

(3mrks)

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....

c). Figure 10 shows part of a ring main circuit connected to hair drier salon heater.

Figure 10.
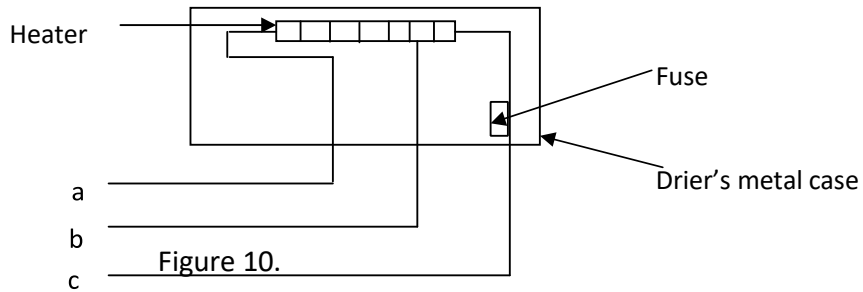
Identify by giving a reason the wire labeled c.   **(2mrks)**

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....

d). Two lamps marked 75W 250V and an electric heater marked 2KW 250V are used for a period of 10 hours. Calculate the total cost of using them for this period if electricity costs Khs.4.5 per kWh unit.   **(4mrks)**

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20. a) State one property of X – rays that is not exhibited by visible light**.**   **(1mrk)**

....

....

b).Figure 11 shows the features of an X- ray tube.
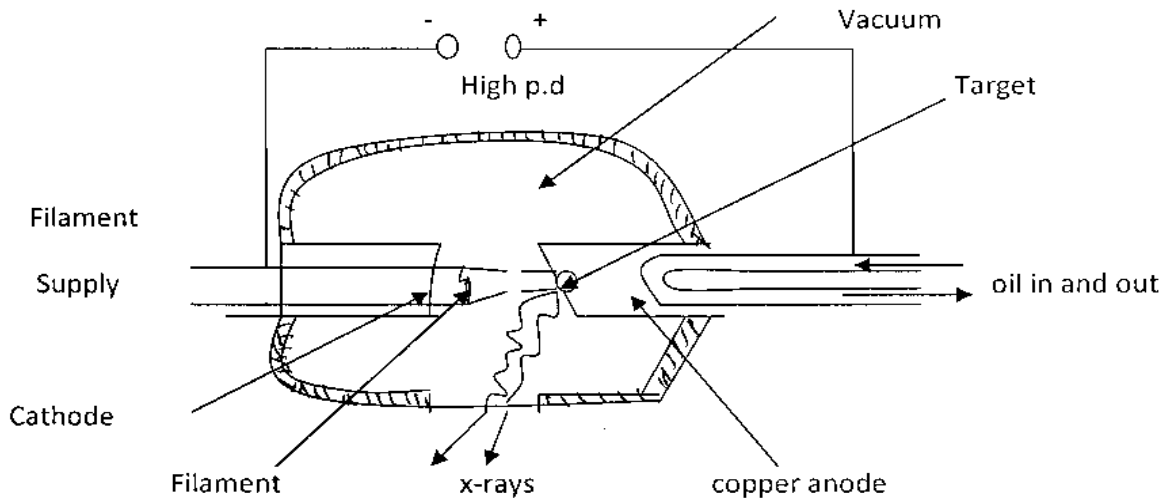
i). State how the electrons are produced.   (1mrk)

....

....

ii).What is the effect on the wavelength of the X- rays produced when

a)   P.d across the tube is decreased.   (1mrk)

....

....

b)   The number of electrons hitting the metal target is increased.   (1mrk)

....

....

iii). Why is copper metal used at the anode?   (1mrk)

....

....

iv).*State* with a reason the property of molybdenum that makes it suitable as a target.   (2mrks)

....

....

v). Explain how soft X – rays are produced in this X – ray tube.   (2mrks)

....

....

....

c). Calculate the maximum velocity of electrons that would produce X- rays of frequency 8.0×10^8 Hz if only 20% of the kinetic energy is converted to X rays.   (3mrks)

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....

21.a) Figure 12 shows a transverse stationary wave along a string
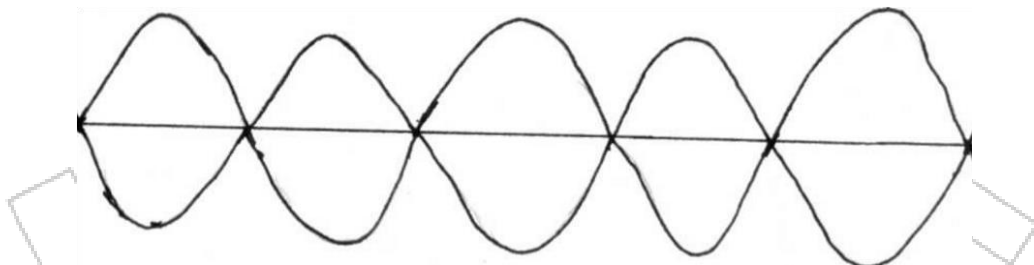
i). Label the nodes and antinodes on the diagram above.   **(1mrk)**
ii). If the distance between an anti-node and consecutive node is 1.0×10^{-3}m, determine the wavelength of the stationary wave.   **(2mrks)**

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b). Five successive wave frequency in a ripple tank are observed to spread a distance of 6.4cm. If the vibrator has a frequency of 8 Hz, determine the speed of the wave.   **(2mrks)**

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....

d). Figure 13 shows a transmitter producing both TV and radio waves.

Transmitter

Home
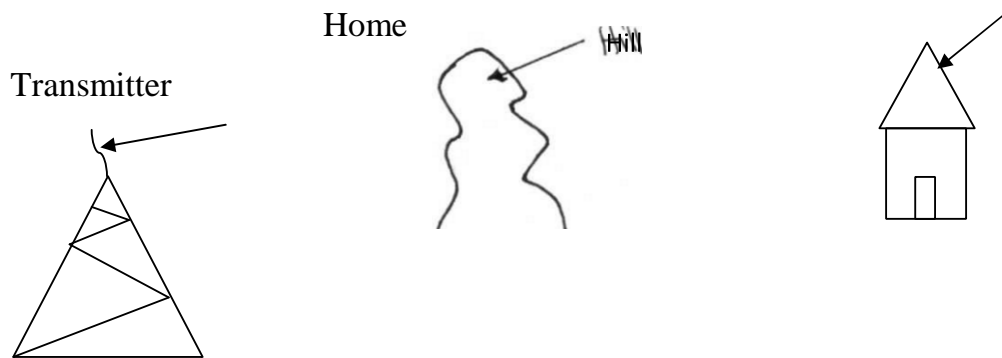
Briefly explain why radio reception will be better than TV beyond the hill.   **(2mrks)**

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KCSE 2022 PASSWORD

SERIES 1

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

PHYSICS

PRACTICAL

<u>**CONFIDENTIAL INSTRUCTIONS TO SCHOOLS**</u>

Question 1

Each candidate is required to have:

- *A metre rule*
- *Two stands*
- *A pendulum bob*
- *Some plasticine*
- *Stop watch*
- *Protractor*
- *Two pieces of strings (long~1m and short ~20cm one)*

Question 2

Each candidate is required to have:

- *A glass block (10 cm x 6 cm)*
- *A Plane mirror (7cm x 6 cm)*
- *4 optical pins*
- *A soft board*

- *Cellotape (about 15 cm long)*
- *2 white – plain sheets of paper*
- *a ruler or half – metre rule*
- *A protractor*
- *4 office pins*

1) *a nichrome wire, 1m long mounted on mm scale and labeled AB at the ends (SWG 28)*

- *A dry cell*
- *1 ammeter (0 – 1A)*
- *A switch*
- *A bulb*
- *A voltmeter (0-5v or 0 – 3v)*
- *A one cell holder*
- *At least 6 connecting wires, one with a jockey*

KCSE 2022 PASSWORD
SERIES 1

NAME…………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN…………………………………

DATE…………………………………………

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

232 / 3

PHYSICS

PAPER 3

PRACTICAL

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

❖ *Write your name and Admission number in the spaces provided above.*

❖ *Answer **ALL** the questions in the spaces provided in the question paper.*

❖ *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 observations actually made, for their suitability and accuracy and the use made of them.*

FOR EXAMINER'S USE ONLY

QUESTION	SCORE
1	
2	
Total	

1. You are provided with the following apparatus

- *A metre rule*
- *Two stands*
- *A pendulum bob*
- *Some plasticine*
- *Stop watch*
- *Protractor*
- *Two pieces of strings (long and short one)*
    Proceed as follows:

2) Attach one end of the length of string to the metre rule at 10cm mark. Mark by use of a sliding loop of string round the meter rule.
3) Fix the string at this point with the small bob of plasticine.
4) Tie the string in a second loop at 90cm mark so that the string is stretched taught between the two marks.
5) Fix this loop with a small plasticine. Attach the pendulum bob to the centre of the string so that the centre of gravity is 15cm below the point of suspension.
6) If the attachments of the pendulum bob to the pieces does not produce a V-shape squeeze the string at the knot between the thumb and the fore finger.
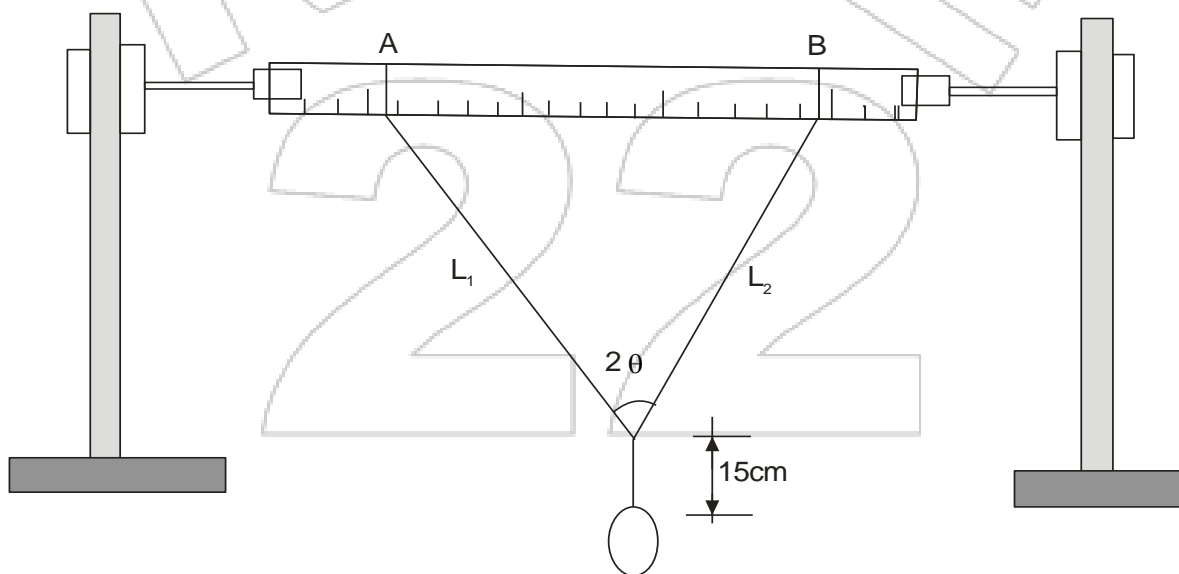
a.   Measure the angle 2θ

b. Pull the pendulum bob towards you through a small distance, release it; measure the time (t) of the motion by timing 10 oscillations.

c. Remove the plasticine at B and slide the loop towards A by 4cm and repeat (ii) above for other distances AB as shown in the table below.

RESULTS (9 marks)

Length from A to B(cm)	80	76	72	68	64	60
Time for 10 oscillations(s)						
Periodic time T(s)						
$T^2(s^2)$						
2θ						
θ						
$\cos\theta$						

f) Plot a graph of T^2 against Cos θ (5 marks)
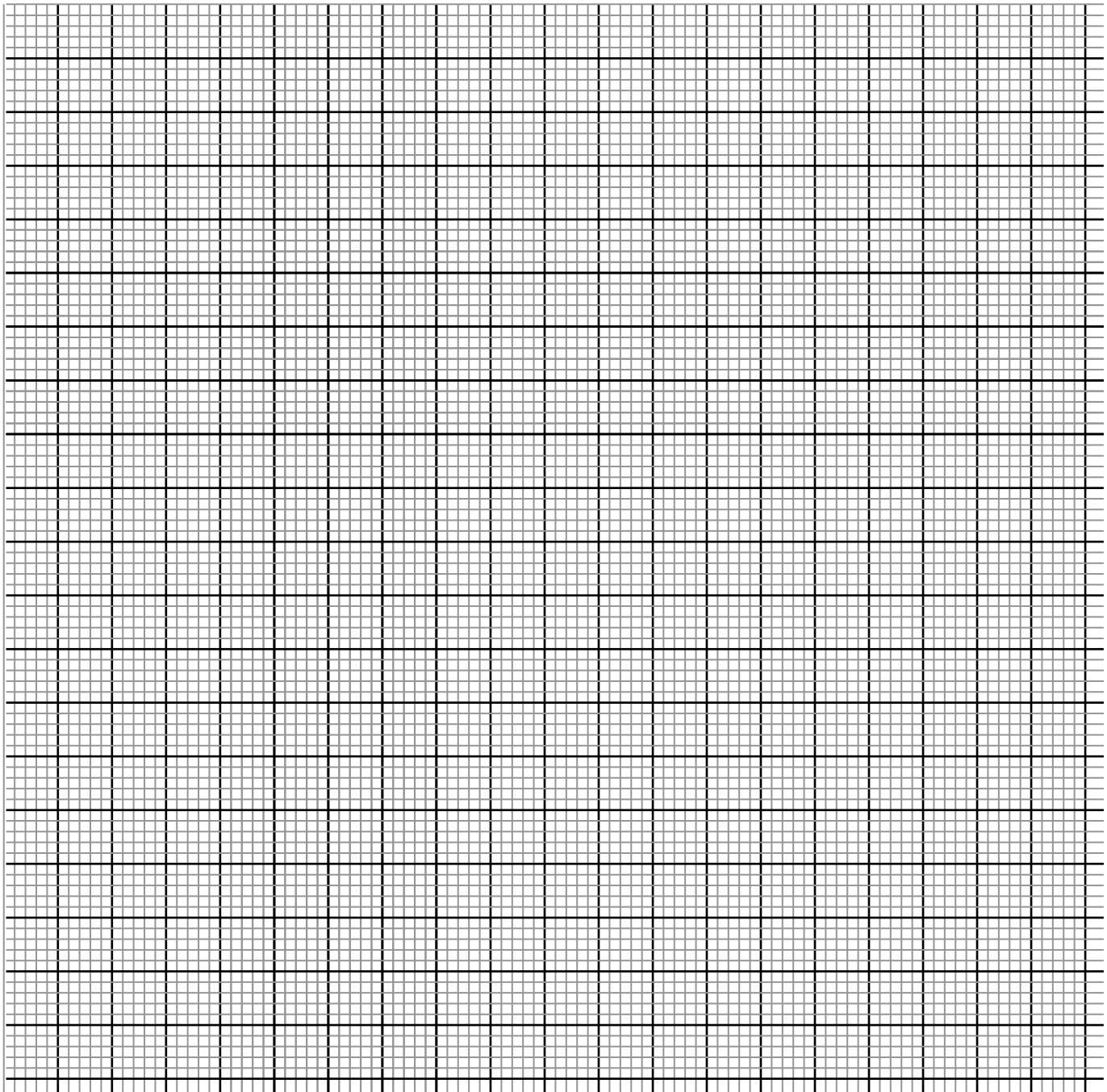
g) Find the slope S of the graph. **(3 marks)**

h) Given that $S = \dfrac{1.6\pi^2}{k}$, find k **(3 marks)**

2. PART A

a) You are provided with the following apparatus
- a glass block
- a plane mirror
- 4 optical pins
- a soft board
- A cellotape (about 15cm long)
- 2 white – plain sheets of paper
- a ruler or half metre rule
- a protractor
- 4 office pins

Proceed as follows:-

(i) Using the cello tape provided fix the plane mirror to the glass block alongside as shown in the figure below. The reflecting surface to face the glass block.
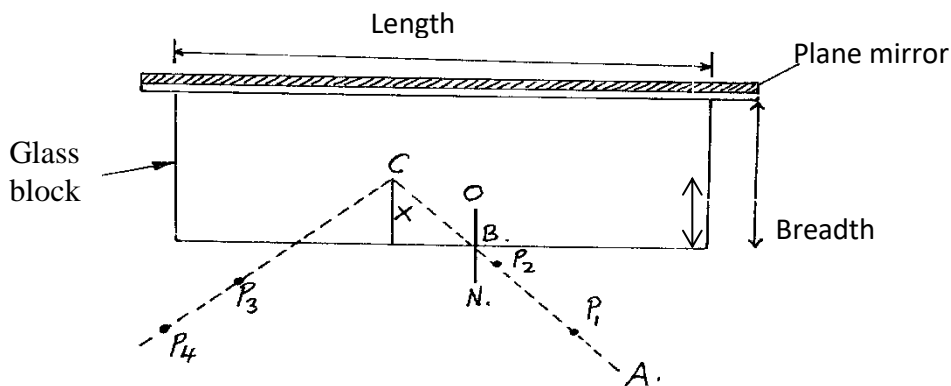
(ii) With the use of the office pins, secure firmly a white plain paper on the board and place the block together with attached mirror.

(iii) Draw the outline of the glass block together with the mirror

(iv) Remove the block and the mirror and draw a normal at B somewhere a quarter- way the length of the outline you drew in (iii) above.

(v) Draw four(4) different rays AB incident at B and extended to C. The incident rays should make angles 10°, 20°, 30°,and 40°.

(vi) Replace the glass block together with the attached mirror so as exactly fit the outline in(iii)

(vii) Place two object pins P_1 and P_2 along the 10° line. Locate the images of pins P_1 and P_2 as they appear by non-parallax (the images of the pins appear to be in a straight line when viewed through the glass block).

Place pins P_3 and P_4 so that the images of pins P_1 and P_2 are not seen.

(viii) Remove the glass block together with the attached mirror from the outline and produce the lines joining P_1 to P_2 and P_3 to P_4 so that the they intersect at C. Measure and record the distance x in the table 2 below. **(4 marks)**

NB. It may be necessary for you to draw another outline so as to avoid congestion of (construction) lines.

Angle i °	10	20	30	40
Distance x(cm)				

Table 2

(ix) Now measure the breadth b of the glass block.

b=_____(1mark)

(x) Calculate the average A_x of the values of x in table 3 above

A_x _____ **(1mark)**

(xi) Determine the refractive index of the glass block using the formula.

Refractive index n of glass $n = \dfrac{b}{A_x}$ **(2 marks)**

PART B

You are provided with the following

      i. *A nichrome wire 1m long mounted on a scale*

      ii. *A dry cell*

      iii. *1 ammeter (0 – 1A)*

      iv. *A switch*

      v. *A bulb*

      vi. *A voltmeter (0-5v or 0 – 3v)*

      vii. *A one cell holder*

      viii. *At least 6 connecting wires, one with a jockey*

Proceed as follows

a) (i) Set up the circuit as shown in fig. 2

Fig 2
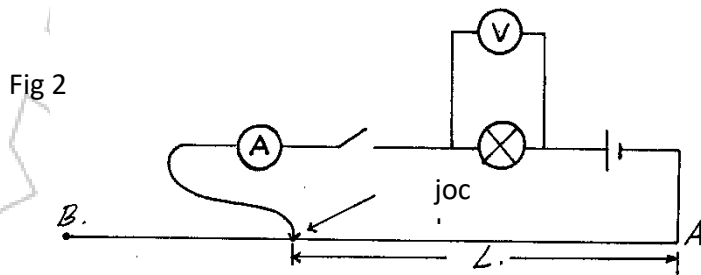
- With the jockey / crocodile clip at B (L=100cm) note the voltmeter reading V and ammeter reading, I and record on the table III below.

- Repeat the procedure in (ii) above for L=80cm, 60cm, 40cm, 20cm and 0cm and record.

5 marks

Table III

L(cm)	100	80	60	40	20	0
V(volts)						
I (A)						

iv) Plot the graph of V(y-axis) against I on the grid provided.   **5marks**
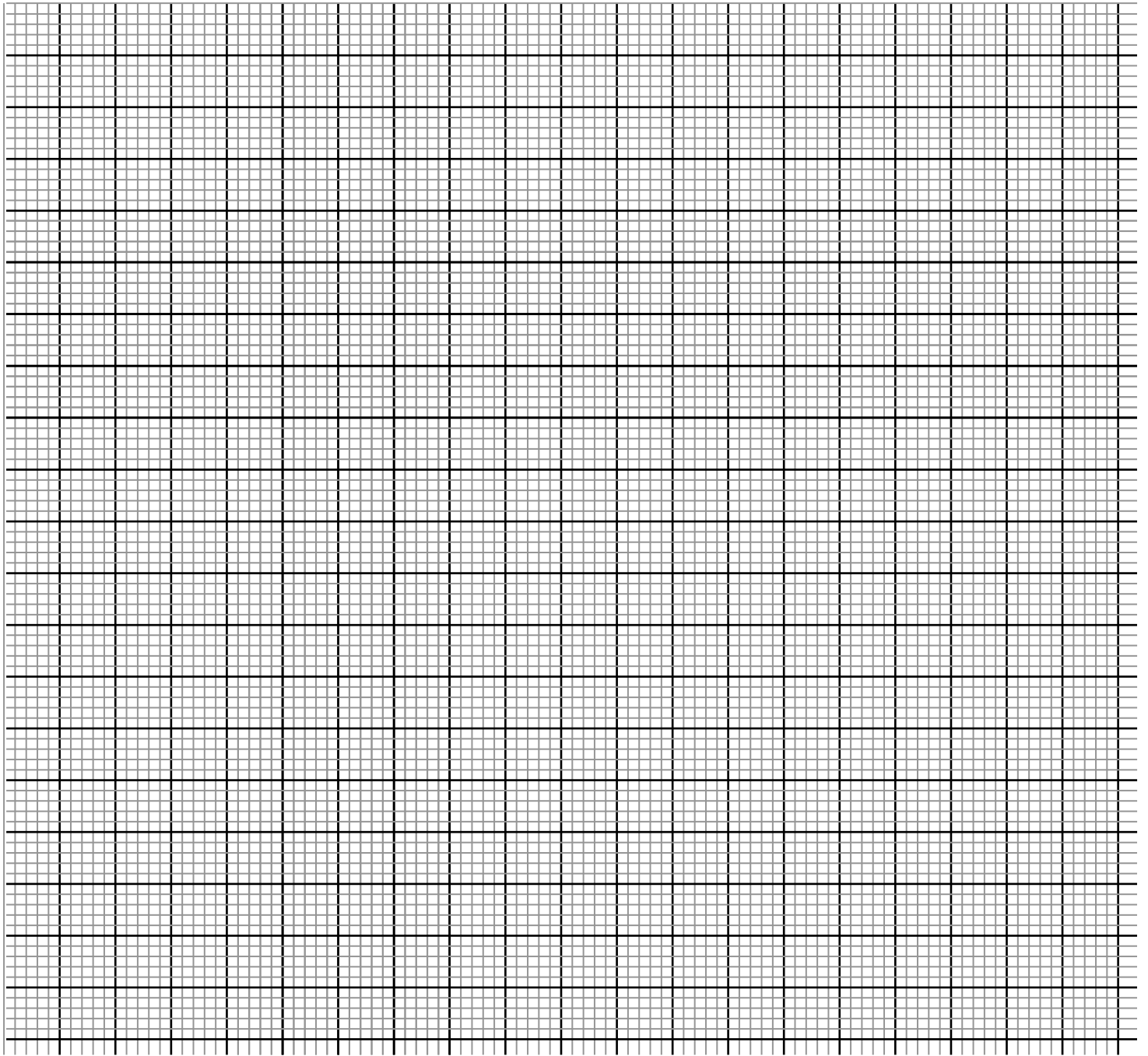
v) Calculate the slope of your graph when current is 0.15A. **2 marks**

KCSE 2022 PASSWORD
SERIES 1

NAME……………………………………… INDEX NO………………………

SCHOOL…………………………………… SIGN……………………………

DATE………………………………………

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

443/1

AGRICULTURE

PAPER ONE

TIME:2 ½ HOURS

INSTRUCTION TO CANDIDATES

a) *Write your name and index number in the spaces provided above*
b) *Sign and write the date of examination in the space provided*
c) *This paper consists of THREE section A, B, and C*
d) *Answer ALL questions in section A and B*
e) *Answer any TWO question in section C*

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE SCORE
A	1-19	30	
B	20-25	20	
C		20	
		20	
	TOTAL	90	

Answer ALL the in this section in the spaces provided.

1. a). What is land fragmentation in farming?   **(½ mark)**

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....

b) State two causes of land fragmentation in Kenya since independence   **(1mk)**

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2.   State four advantages of using organic matter for mulching.   **(2mks)**

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3.   State four reasons for practicing crop rotation.   **(2mks)**

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4.   Give two advantages of growing one type of annual crop on the same piece of land
   continually**.**   **(1mk)**

....

....

5. State four factors that may determine the number of cultivation when preparing a seed bed. **(2mks)**

....

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....

....

6. State four methods of improving labour productivity on a farm   **(2mks)**

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....

7. Explain the following terms as used in agricultural economics.   **(2mks)**

 i. Marginal Returns

....

....

ii. Gross Domestic product (G D P)

....

....

iii. Opportunity cost

....

....

iv. Per capital income

....

....

8. Mention two ways by which soil PH may affect crop production   **(1mk)**

....

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9. Give two mechanical methods of separating soil particles according to size during soil
analysis.   **(1mk)**

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10. Mention four factors which affect the quality of hay (2mks)

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11. Give one possible cause of swelling on the root of bean plants. (½ mk)

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12. Mention two soil factors which influence soil productivity. (1mk)

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13. Give four factors which influence solifluction. (2mks)

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14. List four factors that affect the selectivity of herbicides (2mks)

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15. List down four benefits that a farmer may derive from agro forestry trees (2mks)

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16. Give two types of product-product relationship in agricultural economics. **(1mk)**

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17. Mention four activities carried out by young farmers clubs in Kenya **2mks)**

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18. Give four deficiency symptoms of phosphorus in crops. **(2mks)**

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19. State two characteristics of a good rootstock for grafting **(1mk)**

....

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SECTION B (20 MARKS)

Answer ALL the questions in this section in the spaces provided

20. Below is a diagram of a bird labelled A, which is a crop pest.

A

(i) Identify the bird_____(½mk)

(ii) **State two** ways by which the bird causes loss in crops. **(1mk)**

....

....

....

(iii) **State four** methods which are used to control the pest. **(2mks)**

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21. Below is a diagram of money maker tomato plant labeled B

B
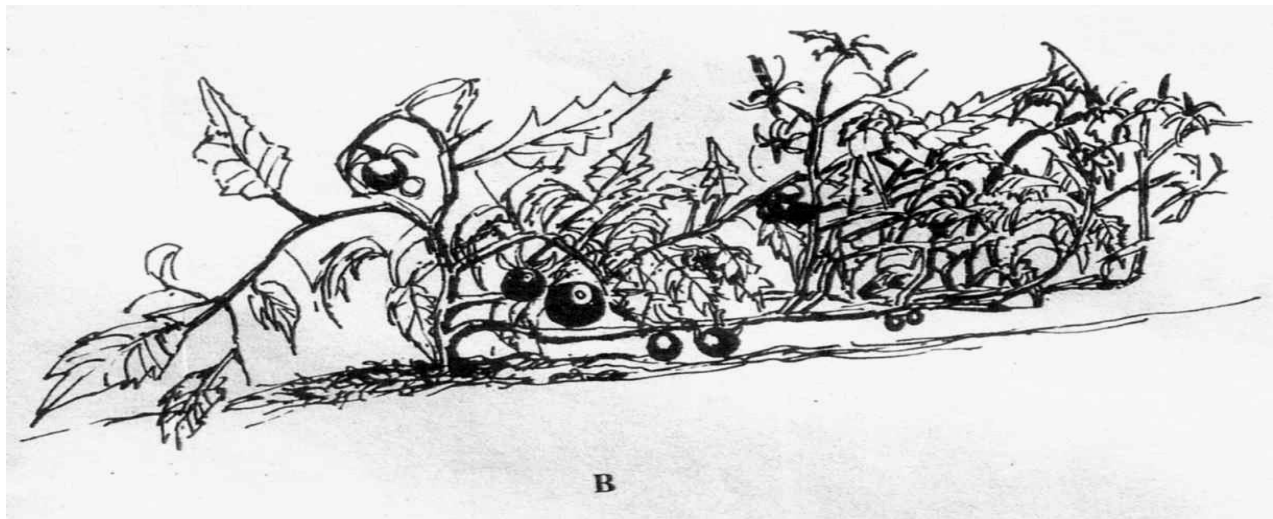
i) Identify any two management practices that have not been carried out on the tomato plant **(1mk)**

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....

....

ii)State two problems that may arise as a result of not carrying out the management practices you

have indentified (i) above **(1mk)**

....

....

22. The diagram below shows a weed plant labeled C.
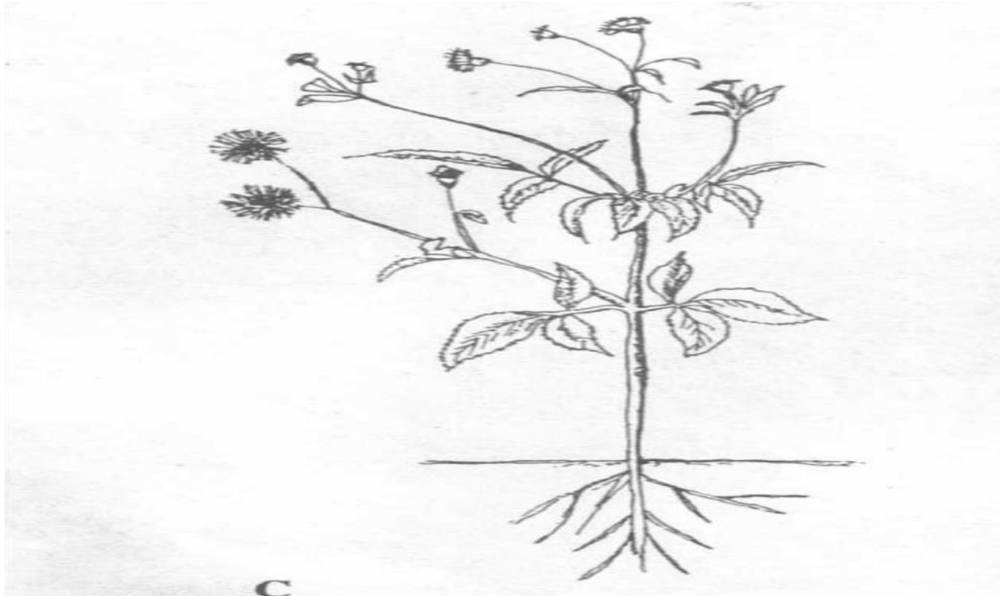
i) Identify the weed plant   **(½mk)**

_____

ii)   State two reasons for controlling the weed labeled C in a crop field.   **(1mk)**

_____

_____

iii)   State one herbicide that can be used to control the weed in a field of growing maize. **(1mk)**

_____

_____

iv)   At what stage of growth of maize should a post emergence herbicide be applied?   **(½mk)**

_____

_____

23.   i) What is a cut off drain?   **(½mk)**

_____

_____

(ii)   Describe the procedure of constructing a cut off drain.   **(2mks)**

_____

_____

_____

(iii)   State one factor that would determine the width and depth of the cut- off drain   **(½mk)**

_____

_____

24.   On 10/1/2010 Lutonyi farm purchased on credit the following items from an Agro-vet shop

1)   20 bags of dairy meal, 70kg each @ kshs1, 100 per bag
2)   16 bags of bran, 70kg each@kshs700 per bag
3)   18 bags of D.S.P fertilizer,50kg@kshs1,500 per bag
4)   45 bags of seed maize, each2kg @kshs300 per bag
5)   8 Shearing knives (medium sized)@kshs300 per knife

i) Prepare the purchase order that Lutonyi farm made to the agro-vet shop   **(4mks)**

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ii) Calculate the value of each item purchased and the total value of the order.   **(2mks)**

25. The diagram below shows an experiment set up using soil types A,B and observations were
 made after 24hours.Study the diagram and answer the questions that follows
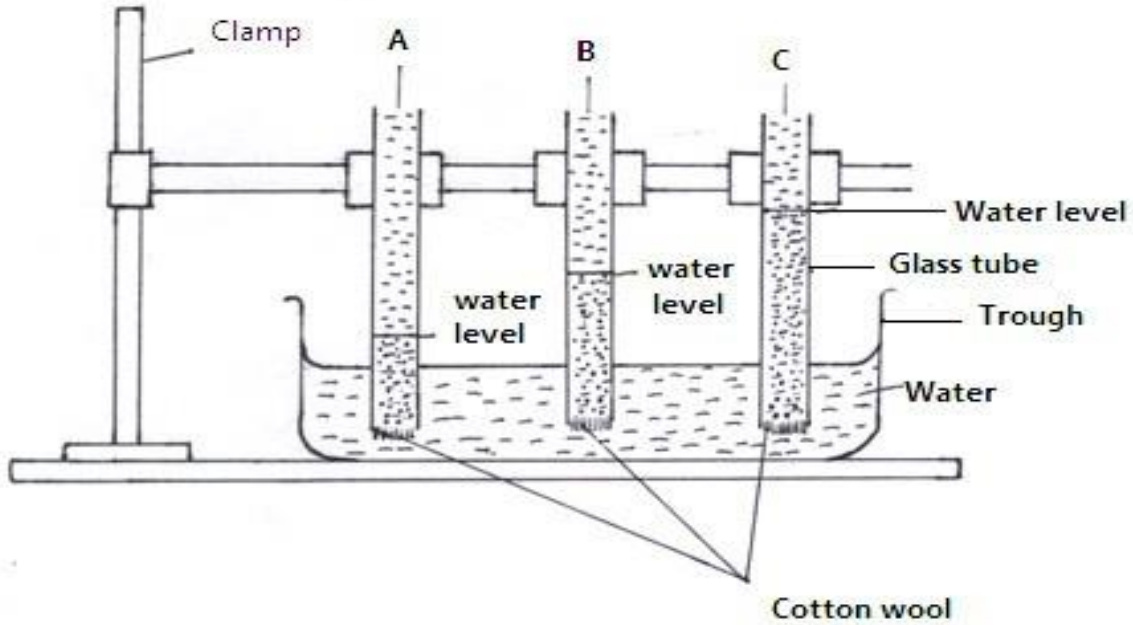
I) what is the experiment represented in the diagram above designed to study?   (½ mk)

....

....

ii) Name the three soil types labelled A, B and C.   (1 ½ mks)

A_____

B_____

C_____

iii) What is characteristic texture of soil types A and C?   (1 mk)

A_____

C_____

iv) State how a farmer would improve the structure of soil type A.   (½ mk)

....

....

SECTION C 40 MARKS)

__Answer any TWO questions from this section in the spaces provided after question 28__

26.   a) Mention and explain five sites for agro-forestry trees in the farm.   **(10mks)**

b)   Explain the factors to consider in choosing the type of irrigation in the farm.   **(10mks)**

27.   a) Describe the field production of Tea under frame formation by pegging method **10mks)**

b)   Describe the growing of Tomatoes under the following sub- headings

     i)   Transplanting   **(5mks)**

     ii)   Diseases and their control   **(5mks)**

28.   a) State and explain the market functions   **(10mks)**

     b) State and explain the various Land Tenure systems practised in Kenya   **(10mks)**

KCSE 2022 PASSWORD
SERIES 1

NAME……………………………………………   INDEX NO………………………

SCHOOL…………………………………………   SIGN……………………………

DATE……………………………………………

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

443/2

AGRICULTURE

PAPER TWO

2 HOURS

INSTRUCTION TO CANDIDATES

a) *Write your Name and index number in the spaces provided above*
b) *Sign and write the date of the date of the examination in the spaces provided above*
c) *This paper consists of THREE section A,B and C*
d) *Answer ALL questions in sections A and B and any TWO questions in section C*
e) *Write your answers in spaces provided*

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE SCORE
A	1-16	30	
B	17-20	20	
C		20	
		20	
TOTAL SCORE		90	

SECTION A (30MARKS)

Answer ALL questions in this section in the spaces provided

1. **State four** factors that affects the digestibility of animal feed. **(2mks)**

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2. Distinguish between crutching and ringing in sheep production **(2mks)**

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3. **Give four** factors considered when sitting an apiary. **(2mks)**

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4. **State four** physical features of a good layer **(2mks)**

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5. **Give four** uses of harrows **(2mks)**

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6.   **Explain** the term 'hybrid vigour' as used in livestock production.   (1mk)

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7.   **State four** desirable features of a rabbit hutch.   (2mks)

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8.   **Give four** disadvantages of an artificial incubation.   (2mks)

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9.   **State four** signs of round worms attack in livestock production.   (2mks)

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10.   **List six** predisposing factors to livestock diseases.   (3mks)

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11. **Give four** maintenance practices of a disc plough. **(2mks)**

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....

12. Name the vector which transmits the following diseases. **(1mk)**

i) East coast fever_____

ii) Trypanosomiasis_____

13. List *four* farm structures which would assist to control livestock parasites. **(2mks)**

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....

14. State *four* signs which indicate that the sow is about to furrow. (2mks)

....

....

....

....

15. Name the other tool used together with the following tools during their operations. **(2mks)**

i) Cannular_____ ii)

Brace_____ iii)

Elastrator_____ iv) Wood

chisel_____

16. Name the strokes in the *TWO* stroke cycle engines. **(1mk)**

....

....

SECTION B (20MARKS)

Answer ALL questions in the spaces provided

17.   The diagram below illustrates the farm tools labeled A, B and C.Study them and answer the questions that follow
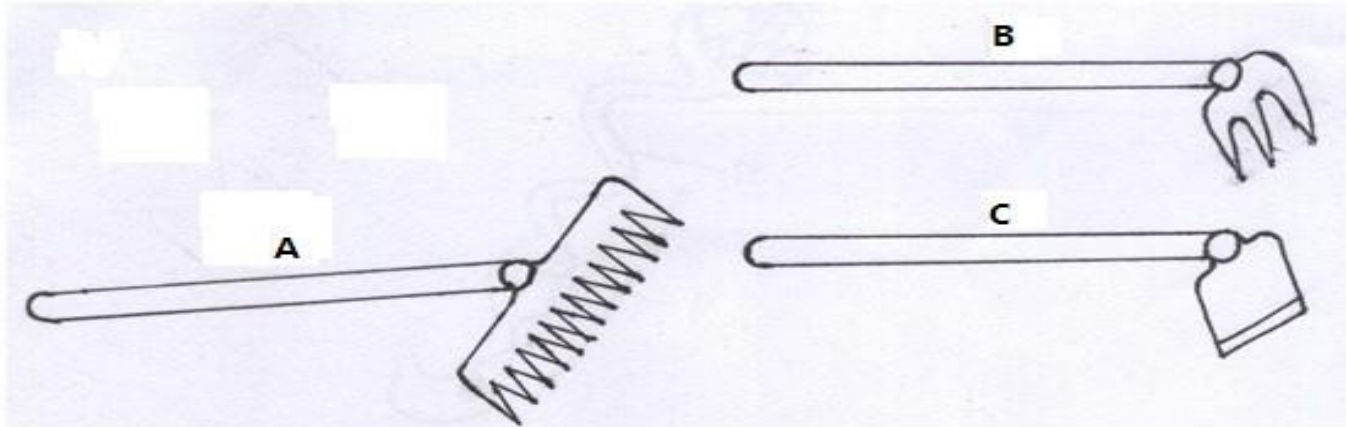
a)*State THREE* proper uses for the tool labeled **A.**   **(3mks)**

....

....

....

b)   **State THREE** field conditions under which the tool labeled **B** would be more suitable for use than tool **C.**   **(3mks)**

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18.   The diagrams **E** and **F** below shows livestock parasites
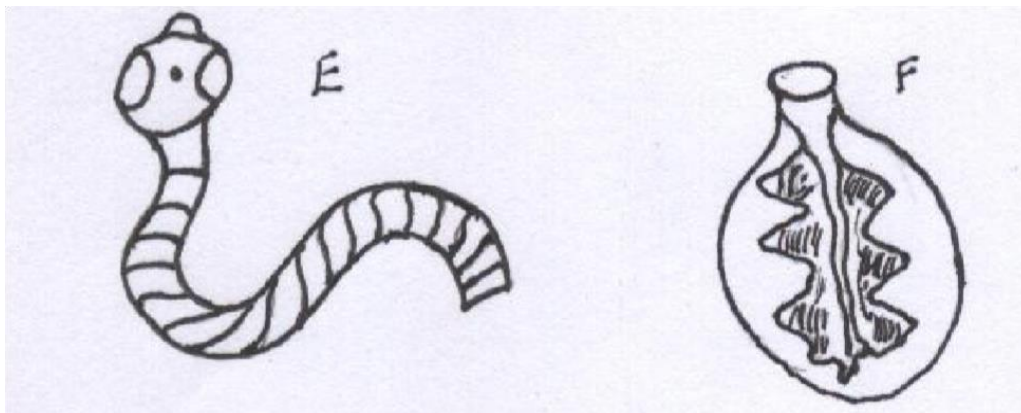
a)**Identify** parasite labeled **E** and **F** (1mk)

E_____

F_____

b) **Name** the organ in which each parasite is commonly found (1mk)

i) Parasite E _____

ii) Parasites F_____

c)**Name** the intermediate host of the parasite labeled **E** (½mk)

_____

_____

d) **State four** control measures of the parasite labeled **F** in livestock production. (2mks)

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19. Below is a diagram of a sheep with some parts labelled J, K and L. Study the diagram and answer the question that follow
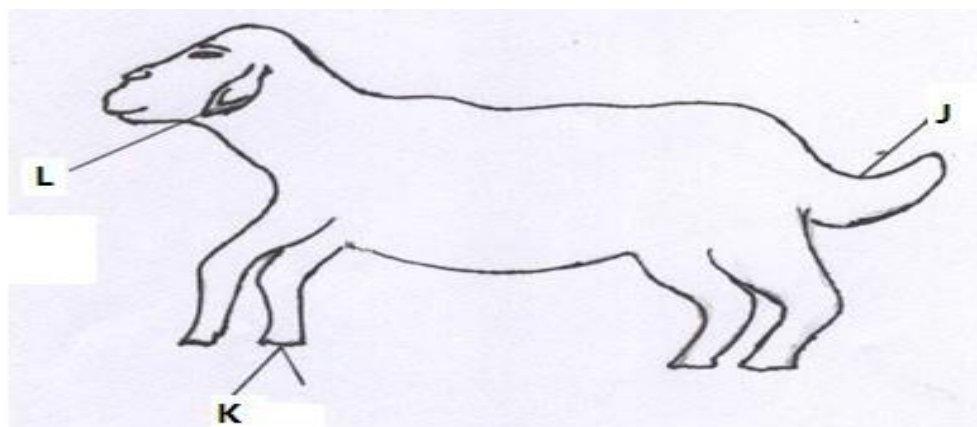
a)Name the operation usually carried out on the part labeled **J** during the early stages of sheep life

(½ mk)

………………………………………………………………………………………………

b) **Give TWO** reasons for carrying out the above operation ie in (a) above (2mks)

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………………………………………………………………………………………………

c)**Name TWO** methods of carrying out the above operation ie (in (a) above). **(1mk)**

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....

d)   Which routine operation is usually carried out on the part labelled K. **(½mk)**

....

e)**Give TWO** reasons for carrying out the above operation i.e (d above). **(1mk)**

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....

f) **Name TWO** methods of identification carried out at the part labeled **L.** **(1mk)**

....

....

20.   Below is a diagram showing the reproductive system of a hens study the diagram and answer the questions that follow
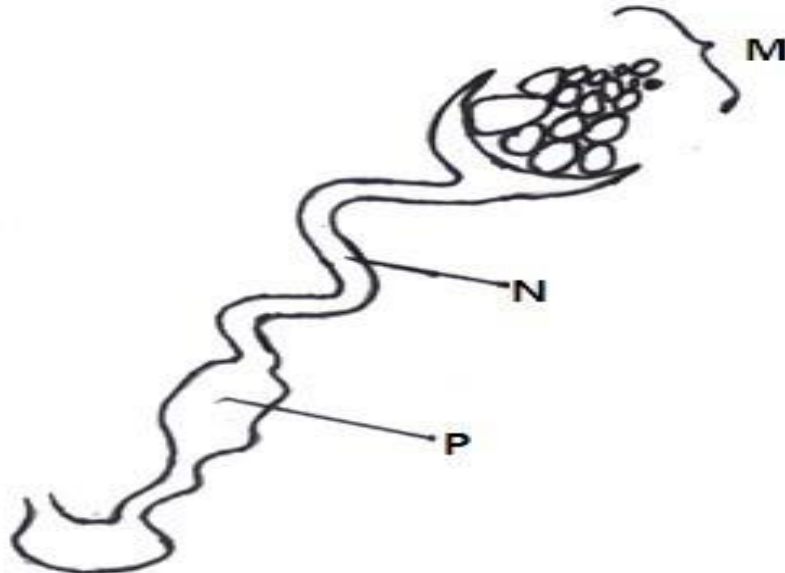
a)**Identify** the parts labeled **M**, **N** and **P** **(1½mks)**

M_____ ___

 N_____ ___

P_____

b)   **State the function** of the parts labeled **N** and **P**   **(2mks)**

Part

N_____

Part

P_____

SECTION C (40 MARKS)

Answer any TWO questions from this section in the spaces provided after question 23

21.   **(a) Describe** the management of piglets from farrowing up to weaning of piglets. **(12mks)**

(b)   **Give FOUR** importance of feeding colostrum to calves.   **(4mks)**

(c)   **State FOUR** causes of cannibalism in poultry production.   **(4mks)**

22.   **(a) State FIVE** advantages of farm mechanization.   **(5mks)**

(b)   **Give FIVE** maintenance practices of a water cooling system of a tractor.   **(5mks)**

(c)   **State the major** structural and functional differences of the diesel fuel system and petrol

 fuel system of tractor engines.   **(10mks)**

23.   (a) **State FIVE** importance of keeping livestock healthy.   **(5mks)**

(b)   Discus milk fever disease in cattle under the following sub-headings

(i)   Cause   **(1mk)**

(ii)   Symptoms   **(8mks)**

(iii)   Control measures   **(3mks)**

 c) **State THREE** qualities of clean and high quality milk   **(3mks)**

KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………….

INDEX NO………………………

SCHOOL……………………………………….

SIGN…………………………………

DATE…………………………………………….

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

565/1

BUSINESS STUDIES

PAPER 1

2 HOURS

INSTRUCTIONS TO CANDIDATES

Answer all questions in the spaces provided in the question paper All your workings to be shown

For examiner's use only

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

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

TOTAL

MARKS

1. **State four** limitation of direct production. **(4mks)**

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2. Highlight **four** roles of an entrepreneur to the economy of a country. 4mks)

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3. A modern office requires a computer to carry out multiple functions. Highlight any **four.**

(4mks)

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4. **Highlight four** reasons why the Mau escarpment is an important Natural resource. **(4mks)**

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5. **State four** reasons why it is important for a business to keep financial Records: **(4mks)**

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6. Highlight the **purpose** of each of the following documents. **(4mks)**

Document	Purpose
a)Delivery note	
b)A debit note	
c)An invoice	
d)A statement of account	

7. Juma a newly employed teacher has joined Mwalimu Sacco in Bungoma. **Outline four** benefits of membership to the society. **(4mks)**

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8. Redraft the following balance sheet correcting any mistakes. **(4mks)**

KIP's

Balance sheet

As at 31/8/2010

	Ksh		Cash	19000
Debtors	12000			
			Stock	12200
Capital	40700	Creditors		
	18000		Coop loan	50000 Bank overdraft
Computers	87500			22000
	158200			103200

9. **Highlight four** measures taken by producers to ensure consumers are protected when using their products. **(4mks)**

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10.   **State four** benefits of a public warehouse to a consumer.   **(4mks)**

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11.   **State four** advantages of using E-mail for communication by a given enterprise.   **(4mks)**

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12.   **Highlight four** reasons why all motor vehicles are required to have insurance cover. **(4mks)**

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13.   The following information relates to MUSIKO traders for the year ended   31/12/2011

            Sales   Ksh800,000
            General expenses   ksh120,000
            Commission income   Ksh40,000
             Margin   20%

Calculate

i) Mark-up percentage   **(2mks)**

ii)   Net profit for the year ended 31/12/2011   **(2mks)**

14.   **State four** importance of computing national income statistics in a country such as Kenya.

(4mks)

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15.   The following table shows the demand for sugar in a certain town between the years 2006
 and 2010

YEAR	Quantity Demanded In Tons
2006	50
2007	70
2008	85
2009	72
2010	65
2011	

State four factors that contributed to the trend in demand for sugar between 2008 and 2010. **(4mks)**

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16.   **State four** reasons why it may be necessary for the Government to encourage new firms to
 be located in the rural areas.   **(4mks)**

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17. You are to enter up the purchases journal and the returns outwards journal from the following details

2011 October   1.credit purchases from Helen sh20,000

2011 October   3. credit purchases from the following; Dan sh12,000,Tom Ksh13,300

 2011 October   5.Goods returned by us to Tom sh300   **(4mks)**

18. Recent data indicates that a large proportion of Kenya's population comprises of the youth the ages of 10 to 20 years. **State four** benefits of this to the country.   **(4mks)**

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19. **State four** reasons why a country may find it necessary to control its imports.   **(4mks)**

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20. **Highlight four** characteristics of money.   **(4mks)**

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21. State four challenges being faced by Kenya in achieving its stated goal of vision 2030. **4mks)**

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22.   Indicate whether the following types of taxes are **direct or indirect.**   **(4mks)**

Type of tax	State
a)Corporation tax	
b)Value added tax	
c)Income tax	
d)Customs duty	

23.   **State four** recent trends adopted by many firms in product promotion.   **(4mks)**

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24.   **State four** classification of goods and services.   **(4mks)**

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25.   **State four** challenges that a business without a plan will encounter in its operations. **(4mks)**

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KCSE 2022 PASSWORD
SERIES 1

NAME……………………………………………… INDEX NO………………………

SCHOOL…………………………………………… SIGN…………………………………

DATE………………………………………………

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

565/2

BUSINESS STUDIES

PAPER 2

TIME: 2 HOURS 30 MINS

INSTRUCTIONS TO CANDIDATES.

1. This paper consist of six questions with section a and b.

*2. Answer only five questions, both **a** and **b** in the writing material provided.*

3. Indicate clearly the questions answered

For examiner's use only

QUESTION	1	2	3	4	5	6
SCORE						

TOTAL	

1. a) Highlight **five** reasons why the government trains business people.　　**(10mks)**

   b)Explain **five** roles that intermediaries play in the distribution of goods and services.　**(10mks)**

2. a) Discuss **six** reasons why many Kenyans are increasingly shopping in supermarkets.　**(12mks)**

   b)The Kenyan government has plans to construct a major seaport at Lamu. **Explain four**

   benefits that may accrue to the country from this new port at Lamu.　　**(8mks)**

3. a) Explain **five** advantages of a public limited company as a form of business.　**(10mks)**

   b)The following balances relate to Msafiri Traders as at 31st December, 2012:

   　　　　Sh.
   Purchases　900,000
   Stock, 1/1/2012　　　230,000 Buildings　1,200,000
   Motor vehicles 750,000
   Returns outwards 50,000
   Debtors　190,000
   Creditors　310,000
   Loan from IDB 600,000
   Cash at hand 130,000
   Cash at bank 270,000
   Drawings　　100,000 Capital　1,840,000
   Net profit　170,000
   Stock, 31/12/2012 280,000
   Expenses (including carriage inwards, shs 150,000)　250,000

   REQUIRED:

   i)　Balance sheet as at 31st December, 2011.　　**(6mks)**

   ii)　Calculate:

   -Mark-up percentage.　　**(2mks)**

   -Return on capital employed.　　**(2mks)**

4. a) Explain five principles that guide the tax system in a country.　　**10mks)**

   b)Labour is one of the basic factors of production. Outline five measures that a business can

   take to increase the prodcutivity of its labour force.　　**(10mks)**

5. a) Describe five ways in which the price of a product can be determined in market. **(10mks)**

b)Explain five benefits of mobile phone money transfer services.   **10mks)**

6. a) On 1st June 2011, Nyati Traders had cash in hand of sh25,000 and sh56,200 at bank. During

month, the following transactions took place:

2011

June 2   Cash sales, sh42,000.

June 5   Received a cheque of sh70,500 from Butala Traders after deducting a 6% cash

discount. June 8   Paid salaries, sh24,000 in cash.

ıne 9   ivuitu settled his account of sh45,000 in cash and was allowed sh 1,80

                  ash discount.

ıne 12   ash sales   sh46,500.

ıne 18   aid Tuiei's debt of sh l00,000 by cheque after deducting 5% cash

                  liscount.

ıne 24   ʼithdrew sh26,000 from the bank for office use.

ıne 30   anked all the cash except sh25,000.

          Prepare a 3-column cashbook and balance it off on 30ᵗʰ June, 2011.   **(10mks)**

b) Outline **five** differences between oligopoly market and perfect competition market situations.

                                                                      (10mks)

KCSE 2022 PASSWORD
SERIES 1

NAME…………………………………………….. INDEX NO………………………

SCHOOL………………………………………… SIGN……………………………

DATE……………………………………………

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

101/1
ENGLISH
PAPER 1
(Functional skills)
TIME: 2HRS

INSTRUCTION TO CANDIDATES

1. *Write your **name** and **index** number in the spaces provided above*
2. ***Sign** and write the **date** of examination in the spaces provided above*
3. *Answer all questions in this paper*
4. *All your answers must be written in the spaces provided*
5. *This question paper has **4** printed pages*
6. *Check to ensure that **all** the pages are printed as indicated and no question is missing*

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	10	
3	30	
TOTAL SCORE		

1. (a) Write a congratulatory note to an aunt who recently graduated from a university in Kenya.

(10mks)

(b) Write an invitation to a close family member to attend a prize giving day where you will also receive an award.

(10mks)

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2. *Read the passage below and fill in each blank space with an appropriate word.*

The house extensively debated the cancellation *1*_____ secondary school examination results for *2*_____schools in Garissa County, and to a lesser extent other parts of Northern Kenya. Members of parliament from the region were *3*_____ satisfied with the explanations from Education Minister George Magoha.

The minister explained how the suspect examination scripts were *4*_____ and *5*_____ checked before the decision was made to cancel the results. He also told the House that investigations have uncovered *6*_____ organized criminal network behind examination fraud some of the ringleaders have been arrested and charged in court.

We support the strongest possible action. Those *7*_____ the cartels must face the full force of the law. Students who hope to *8*_____ ahead by cheating must face the appropriate penalty: Cancellation of *9*_____ results. Parents and teachers who collude to help their young charges to get ahead through crooked means must *10*_____ be exposed, shamed, and punished.

3 a) Underline the silent letters in the following words 2marks

i) Basically ii) Coup iii) Rue iv) Comb

b) Arrange the following words in their appropriate columns   (5mks)

gong, yam, money, jug, yes, throng, curse, cat, bag, nurse, nudge

d ʒ	æ	ŋ	j	ɜː

c)**Who** and **when** would one do the following :   **(2mks)**

Curtsy

Bow

d) *Read the following oral narrative and answer the questions after it*

MONKEY AND CROCODILE

The crocodile asked the monkey to visit him. The monkey asked the crocodile, "How shall I reach your home when I don't know how to swim?" The crocodile told the monkey to jump on his back.

On the way, the crocodile felt hungry and asked monkey, "Can you give me your heart? Because I am feeling hungry." The monkey told the crocodile, "This is what we are going to do: we are going to go back. Because when we become friendly to somebody we leave our hearts at home." Now the monkey told the crocodile, "You see, I am very weak. I cannot be eaten. So we have to go back and I'll get you my heart."

The crocodile agreed that they should twin back. When they reached the shore, the monkey climbed into the mango tree and picked a mango. He threw it and said to the crocodile, "There is the heart," But the mango got into the water. He picked another one, but when the monkey threw this one the crocodile dived into the water.

i) The above narrative was presented to a live audience comprising nursery school children and their parents during a prize giving day. The nursery school children have continued to tell the same narrative to their friends at home. What techniques does the narrator use to make the story memorable and interesting?   **(5mks)**

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ii)   "we are going to go back."

Identify the sound technique used in this   **(1mk)**

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iii)   At the end of the narrative, crocodile dives into the water. Explain why.   **(2mks)**

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e)i) Mention any *three* things you would do just before you attend an interview.   **(3mks)**

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ii) Mention any *two* things one should avoid when being interviewed.   **(2mks)**

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f) i) The following words have be more than one meaning. Use each word in 2 sentences to   show the different meanings   **(4mks)**

a) Wound

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b) Minute

………………………………………………………………………………………………………

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g) You speak to a group of form ones about an issue of concern and you notice during the   talk that many of them are dozing, yawning, fidgeting and silting carelessly. What would this mean to you?

(4mks)

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KCSE 2022 PASSWORD

SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN…………………………………

DATE……………………………………………

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

ENGLISH

PAPER 2

101/2

COMPREHENSION, LITERARY APPRECIATION AND GRAMMAR

TIME: $2\frac{1}{2}$ HOURS

INSTRUCTIONS TO CANDIDATES

a)   *Write your **name** and **index number** in the spaces provided above.*
b)   *Sign and write the date of examination in the spaces provided above.*
c)   *Answer **all** the questions in this paper.*
d)   *All your answers must be written in the spaces provided in this question paper.*
e)   *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*
f)Candidates must answer the questions in English.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	20	
2	25	
3	20	
4	15	
	TOTAL SCORE	

COMPREHENSION

Read the passage and answer the questions.

At the start of this week, 1.3 million people had officially died on account of Covid-19 world-wide. According to the World Health Organisation, another 55 million people had contracted the virus. It was a bitter-sweet week as far as efforts to battle the virus are concerned. On one hand was the great news of a second vaccine with a 95 per cent **efficacy** rate. We also saw leading capitals tighten travel, school ban and other containment measures as the second wave of the pandemic batters many regions

Locally, the situation seems to mirror the global positions, albeit on a less scale, but the numbers of fatalities and infections are rising. We have lost 1,300 compatriots, with 73,000 more having encountered the virus. A casual glance on our neighbourhoods, social media and obituary pages back this, suggesting the official tally might be conservative due to unreported cases. The occasional infection of a public figure reminding us that we are not out of the woods yet. Medics and scientist continue burning the midnight oil to understand Covid-19 better and its symptoms, or lack of them witnessed in different people.

Though clear patterns of symptoms in fever, fatigue, breathing difficulty and loss of taste and smell were identified early, the last few months have seen some patients report a wide range of unexplained signs like longer infection periods and mental challenges such as anxiety, memory problems even depression. Even more intriguing has been the **asymptomatic** cases and cases of certain people in a family contacting the illness while others remain healthy. Add that to the fact that, Africa appears to suffer disproportionately lower rates of infection and mortality, its dilapidated health systems notwithstanding.

It is going to take time before someone can explain this incongruent picture. What is clear in the interim is that our world has dramatically changed, perhaps for the better. Traditionally, countries have spent **colossal** amounts of money building armies to deter global bullies. Now it appears potential threats to humanity must be re-assessed and budgets adjusted. It might be an unknown virus and not a nuclear bomb that will bring the world to its knees. The most secure nations are likely to be those with highly diversified risk registers and commensurate investment to build capacity to confront such.

The early travel bans and overflowing hospitals in the developed world was another rebuke to developing nations to prioritise health. The fact that some regions have been affected more than others is another sobering lesson. With the 21st century having experienced its fair share of protectionist tendencies and inward-looking policies, the pandemic has highlighted the need for concerted effort to ensure no part of the globe is left behind in modernising its health systems. Who knows, a future pandemic, may see the less affected regions serving as refuge centres and provide manufacturing hubs for drugs.

Perhaps it is time to build longer bridges and not towering walls. The pandemic has shone the spotlight on the place and role of global information systems and co-operation among nations. The future will likely be more secure if pandemics and other threats are reported early and containment measures quickly activated. Covid-19 has painfully reminded us of the dividend of tackling a problem early and at source, before it grows wings.

QUESTIONS

1. Why are the efforts to battle the virus bitter-sweet? **(2mks)**

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2. What measures were put in place to contain the 2nd wave of infection? **(2mks)**

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3. Explain these expressions as used in the passage; **(2mks)**

i)… not out of the woods yet

....

....

ii) Burning the midnight oil.

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4. In note form what are the symptoms of Covid-19. **(3mks)**

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5. Identify 2 instances of irony in the passage. **(4mks)**

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6.   In about 40 words, summarise the lessons the pandemic has highlighted.   **(4mks)**

Rough draft

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7.   Explain the meaning of the following words as used in the passage;   **(3mks)**

i. Efficacy

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Asymptomatic

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Colossal

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EXCERPT

Read the excerpt below and answer the questions

He was very helpful and he agreed to accompany them to the village where the girl was, and help them rescue her. They were about to give up the rescue mission after several attempts to distract the guards had failed. But the man from Nasila was able to lure the whole team of guards to a beer party at a nearby village, leaving the girl unguarded.

It was then that the rescue team stuck! Amidst screams of terrified women, the barking of fierce dogs, braying donkeys and mowing of cattle, they entered the hut where the weak and sickly girl lay. They carried her and scampered away fast, like men fleeing from a burning village for three kilometres, to the spot where they had left the vehicle. And they were lucky to have escaped, for immediately they put her onto the vehicle and they themselves had jumped into it, the fierce-looking guards arrived, breathless, but fuming furiously and brandishing all sorts of deadly weapons.

On seeing that they had been outsmarted, they resorted to throwing stones at them, but by then the four-wheel drive vehicle had shot past the range of their missiles.

Regrettably, they learnt later that the man who assisted them so much and enabled them to rescue the girl, was speared to death by those thugs who accused him of tricking them so the girl could be stolen. The girl had, however, arrived safely and she was in fair condition although she was shocked, traumatised and terribly emaciated. She said the girl still found it difficult to walk, for the injuries inflicted to her by the *enkamuratani's olmurunya* had not yet healed.

Minik was thinking of how best to broach the matter in her mind. For a moment she wondered if it was the right time to bring out in the open the matter which she knew would be very painful to the girl who was just recovering from her own trauma. But she knew she could not hide the truth for long. It had to be revealed sooner so that counselling sessions could be put into place soon. Bracing herself appropriately, she quietly and coolly dropped the bombshell.

QUESTIONS

1)   Place this excerpt in its immediate context.   **(4mks)**

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2)   In which place did the rescue team find the weak and sickly girl?   **(1mk)**

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3) 'bracing herself appropriately, she quietly and coolly dropped the bombshell.' What was the bombshell? **(2mks)**

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4) Describe the relationship of the man who assisted the rescue team with the weak and sickly girl. **(2mks)**

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5) Discuss two outstanding themes in the excerpt. **(4mks)**

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6) How is Minik portrayed in this excerpt. **(4mks)**

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7) What is the role of Minik as shown in the rest of the text. **(3mks)**

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8) How has hyperbole been used in the excerpt? **(2mks)**

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9) 'but the man from Nasila was able to lure the whole team of guards to a beer party at a nearby village, leaving the girl unguarded.' Rewrite this sentence beginning with a participle phrase. **(1mk)**

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10) Explain the meaning of the following words as used in the excerpt. **(2mks)**

I. Scampered

....

....

II. Outsmarted

....

....

POETRY (20 MARKS)

Read the poem below and answer the questions that follow

CIVIL WAR

In this land
Graveyards have no markers
For blood flows freely
Into the gutter
Where corpses abide
In restless sleep

In this land
Kinship is long dead
And the insiders prevail
A neighbours hand
In darkness hidden

Stifles yet another victim's light.

In this land
The window blows across the neglected fields
Promising yet another spectacle
Of hollowed eyes and pinched skins
Trudging and falling to the unyielding trains
Of self-destruction

In the air
The whiter dove
Flutter with change
And perhaps
It would be better if this symbol of peace
Were established in the souls of the people
In this land

QUESTIONS

a)   What is the poem about?   **(2mks)**

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b)   Who is the persona in this poem?   **(2mks)**

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c)   Identify any two features of style used in the poem and explain their effectiveness. **(6mks)**

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d) Describe the tone of the poem. **(2mks)**

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e) Explain the significance of the last stanza in relation to the title of the poem. **(2mks)**

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f)Give the meaning of the following lines as used in the poem. **(2mks)**

i) kinship is long dead

....

ii) stifles yet another victims light.

....

g) What is the attitude of the persona towards the subject matter? **(2mks)**

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....

h) What is the mood of the poem? **(2mks)**

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GRAMMAR (15 marks)

1) Rewrite the sentence below filling in the gap with the correct form of the word in brackets.

(1mk)

Annah was scolded for the …………………………. (order) in her room.

2) Punctuate the following sentences appropriately **(1mk)**

In case of any disagreement the teacher said consult the principal

....

....

3) Underline the adjective in the sentence below and state whether it has been used predicatively or attributively. **(1mk)**

Your watch looks expensive

……………………………………………………………………………………………………

……………………………………………………………………………………………………

4) Choose the correct word from those in brackets. **(1mk)**

(All over sudden/ all of a sudden) ……………………………………………………there was a loud bang on the door.

5) Rewrite the following sentence replacing the underlined idiomatic expression **(1mk)**

Advertising revenue in the new financial year has got off to a flying start.

……………………………………………………………………………………………………

……………………………………………………………………………………………………

6) Rewrite the following sentence using one word to replace underlined **(1mk)**

The workers jobs may be put at risk if you purchase the machine

……………………………………………………………………………………………………

7) Supply a question tag to the following statements. **(1mk)**

John hardly ever studies

……………………………………………………………………………………………………

8) Explain the ambiguity in this sentence. **(1mk)**

"Did you see the girls with a telescope?"

……………………………………………………………………………………………………

……………………………………………………………………………………………………

9) Combine the following sentence using a participle phrase **(1mk)**

I had seen the photographs of the place. I had no desire to go there.

……………………………………………………………………………………………………

10) Replace the phrasal verb underlined in the sentence below with one word that means the same. **(1mk)**

They fell out over the decision and hardly speak to each other anymore.

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11) Rewrite the following sentence according to the instructions. (do not alter the meaning) **(1mk)**

This is the singer. Her songs are beautiful (join into one sentence using a relative pronoun)

………………………………………………………………………………………………………

………………………………………………………………………………………………………

12) Rewrite the following sentence using substitution. **(1mk)**

Neema passed with flying colours. Her sister Kinya passed with flying colours too.

………………………………………………………………………………………………………

………………………………………………………………………………………………………

Complete the following sentences with the correct order of adjectives in brackets. **(1mk)**

I used to drive………………………………………………………………………………….

car. (blue, old, German, expensive, saloon)

13) Fill the gaps with a suitable preposition. **(1mk)**

I am vexed……………………………………. her for stealing my books.

14) Fill in the blank spaces with the correct article**. (1mk)**

What is………………………………………………………………. ewe?

KCSE 2022 PASSWORD

SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL…………………………………… SIGN…………………………………

DATE…………………………………………

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

101/3

ENGLISH

PAPER 3

(Imaginative Composition and Essays Based on the Set Texts)

TIME : 2 ½ hours

INSTRUCTIONS TO THE CANDIDATES:

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

b) *Question **one** and **two** are **compulsory**.*

c) *In question **three** choose **only one** of the **optional set text** you have prepared on.*

d) *Where a candidate presents work on more than one optional text. Only the **first one** to appear will be marked.*

For Examiner's Use Only:

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	20	
3	20	
TOTAL SCORE	60	

1.   **Imaginative Composition (Compulsory)**   **(20 marks)**

Either

(a)   Write a story to illustrate the saying:

Do not judge a book by its cover.

Or

(b) Write a story ending: I realized that the shortest way home is not always the quickest.

2.   **Compulsory Set Text**   **(20 marks)**

Henrik Ibsen, A Doll's House

'The price of great sacrifice and love in a marriage is the risk it won't be paid.' Using illustrations from Henrik Ibsen's play A Doll's House, write an essay in support of this statement.

3.   **The Optional Set Texts**   **(20 marks)**

*Answer any **one** of the following three questions.*

Either

(a)   **The Short Story**

Chris Wanjala (Ed.), *Memories We Lost*

Drawing examples from Rolf Schmid's short story "No Need to Lie' write a composition on the topic: "Living with cancer does not have to be a death sentence."

Or

(b)   **Drama**

David Mulwa, *Inheritance*

Illustrating your answer with examples from 'Inheritence,' write an essay entitled:

'The effects of greed.'

Or

(c)   **The Novel**

John Steinbeck, *The Pearl*

Write an essay supporting the proposition that: 'Juana is the embodiment of reason in Steinbeck's novel, 'The Pearl.'

KCSE 2022 PASSWORD

SERIES 1

NAME...

INDEX NO...........................

SCHOOL..

SIGN....................................

DATE..

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

313/1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1

TIME 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) *This paper consists of __SIX__ questions.*

(b) *Answer any __FIVE__ questions in the answer booklet provided.*

FOR EXAMINER'S USE ONLY

QUESTION	1	2	3	4	5	6
MARKS						
TOTAL						

Answer Any FIVE Questions Only

1.a) Outline *seven* attributes of God portrayed in Genesis stories of creation**.** **(7mks)**

b) State *seven* effects of sin on Adam and Eve as is found in Genesis 3**.** **(7mks)**

c)What are the remedies of evil in the traditional African Society? **(6mks)**

2.a) Explain *four* characteristics of a covenant demonstrated in the covenant between God

   and Abraham**.** **(8mks)**

b) Outline *five* instructions given to Abraham by God concerning circumcision. **(5mks)**

c)What lessons do Christians learn from the incident when Abraham was willing to sacrifice his son

  Isaac? **(7mks)**

3.a) Give *five* activities of king Jeroboam that made the Israelites in the Northern kingdom

   to turn away from God. **(5mks)**

b) Explain *five* challenges faced by Prophet Elijah in Israel**.** **(10mks)**

c)Outline *five* teachings that Christians learn about God from the Mt. Carmel contest. **(5mks)**

4. a) What are the similarities between traditional African seers and the Old Testament

   prophets? **(8mks)**

b) Give *seven* reasons why Israel would face God's judgement according to the teaching

   of prophet Amos. **(7mks)**

c)State ways in which Christians can avoid God's punishment. **(5mks)**

5.a) With reference to Jeremiah 1:4-19, state the different responses Jeremiah made to God

   during his call. **(5mks)**

b) Explain *four* factors that led Nehemiah to engage in prayer. **(8mks)**

c) What is the importance of prayer in the life of a Christian today? **(7mks)**

6.a) Explain why the initiates are secluded for a period of time in traditional African communities**.**

(6mks)

b) Identify *seven* changes that have taken place in initiation rites today. **(7mks)**

c)How are the youth prepared for adult life in the church in Kenya today? **(7mks)**

KCSE 2022 PASSWORD

SERIES 1

NAME.. INDEX NO...........................

SCHOOL... SIGN...................................

DATE..

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

313/2

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

TIME 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) *This paper consists of __SIX__ questions.*

(b) *Answer any __FIVE__ questions in the answer booklet provided.*

FOR EXAMINER'S USE ONLY

QUESTION	1	2	3	4	5	6
MARKS						
TOTAL						

Answer any FIVE questions only

1. a) Outline prophet Jeremiah's prophecy about the Messiah. **(8mks)**

b) Give *five* revelations about Jesus by Simon and Anna during the dedication of Jesus in the temple in Luke 2:21-40 **(5mks)**

c) Explain how the Church strengthens family relationships today. **(7mks)**

2. a) Narrate the healing of a man with an evil spirit at Capernaum in Luke 4:31-37 **(8mks)**

b) Outline *five* teachings drawn from the healing of centurion's servant (Luke 7:1 -10) **(5mrks)**

c) State *seven* conditions which Jesus set for His followers. **(7mks)**

3. a) Explain the importance of the transfiguration of Jesus to his disciples. **(8mks)**

b) Outline *seven* teachings of Jesus on escatology. **(7mks)**

c) Give reasons why the resurrection of Jesus is important to Christians. **(5mks)**

4. a) Explain what the teachings of Saint Paul about the body of Christ in 1corinthians 12:14-26 reveals about the unity of believers. **(8mks)**

b) Identify *seven* teachings of Saint Paul about the gift of love in 1cor 13 **(7mks)**

c) State ways in which the celebration of the Lord's Supper was misused at Corinth. **(5mks)**

5. a) Identify ways in which drug abuse could affect a Christian family. **(5mks)**

b) Explain *four* ways in which parents show responsible parenthood in Kenya today**.** **(8mks)**

c) Give *seven* moral values that can be inculcated in marriage in the modern society**.** **(7mks)**

6. a) Outline the steps the church is taking to reduce lawlessness in Kenya today. **(5mks)**

b) Explain *four* ways in which rapid population growth has negatively affected the environment**.**

(8mks)

c) Identify *seven* ways in which Christians help to conserve and protect the environment. **(7mks)**

KCSE 2022 PASSWORD

SERIES 1

NAME………………………………………   INDEX NO………………………

SCHOOL…………………………………   SIGN……………………………

DATE…………………………………………

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

311/1

HISTORY AND GOVERNMENT

Paper 1

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- *This paper consists of three sections A, B and C.*
- *Answer **all** the questions in section A, **three** questions from section B and **two** questions from section C.*
- *Answers to all questions **MUST** be written in the answer booklet provided.*

FOR EXAMINER'S USE ONLY

	QUESTION	SCORE
SECTION A	1 - 17	
SECTION B	18	
	19	
	20	
	21	
SECTION C	22	
	23	
	24	
TOTAL SCORE		

SECTION A (25MARKS)

Answer all the questions in this section.

1. Give **two** examples of oral traditions used in study of Kenya communities. **(2mks)**

2. Name the major dispersal point of Western Bantu. **(1mk)**

3. State **two** social activities of the Oloibon among the Maasai during the pre- colonial period. **(2mks)**

4. Identify **one** Arab dynasty that ruled East African Coastal city states in the 16th century AD. **(1mk)**

5. Name **two** Roman Catholic Missionary groups who started mission stations in Kenya during the colonial period. **(2mks)**

6. State two ways in which the Maasai benefitted from their collaboration with British. **(2mks)**

7. Name **one** Kikuyu Independent Church that emerged in Kenya during the colonial period. **(1mk)**

8. Give **one** reason why Africans were denied equal educational opportunities with other races during the colonial period. **(1mk)**

9. Identify **two** features of African Socialism as spelt out in the Sessional paper No.10 of 1965. **(2mks)**

10. Give the main reason why KANU refused to form the government after 1961 elections. **(1mk)**

11. Give one reason why an aspiring candidate for a parliamentary seat in Kenya must be nominated by a political party. **(1mk)**

12. Give one function of the sergeant-at-arms in Kenyan parliament. **(1mk)**

13. What is contained in the government budget? **(1mk)**

14. State two external factors that led to the formation of many political parties in Kenya in 1991. **(2mks)**

15. Identify the main reason why suspected criminals are tried in a court of law in Kenya. **(1mk)**

16. State two ways in which the institution of presidency promotes national unity in Kenya. **(2mks)**

17. State two ways of becoming a Kenyan citizen. **(2mks)**

SECTION B (45Marks)

Answer any THREE questions from this section.

18. a) Give three reasons which led to the migration of the Cushites from their original homeland into Kenya during the pre-colonial period. **(3mks)**

b) Explain six results of the interaction between the Bantu and Cushites during the pre-colonial period. **(12mks)**

19. a) Name three African communities that exhibited mixed responses to the coming of the British and their occupation of Kenya. **(3mks)**

b) Discuss the results of the Wanga collaboration with the British. **(12mks)**

20. a) Give three roles played by women during the Mau Mau Uprising. **(3mks)**

b) Explain six positive results of the Mau Mau uprising on Africans. **(12mks)**

21. a) Name three treaties that were signed between the British and the Oman Arab rulers at the Coast of East Africa to end slavery and slave trade. **(3mks)**

b) Explain six effects of the coming of Christian missionaries in Kenya. **(12mks)**

SECTION C (30MARKS)

Answer any TWO questions from this section.

22. a) Identify five measures the government has undertaken to provide quality and adequate health services for all Kenyan since independence. **(5mks)**

b) Explain five challenges that face provision of health care services in Kenya. **(10mks)**

23. a) Identify three non-military functions of the Kenya Defence Force. **(3mks)**

b) Describe six measures that have been introduced to improve the work of National Police Service.

(12mks)

24. a) State three functions of the Judicial Service Commission in Kenya. **(3mks)**

b) Explain six functions of the Chief Justice in Kenya. (**12mks**)

KCSE 2022 PASSWORD
SERIES 1

NAME……………………………………… INDEX NO………………………

SCHOOL…………………………………… SIGN………………………………

DATE………………………………………

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

311/2

HISTORY AND GOVERNMENT

Paper 2

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- *This paper consists of three sections A, B and C.*
- *Answer **all** the questions in section **A**, **three** questions from section **B** and **two** questions from section **C**.*
- *Answers to all questions **MUST** be written in the answer booklet provided.*

FOR EXAMINER'S USE ONLY

	QUESTION	SCORE
SECTION A	1 - 17	
SECTION B	18	
	19	
	20	
	21	
SECTION C	22	
	23	
	24	
TOTAL SCORE		

SECTION A (25Marks)

Answer all the questions in this section

1. Give one contribution of archeology in the study of History. **(1mk)**

2. State two distinct features of Homo erectus **(2mks)**

3. Identify one use of bronze in Benin. **(1mk)**

4. Identify one area in Africa where agriculture begun. **(1mk)**

5. State one advantage of using petroleum as a source of energy. **(1mk)**

6. Give two results of the invention of the wheel in Mesopotamia. **(1mk)**

7. Identify two disadvantages of silent trade. **(2mks)**

8. State two factors which undermined company rule in Africa during the 19th century. **(2mks)**

9. State two inventions that improved textile manufacturing industry in Britain in the 19th century.

(2mks)

10. Give the main reason why the Berlin conference was convened in 1884. **(1mk)**

11. State two privileges enjoyed by the assimilated Africans in the four French communes in Senegal.

(2mks)

12. What incident sparked off the First World War? **(1mk)**

13. What was the main contribution of religion in the Maji Maji uprising of (1905 -1907) against

    Germany rule in Southern Tanganyika? **(1mk)**

14. Name two nationalist parties that fought for independence in Mozambique. **(2mks)**

15. Identify one factor that led to the end of the cold war in Europe. **(1mk)**

16. State two ways through which a person becomes a member of parliament in Britain. **(2mks)**

17. Mention two characteristics of the commonwealth countries. **(2mks)**

SECTION B (45MARKS)

Answer any THREE questions

18. a) State five factors which led to the development of early agriculture in Mesopotamia. **(5mks)**

b) Explain five effects of Agrarian Revolution in Western Europe. **(10mks)**

19. a) Identify five advantages of space exploration. **(5mks)**

    b) Explain five economic effects of modern road transport. **(10mks)**

20. a) State three causes of nationalism in South Africa. **(3mks)**

b) Explain six problems faced by African nationalists in South Africa in their struggle for

    independence. **(12mks)**

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21. a) Give five reasons why Lobengula was defeated by the British in the Ndebele war of 1893.**(5mks)**

b) Explain five effects of the British direct rule in Zimbabwe. **(10mks)**

SECTION C (30MARKS)

Answer any TWO questions

22. a) State five factors that facilitated the growth of the Asante Kingdom during the pre-colonial period**. (5mks)**

b) Describe the social organization of the Asante kingdom. **(10mks)**

23. a) State three objectives of Arusha declaration of 1967 in Tanzania. **(3mks)**

   b) Explain six economic challenges which Tanzania has faced since independence**. (12mks)**

24. a)   State five constitutional powers of the president of India. **(5mks)**

   b)Explain five advantages of the federal system of Government in the United States of

   America (USA). **(10mks)**

KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL………………………………………… SIGN…………………………………

DATE…………………………………………….

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

312/1

GEOGRAPHY

PAPER 1

TIME: 2 ¾ HOURS

INSTRUCTIONS TO CANDIDATES

a) *This paper has **two** sections: A and **B.***

b) *Answer **all** the questions in section **A**.*

c) *Answer question **6** and any other **two** questions from Section **B**.*

d) *Each question in section B must be answered in separate foolscaps.*

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

QUESTION	A	6	7	8	9	10	TOTAL
MARKS							

SECTION A
Answer all the questions in this section.

1. The diagram below represents part of the earth's crust which has been subjected to tension forces.
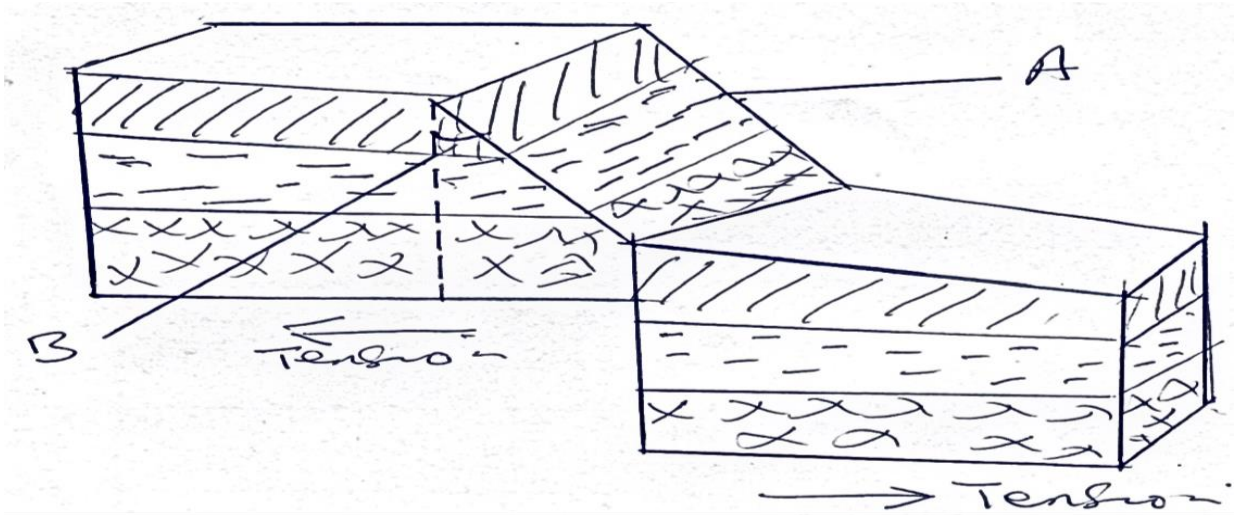
a)i) Name the slope marked A. **(1 mk)**

ii) Name the angle marked B. **(1 mk)**

b) State three ways in which faulting can influence drainage systems. **(3mks)**

2. a) Differentiate between longitudes and latitudes. **(2mks)**

b) If the local time in Nairobi on longitude 37°E is 10.00 a.m. What will the time be at Buchanan Liberian on longitude 10°W? **(3 mks)**

3.a) List four characteristics of desert soils. **(3 mks)**

b) Give two factors that contribute to soil leaching. **(2 mks)**

4. a) Give the two dates of equinoxes. **(2 mks)**

b) State three effects of the rotation of the earth. **(3 mks)**

5. a) Name the type of delta found at the mouth of:

i) River Nile **(1 mk)**

ii) River Omo **(1 mk)**

b) State three conditions necessary for the formation of a delta. **(3 mks)**

SECTION B

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

6. Study the map of Oyugis 1:50,000 (sheet 130/1) provided and answer the following questions.

a) i) State the magnetic declination when this map was drawn. **(1 mk)**

 ii) Give the longitudinal extent of the area converted by the map. **(1 mk)**

b) i) Name the feature found at the grid reference (786399). **(2 mks)**

 ii) Identify two types of vegetation found in the area covered by the map. **(2 mks)**

c) Citing evidence from the map, give four economic activities. **(4 mks)**

d) Students from Tabaka in Oyugis carried out a field study on settlement activities in the area.

i) Identify two settlement patterns they found depicted in the area. **(2 mks)**

 ii) Give two problems they were likely to encounter in their study. **(2 mks)**

e) Draw a rectangle measuring 8cm by 6cm to represent area East of Eastings 90 and between

Northings 36 and 39. On it indicate: **(5 mks)**

i) District boundary
ii) All weather road bound surface
iii) Seasonal swamp

7. a) Differentiate between vulcanicity and volcanicity. **(2 mks)**

b) i) Other than lava plateau, list down four features resulting from extrusive volcanic activity.

(4 mks)

 ii) Describe how lava plateau is formed. **(5 mks)**

 c) Explain four ways in which vulcanicity has influenced human activities in Kenya. **(8 mks)**

 d) You intend to carry out a field study of the landforms around your school.

i) State three objectives of your study. **(3 mks)**

ii) State three methods you would use to record the information you would collect. **(3 mks)**

8. a) Differentiate between weather and climate. **(2 mks)**

 b) Describe the climatic conditions experienced in the Kenya highlands. **(9 mks)**

 c) Explain how the following factors influence climate.
  i) Latitude **(2 mks)**
  ii) Altitude **(2 mks)**
  iii) Aspect **(2 mks)**
  iv) Winds **(2 mks)**

 d) Explain three ways in which vegetation in the Nyika region of Kenya adapts to the climatic

conditions experienced in the area. **(6 mks)**

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9. a) Name three places in East Africa where glaciers are found. **(3 mks)**

  b) Describe how each of the following glacial features are formed.

      i) Arete **(4 mks)**

      ii) Pyramidal peak **(4mks)**

      iii) Hanging valleys **(4 mks)**

  c) Explain five benefits of glaciated landscape to man. **(10 mks)**

10. a) List three processes through which coasts are eroded. **(3 mks)**

  b) State two causes of submergence of coasts. **(2 mks)**

  c) Using well labeled diagrams, explain how each of the following features are formed.

      i) Spit **(4 mks)**

      ii) Blow hole **(4 mks)**

  d) Some students carried out field study on the coastal features found along the coast of Kenya.

  i) State three preparations they made for their study. **(3 mks)**

    ii) List three features formed as a result of coastal emergence that they are likely to have studied.

                                                                  (3 mks)

  e) Explain three ways in which features resulting from coastal emergence are of significance to Kenya. **(6 mks)**

KCSE 2022 PASSWORD
SERIES 1

NAME……………………………………… INDEX NO………………………

SCHOOL………………………………… SIGN…………………………………

DATE……………………………………

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

312 / 2

GEOGRAPHY

PAPER 2

2 HOURS

INSTRUCTIONS TO CANDIDATES.

a) *The paper has two sections A and B*

b) *Answer **all** questions in section A*

c) *Answer question **6** and any other two questions from section **B***

d) *All answers must be written on the answer sheets provided*

QUESTION	A	6	7	8	9	10	TOTAL
MARKS							

SECTION A

Answer all questions in this section

1. a) Name a mineral which occurs in the following places in East Africa.

    i) Kwale in Kenya. **(1 mark)**

    ii) Kilembe in Kenya. **(1 mark)**

b) State three conditions that are necessary for the formation of petroleum. **(3 marks)**

2. a) Differentiate between transport and communication. **(2 marks)**

b) State three causes of the decline of the letter writing as a means of communication in

Kenya. **(3 marks)**

3. a) Outline three physical conditions that favor the cultivation of sugarcane. **(3 marks)**

b) State two uses of the by-products of sugarcane. **(2 marks)**

4. a) State two methods of reclaiming land in Kenya. **(2 marks)**

b) Give three benefits of land reclamation in the Netherlands. **(3 marks)**

5. a) Name three major commodities that Kenya imports. **(3 marks)**

b) Distinguish between internal and international trade. **(2 marks)**

SECTION B

Answer question six and any other two questions

6. The table below shows hypothetical figures of crops grown in Rift Valley province of Kenya in tones. Use it to answer the questions that follow.

Year / Crop	1999	2000	2001
Tea	25	20	35
Coffee	15	15	15
Maize	10	20	25
Bea n s	5	7	18
Total			

a) i) Using a scale of 1 centimetre represents 10 tonnes represent the above data using a compound bar graph. **(8 marks)**

ii) Apart from the compound bar graph, give other two methods that can be used to represent the above data. **(2 marks)**

c) **i)** Which three conclusions can be drawn from the compound bar graph drawn. **(3 marks)**

    ii) Give any two advantages of using a compound bar graph. **(2 marks)**

c) i) Outline four similarities between dairy farming in Kenya and Denmark. **(4 marks)**

    ii) Identify four features of commercial farming in Kenya. **(4 marks)**

d) Name two dairy cattle kept in Kenya. **(2 marks)**

7. a)   i)   Name two major fishing grounds of the world.   **(2 marks)**
ii) List two methods of preserving fish in Kenya.   **(2 marks)**
b) Explain four factors that favour fishing industry in the northern hemisphere(temperate lands)   **(4 marks)**
c) i)   Describe four measures that African countries have undertaken to promote the growth and development of fishing industries.   **(4 marks)**
ii) Give three reasons why most African countries support international law that limit temporal waters of each countries to a distance of 320 Km.   **(3 marks)**
d)   Describe how trawling method is used in fishing.   **(6 marks)**

8. a)   i)   Define the term population.   **(1 mark)**
ii)   Give two primary sources of population data.   **(2 marks)**
iii)   Give the information that can be derived from a population pyramid.   **(3 marks)**
b)   Explain three factors that influence population distribution in East Africa.   **(6 marks)**
c) i)   What is fertility rate in reference to population?   **(2 marks)**
ii)   State four factors that may have led to reduction in fertility rate in Kenya**.**   **(4 marks)**
d) Describe three ways in which the population of Kenya differs from that of Sweden.   **(6 marks)**

9. a)   i)   What is an environmental hazards?   **(2 marks)**
ii)   Apart from floods name four other environmental hazards.   **(4 marks)**
b)   Give four reasons why we need to manage and conserve the environment.   **(4 marks)**
c) i)   Explain three effects of land population on the environment.   **(6 marks)**
ii)   Outline five measures that may be used to combat population.   **(5 marks)**
d)   State four ways in which people are affected by floods.   **(4 marks**)

10.   a)   i)   Differentiate between primary and secondary industries.   **2 marks)**
ii) Give two reasons why some industries are located near the sources of raw materials. **(2 maks)**
iii)In which towns of Kenya are the following industries located.
-   Motor vehicle assembly
-   Oil refinery
-   Paper manufacturing   **(3 marks)**
b)   **i)**   Give five characteristics of cottage industries in India.   **(5 marks)**
ii)   Explain four problems of industrialization in Kenya.   **(8 marks)**
c) State five ways in which industrialization has benefited Kenya.   **(5 marks)**

KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN…………………………………

DATE……………………………………………

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

121/1

MATHEMATICS

PAPER 1

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided above.*

2. *Answer ALL questions in section 1 and only five questions in sec II*

3. *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*

4. *Marks may be given for correct working even if the answer is wrong.*

5. *Non-programmable silent electronic calculators and KNEC mathematical tables may be used except where stated otherwise.*

FOR EXAMINERS USE ONLY

Section 1

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

Grand Total

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

1. Evaluate $\dfrac{-4\{(-4+-15\div 5)+-3-4\div 2\}}{84\div -7+3--5}$ **(3 marks)**

2. Simplify completely the expression: $\dfrac{6x^2y^2-20xy+16}{2x^2y^2-8}$ **(3 marks)**

3. Given that $\cos\theta = \dfrac{3}{5}$, find $\sin\theta - \tan(90^0 - \theta)$ without using tables or calculator.**(2 marks)**

4. Under an enlargement, the images of points A(3,1) and B(1,2) are A^1(3,7) and B^1(7,5).

Without construction, find the centre and the scale factor of enlargement. **(4 marks)**

5.   List all the integral values of x that satisfy the inequalities;   **3 marks)**

$$x - \frac{3}{2} \leq 2x + 1 < 5$$

6.   A bus travelling at an average speed of x km/h left station at 8.15 am. A car, travelling at an average speed of 80km/h left the same station at 9.00 am and caught up with the bus at 10.45 am. Find the value of x.   **(3 marks)**

7.   The interior angle of a regular polygon with 3x sides exceeds the interior angle of another regular polygon having x sides by 40^0. Determine the value of x.   **(3 marks)**

8.   Use squares, cubes and reciprocals tables to evaluate, to 4 significant figures, the

expression:

$$\frac{1}{\sqrt[3]{27.56}} + \frac{3}{(0.071)^2}$$ **(3 marks)**

9.   From a point 20m away on a level ground the angle of elevation to the bottom of the

window is 27^0 and the angle of elevation of the top of the window is 32^0. Calculate the height of

the window.   **(3 marks)**

10.   Solve for x in the equation: $5^{3y+3} + 5^{3y-1} = 125.2$ **(4 marks)**

11. Mr. Kanja, Miss Kanene and Mrs. Nyaga have to mark a form three mathematics contest for 160 students. They take 5 minutes, 4 minutes and 12 minutes respectively to mark a script. If they all start to mark at 9.00 am non-stop, determine the earliest time they will complete the marking. **(4 marks)**

12. Evaluate $4.4\dot{1} - 0.\dot{2}\dot{1}$ **(2 marks)**

13. Two similar cylinders have diameter of 7cm and 21cm. If the larger cylinder has a volume of $6237cm^3$, find the heights of the two cylinders. (take $\pi = \frac{22}{7}$) **(3 marks)**

14. The cost of providing a commodity consists of transport, labour and raw materials in the ratio 8:4:12 respectively. If the transport cost increases by 12%, labour cost by 18% and raw materials by 40%, find the percentage increase of producing the new commodity. **(3 marks)**

15. Given that $4p - 3q = \begin{pmatrix} 10 \\ 5 \end{pmatrix}$ and $p + 2q = \begin{pmatrix} -14 \\ 15 \end{pmatrix}$, find value of **p** and **q** **(4 marks)**

16. In the figure below ABCDE is a cross-section of a solid. The solid has a uniform cross-section. Given that AP is an edge of the solid, complete the sketch showing the hidden edges with a broken lines. **(3 marks)**
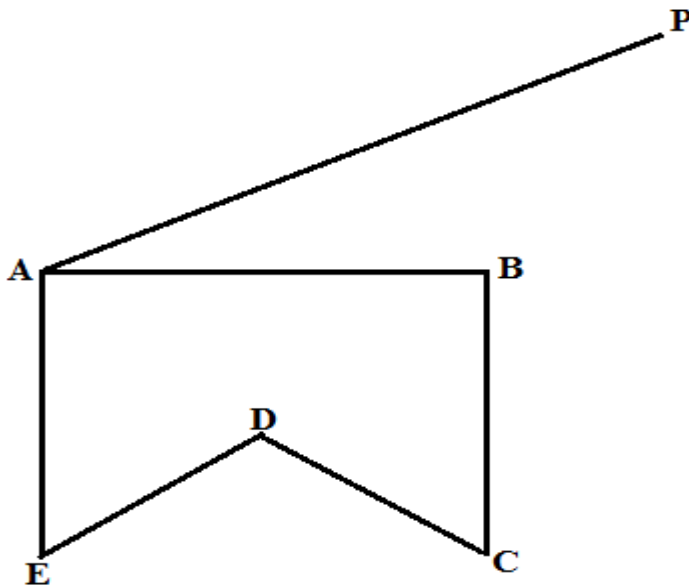
SECTION II (50 Marks)

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

17. The figure below represents a sector of a circle radius r units. The area of the sector is 61.6 cm² and the length of the arc AB is one tenth of the circumference of the circle from which the sector was obtained. (Take $\pi = \frac{22}{7}$)
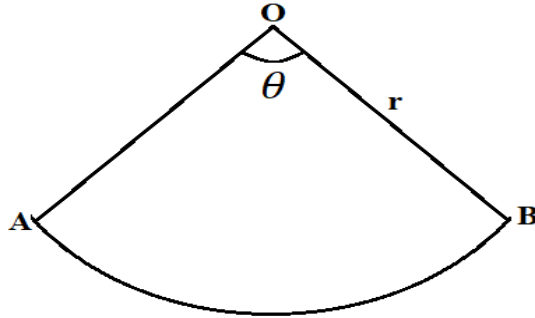
a) Calculate;

i) the angle θ subtended by the sector at the centre. **(2 marks)**

ii) The radius r of the circle. **(3 marks)**

b) If the sector above is folded to form a cone;

i) Calculate the base radius of the cone. **(2 marks)**

ii) The volume of the cone. **(3 marks)**

18. Two factories A and B produce both chocolate bars and eclairs. In factory A, it costs Kshs x and Kshs y to produce 1 kg of chocolate bars and 1 kg of eclares respectively. The cost of producing 1 kg of chocolate bars and 1 kg of eclairs in factory B increases by the ratio 6:5 and reduce by the ratio 4:5 respectively.

a) Given that it costs Kshs 460 000 to produce 1 tonne of chocolate bars and 800kg of eclares in factory A and Kshs 534 000 to produce the same quantities in factory B, form two simplified simultaneous equations representing this information. **(3 marks)**

b) Use matrix method to find the cost of producing 1 kg of chocolate bars and 1 kg of eclaires in factory A. **(5 marks)**

c) Find the cost of producing 100 kg of chocolate bars and 50 kg of eclaires in factory B. **(2 marks)**

19. The vertices of triangle ABC are A(6,2), B(8,2) and C(6,0).

a) On the grid provided below, draw triangle ABC. **(1 mark)**
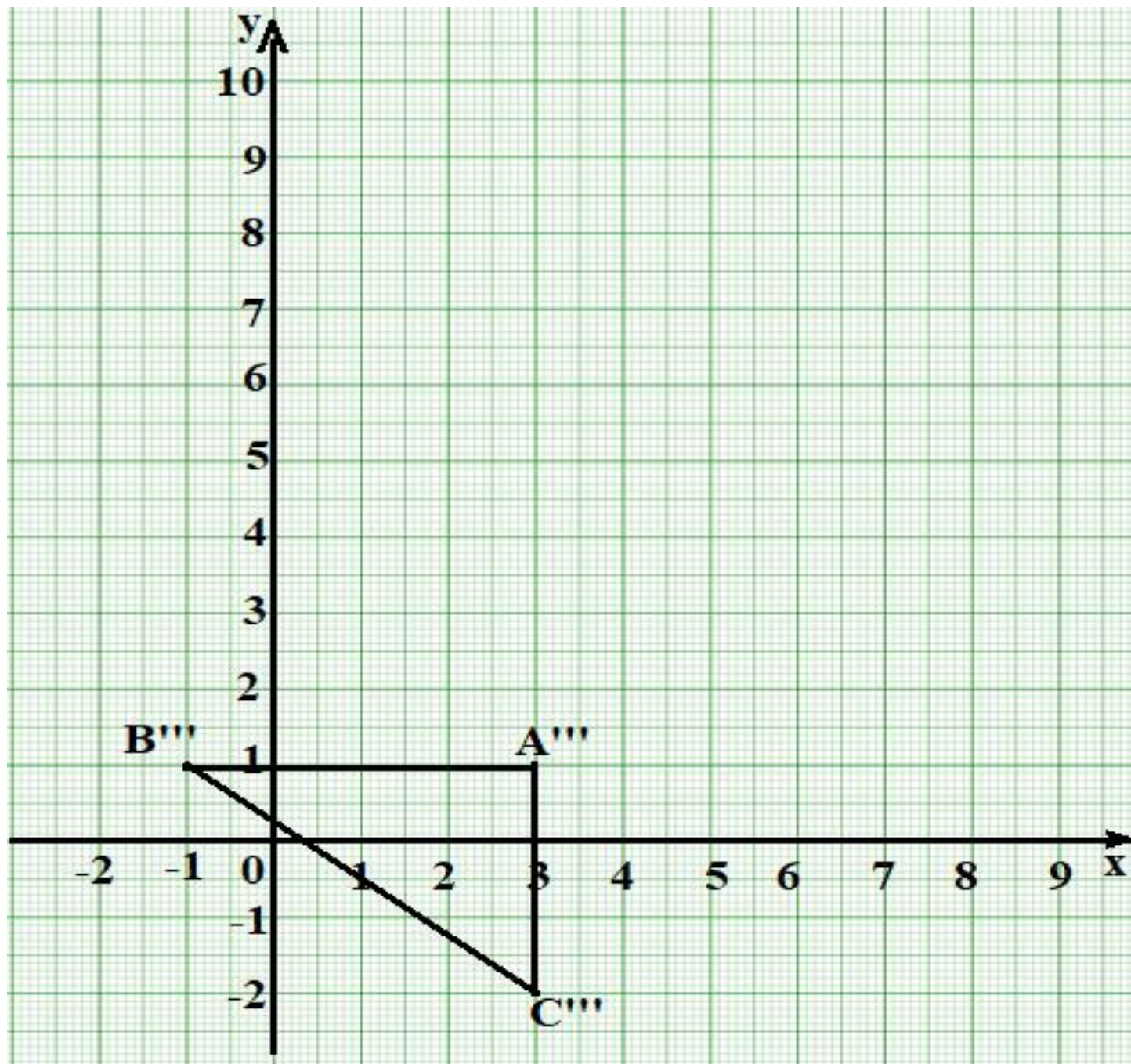
b) Triangle A'B'C' is the image of triangle ABC under a reflection in the line $y = x$. On the same grid draw triangle A'B'C' and state its coordinates **(2 marks)**

c) Triangle A"B"C" is the image of triangle A'B'C' under and enlargement scale factor 2 about the centre (-1,9). On the same grid, draw triangle A"B"C" and states its coordinates.(2 marks)

d) By construction, find and write down the co-ordinates of the centre and angle of rotation which can be used to rotate triangle A"B"C" onto triangle A'''B'''C''' shown on the grid above.

(3 marks)

e) State any pair of triangles that are:

i) Oppositely congruent. (1 mark)

ii) Directly congruent. (1 mark)

20. The figure below shows a velocity-time graph of an object a which accelerates from rest to a velocity of V ms^{-1} then decelerated to rest in a total time of 54 seconds.
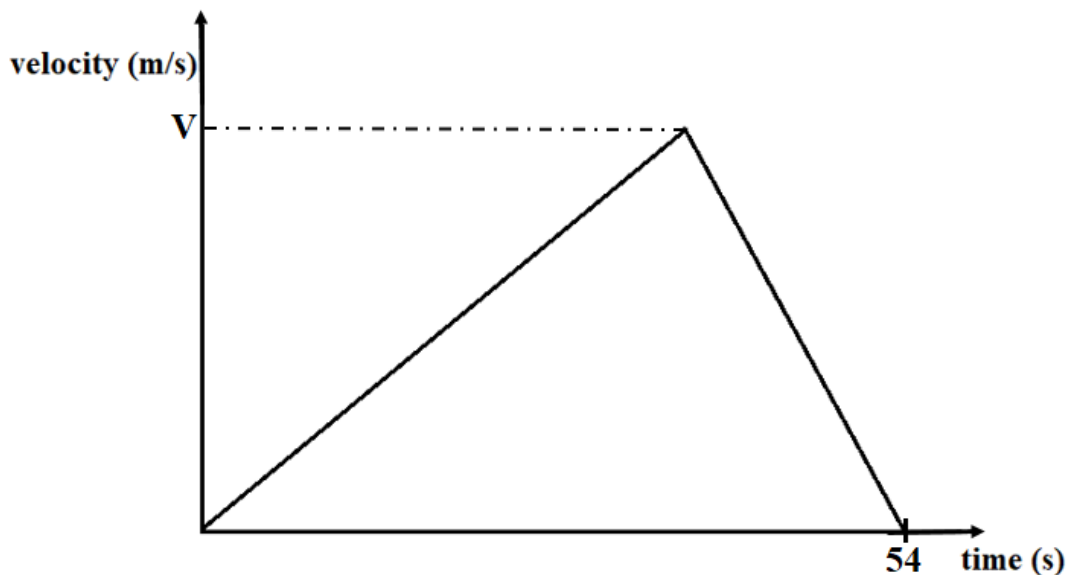
a)   If it covered a distance of 810 metres;

i)   Find the value of V.   **(2 marks)**

ii)   Calculate its deceleration, given that its initial acceleration was $1\frac{2}{3}ms^{-2}$ **(2 marks)**

b)   A bus left town X at 10.45 am and travelled toward town Y at an average speed of 60 km/h. A car left town X at 11.45 am on the same day and travelled along the same road toward Y at an average speed of 100km/h. The distance between town X and town Y is 500km.

i)   Determine the time of the day when the car overtook the bus.   **(3 marks)**

ii)   Both vehicles continued towards town Y at their original speeds. Find how long the car had to wait in town Y before the bus arrived.   **(3 marks)**

21. The masses to the nearest kilogram of some students were recorded in table below.

Mass(kg)	41-50	51-55	56-65	66-70	71-85
Frequency	8	12	16	10	6
Height of rectangle					0.2

a) Complete the table above to 1 decimal place. **(2 marks)**

b) On the grid provided below, draw a histogram to represent the above information. **(3 marks)**
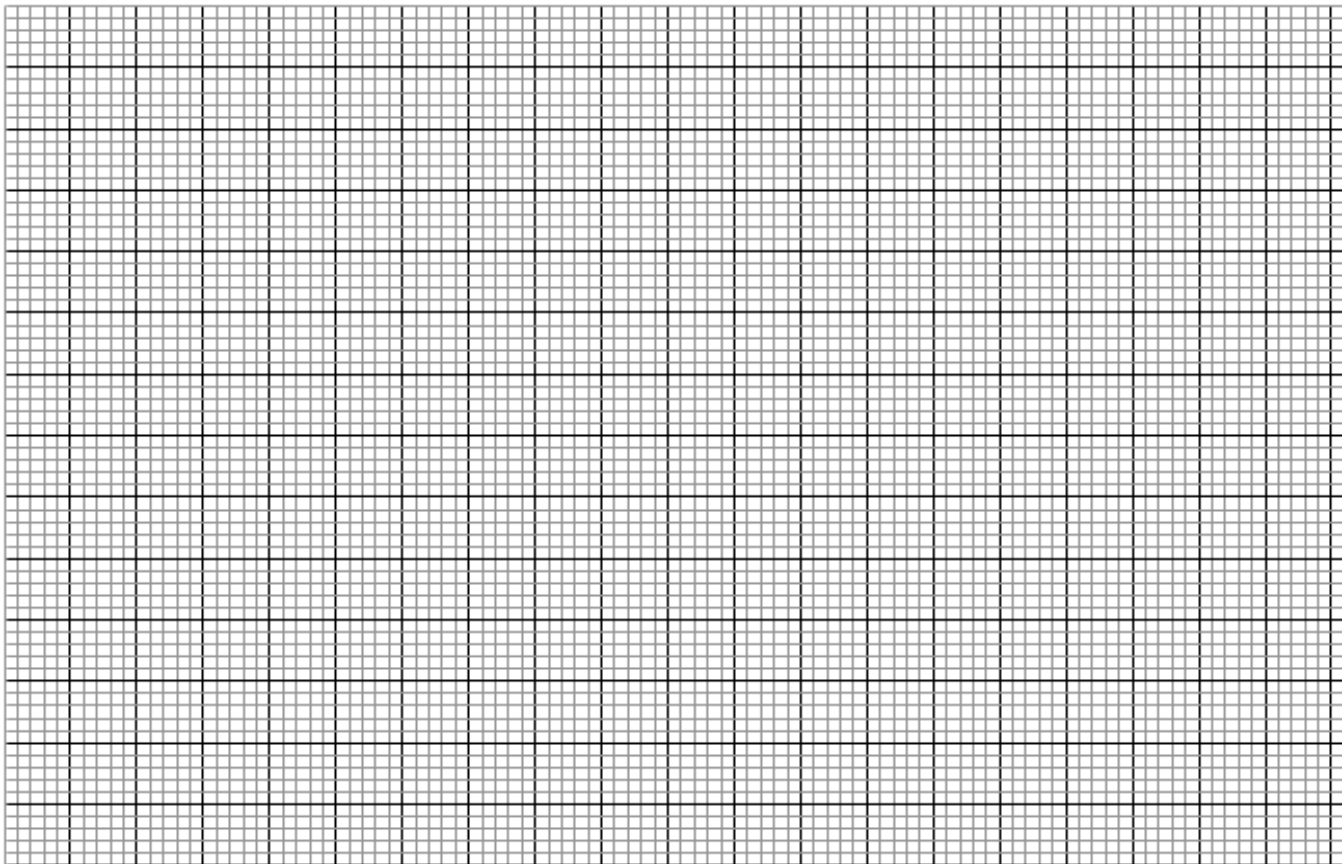
c) Use the histogram to:

i) State the class in which the median mark lies. **(1 mark)**

ii) Estimate the median mark. **(2 marks)**

iii) The percentage number of students with masses of at least 74kg. **(2 marks)**

22. (a) a straight line L_1 whose equation is $9y - 6x = -6$ meets the x-axis at Z. Determine the coordinates of Z. **(2 marks)**

(b) A second line L_2 is perpendicular to L_1 at Z. Find the equation of L_2 in the form $ax + by = c$, where ,b and c are integers. **(3 marks)**

(c) a third line L_3 passes through the point (2,5) and is parallel to L_1. Find:

i) The equation of L_3 in the form $ax + by = c$, where a, b and c are integers. **(2 marks)**

ii) The coordinate of point R at which L_2 intersects L_3. **(3 marks)**

23. In the diagram below, the coordinates of points O, P and Q are (0,0), (2,8) and (12,8) respectively. A is a point on **OQ** such that 4**OA**=3**OQ**. Line **OP** produced to R is such as **OR**=5**OP**.
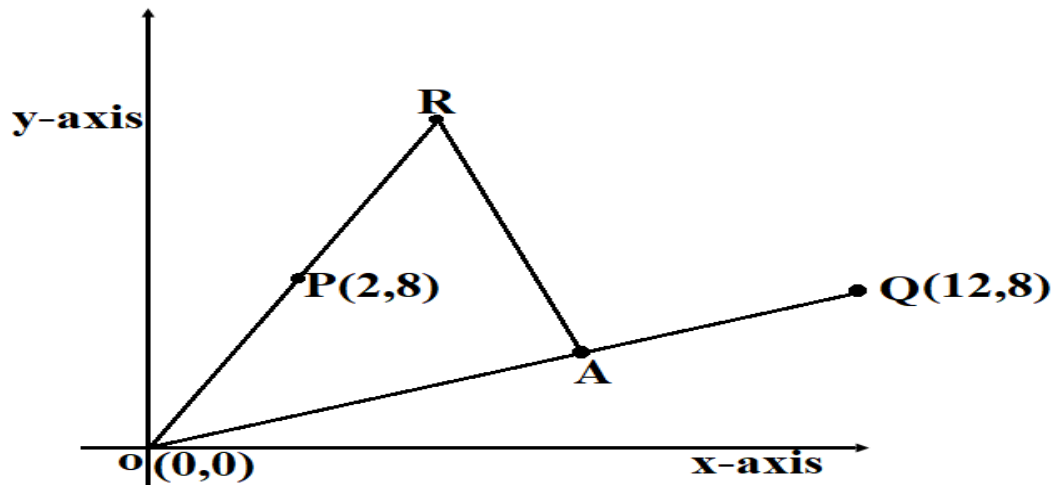
a) Find vector **RA**. (3 marks)

b) Given that point L is on **PQ** such that **PL**: **LQ**=12:5, find vector **RL**. (4 marks)

c) Show that R, L and A are collinear. (2 marks)

d) Find the ratio of **RL**:**LA**. (1 marks)

24. Five points, P, Q, R, V and T lie on the same plane. Point Q is 53km on the bearing of 055^0 of P. Point R lies 162^0 of Q at a distance of 58km. Given that point T is west of P and 114km from R and V is directly south of P and S40^{0}E from T.

a) Using a scale of 1:1,000,000, show the above information in a scale drawing. **(3 marks)**
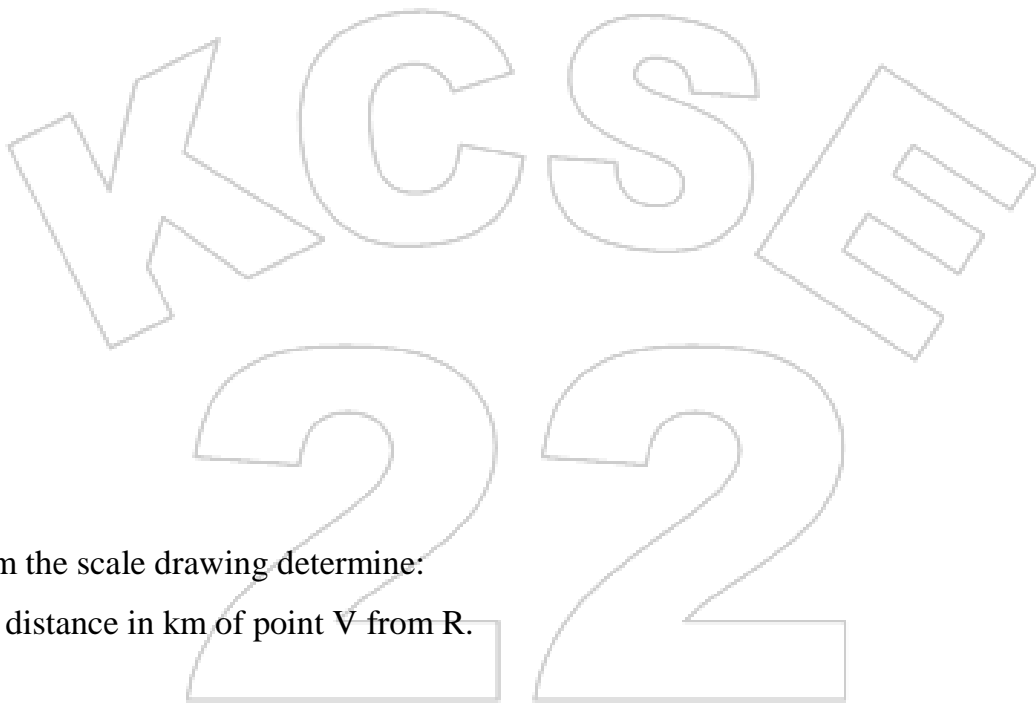
b) From the scale drawing determine:

i) The distance in km of point V from R. **(2 marks)**

ii) The bearing of V from Q. **(2 marks)**

iii) Calculate the area enclosed by the points PQRVT in squares kilometers. **(3 marks)**

KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN…………………………………

DATE……………………………………………

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

121/2

MATHEMATICS ALT 'A'

PAPER 2

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index in the spaces provided above.*
2. *Answer ALL questions in section 1 and only five questions in sec II.*
3. *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*
4. *Marks may be given for correct working even if the answer is wrong.*
5. *Non-programmable silent electronic calculators and KNEC mathematical tables may be used except where stated otherwise.*

FOR EXAMINERS 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

Grand Total

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SECTION I (50Marks)

Answer all questions in this section

1. Use logarithms to evaluate **(4 Marks)**

$$\sqrt[3]{\frac{45.3 \; x \; 0.00697}{0.534}}$$

2. Form the quadratic equation whose roots are $x = -\frac{5}{3}$ and $x = 1$ **(2 Marks)**

3. W varies directly as the cube of x and inversely as y. Find W in terms of x and y given that $W = 80$ when $x = 2$ and $y = 5$. **(2 Marks)**

4. A cold water tap can fill a bath in 10 minutes while a hot water tap can fill it in 8 minutes. The drainage pipe can empty it in 5 minutes. The cold water and hot water taps are opened for 4 minutes. After four minutes all the three taps are opened. Find how long it takes to fill the bath. **(3 Marks)**

5. Object A of area 10cm² is mapped onto its image B of area 60cm² by a transformation. Whose matrix is given by p = $\begin{pmatrix} x & 4 \\ 3 & x+3 \end{pmatrix}$. Find the positive values of x **(3 Marks)**

6. Make P the subject of the formula in L $= \frac{2}{3}\sqrt{\frac{x^2 - PT}{y}}$ **(3 Marks)**

7. (a) Expand the expression $\left(1 + \frac{1}{2}x\right)^5$ in ascending order powers of x, leaving the coefficients as fractions in their simplest form. **(2 Marks)**

(b) Use the first three terms of the expansion in (a) above to estimate the value of $(1.05)^5$ **(2 Marks)**

8. By rounding each number to the nearest tens, approximate the value of $\frac{2454 \ x \ 396}{66}$

Hence, calculate the percentage error arising from this approximation to 4 significant figures.**(3 Marks)**

9. Without using a calculator or mathematical tables, express $\frac{\sqrt{3}}{1 - Cos \ 30^0}$ in surd form and simplify

(3 Marks)

10. Kasyoka and Kyalo working together can do a piece of work in 6 days. Kasyoka, working alone takes 5 days longer than Kyalo. How many days does it take Kyalo to do the work alone? **(3 Marks)**

11. The second and fifth terms of a geometric progression are 16 and 2 respectively. Determine the common ratio and the first term. **(3 Marks)**

12. A particle moves along a straight line AB. Its velocity V metres per second after t seconds is given by

v = t² − 3t + 5

Its distance from A at the time t = 1 is 6 metres.

Determine its distance from A when t = 3 **(3 marks)**

13. On the triangle PQR, draw a circle touching PR, QP produced and QR produced. **(3 Marks)**
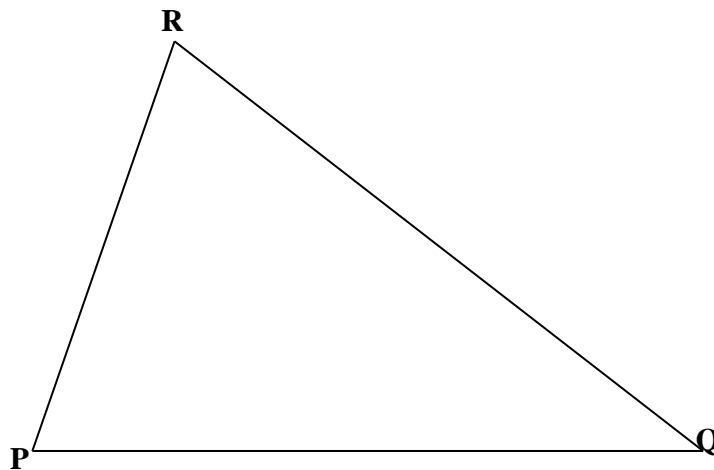
14. Two containers havebase area of 750cm^2 and 120cm^2 respectively. Calculate the volume of the larger container in litres given that the volume of the smaller container is 400cm^3. **(3 Marks)**

15. Solve for x in the equation

$2 \sin^2 x - 1 = \cos^2 x + \sin x$, where $0^0 \leq x \leq 360^0$. **(4 Marks)**

16. Find the radius and the coordinate of the centre of the circle whose equation is

$2x^2 + 2y^2 - 3x + 2y + \frac{1}{2} = 0$ **(4 marks)**

SECTION II (50 MARKS):
Answer Five Questions In This Section.

17. A bag contains 5 red, 4 white and 3 blue beads. Two beads are selected at random.

(a) Draw a tree diagram and list the probability space. **(3 Marks)**

(b) Find the probability that

(i) The last bead selected is red. **(2 Marks)**

(ii) The beads selected were of the same colour **(2 Marks)**

(iii) At least one of the selected beads is blue **(3 Marks)**

18. The figure below shows a circle centre O in which line QOT is a diameter. Angle QTP $= 46^0$,

angle TQR = 75^0 and angle SRT = 38^0, PTU and RSU are straight lines.
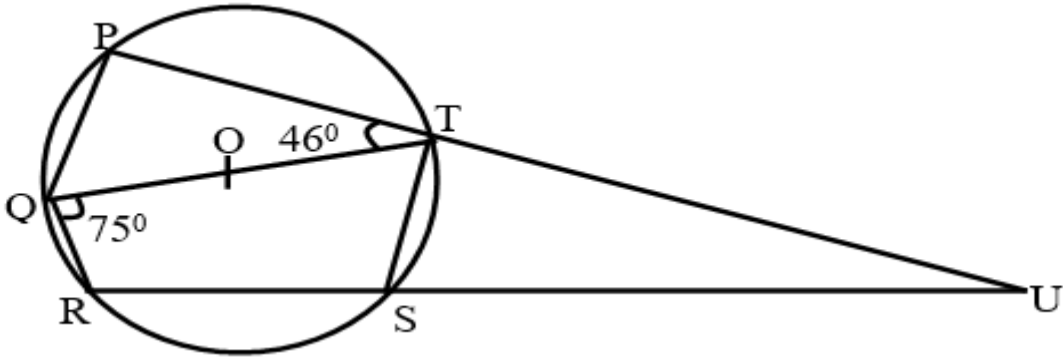
Determine the following, giving reasons in each case:

(a) angle RST (2 Marks)

(b) angle SUT (2 Marks)

(c) angle PST (2 Marks)

(d) obtuse angle ROT (2 Marks)

(e) angle SQT (2 Marks)

19. P, Q and R are three villages such that PQ = 10km, QR = 8km and PR = 4km where PQ, QR and PR are connecting roads.

(a) Using a scale of 1cm rep 1 km, locate the relative positions of the three villages **(2 Marks)**

(b) A water tank T is to be located at a point equidistant from the three villages. By construction locate the water tank T and measure its distance from R. **(3 Marks)**

(c) Determine the shortest distance from T to the road PQ by construction **(2 Marks)**

(d) Determine the area enclosed by the roads PQ, QR and PR by calculation **(3 Marks)**

20. For a sample of 100 bulbs, the time taken for each bulb to burn was recorded. The table below shows the result of the measurements.

Time (in hours	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74
Numberof bulb	6	10	9	5	7	11	15	13	8	7	5	4

(a) Using an assumed mean of 42, calculate

(i) the actual mean of distribution **(4 Marks)**

(ii) the standard deviation of the distribution **(3 Marks)**

(b) Calculate the quartile deviation **(3 Marks)**

21. A plane leaves an airport P (10^0S, 62^0E) and flies due north at 800km/h.
(a) Find its position after 2 hours **(3 Marks)**

(b) The plane turns and flies at the same speed due west. It reaches longitude Q, 12^0W.
  (i) Find the distance it has traveled in nautical miles. **(3 Marks)**

  (ii) Find the time it has taken (Take $\pi = \frac{22}{7}$, the radius of the earth to be 6370km and 1 nautical mile to be 1.853km) **(2 Marks)**

(c) If the local time at P was 1300 hours when it reached Q, find the local time at Q when it landed at Q **(2 Marks)**

22. PQRSV is a right pyramid on a horizontal square base of side 10cm.The slant edges are all 8cm long. Calculate
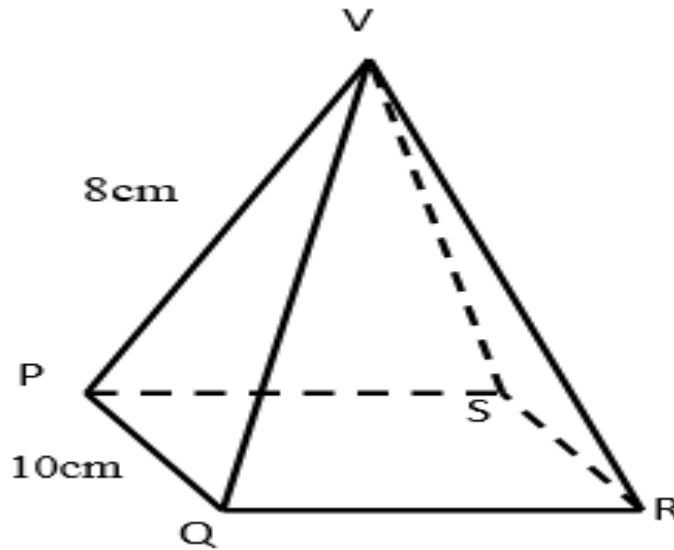
(a) The height of the pyramid **(2 Marks)**

(b) The angle between
(i) Line VP and the base PQRS **(2 Marks)**

(ii) Line VP and line RS **(2 Marks)**

(iii) Planes VPQ and the base PQRS **(2 Marks)**

(c) Volume of the pyramid **(2 Marks)**

23. Complete the table below for the functions y = sin 3 θ and y = 2 Cos (θ + 40⁰)   **(2 Marks)**

θ^0	0^0	10^0	20^0	30^0	40^0	50^0	60^0	70^0	80^0	90^0
3 Sin 3θ	0	1.50		3.00			0.00			-3.0
2 Cos (θ + 40⁰)	1.53	1.29			0.35			-0.69		-1.29

(a) On the grid provided, draw the graphs of Y = 3 Sin 3 θ and y = 2 Cos (θ + 40⁰) on the same axis. Take 1 cm to represent 10⁰ on the x-axis and 4 cm to represent 2 unit on the y – axis.   **(5 marks)**
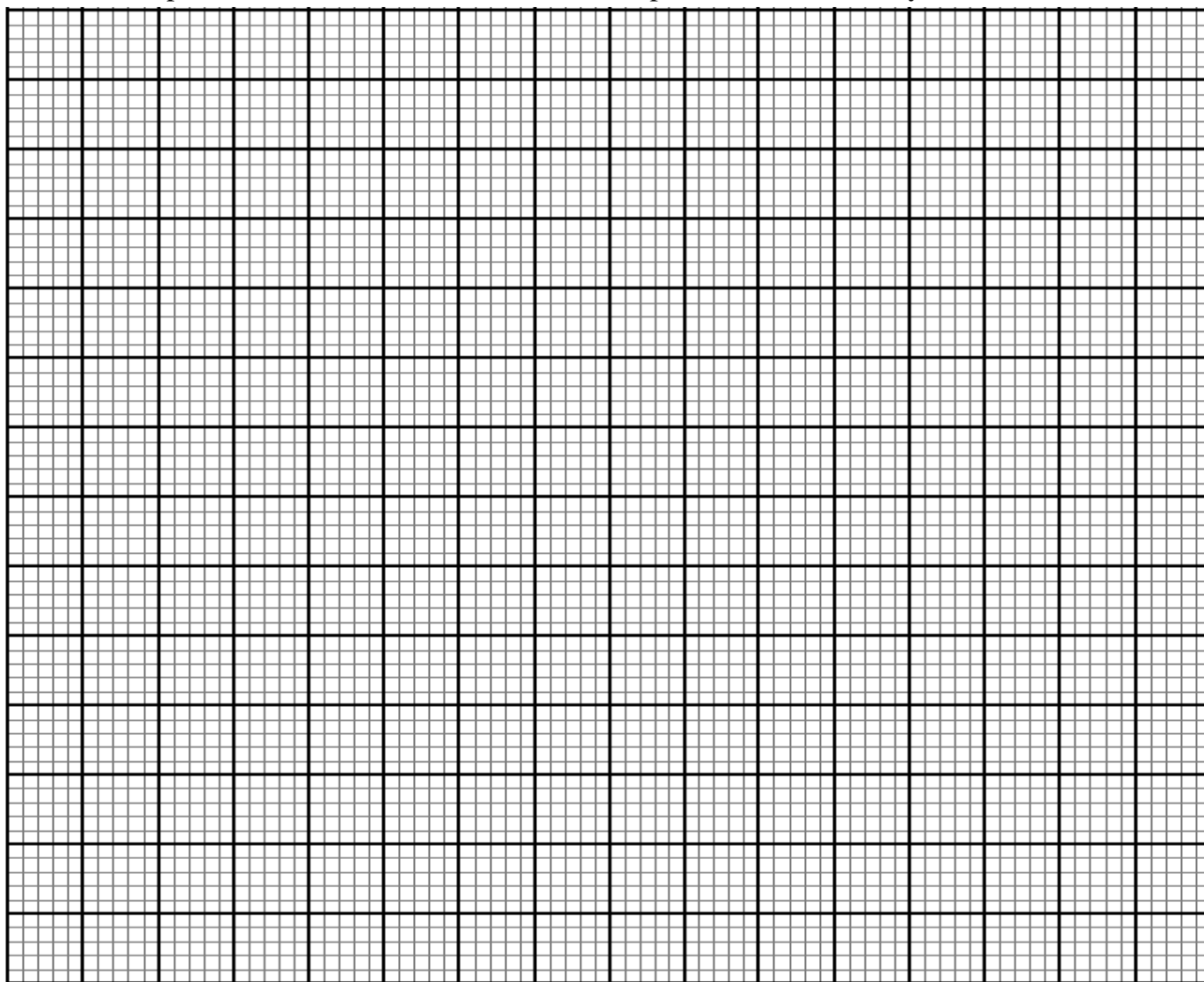
(b)   From the graph find the roots of the equation.

(i) $\frac{3}{4}$ Sin 3θ = $\frac{1}{2}$ Cos (θ + 40⁰)   **(2 Marks)**

(ii) 2 Cos $(0 + 40^0) = 0$ in the range $0 \leq \theta \leq 90^0$ **(1 Mark)**

24. The gradient function of a curve is given by the expression $2x + 1$. If the curve passes through the point (-4, 6)

(a) Find:

(i) The equation of the curve **(3 Marks)**

(ii) The values of x, at which the curve cuts the x-axis **(3 Marks)**

(b) Determine the area enclosed by the curve and the x –axis **(4 Marks)**

KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL………………………………… SIGN…………………………………

DATE…………………………………………

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

451/1

COMPUTER STUDIES

PAPER 1
(THEORY)
TIME 2½ HOURS.

INSTRUCTION TO CANDIDATES

•*Write your name and index number in the spaces provided above*

•*This paper consists of **Two** sections A and **B***

•*Answer **ALL** questions in section A*

•*Answer question16 and any other **THREE** questions from section **B***

•*All answers should be written in the spaces provided on the question paper*

FOR EXAMINER'S USE ONLY

SECTION	QUSTIONS	CANDIDATE'S SCORE
A	1 -15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A   (40 MARKS)
Answer ALL the questions in this section

1. State the technology used in the following computer generations   **(2mks)**

i)4th generation:

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ii)1st generation:

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iii)2nd generation:

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iv)3rd generation:

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2. Outline **two** areas that should be considered when categorizing software.   **(1mk)**

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3. State any **three** disadvantages of a magnetic diskette.   **(3mks)**

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4. a) Define the data processing.   **(1mk)**

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  b) Explain **two** characteristics of good information.   **(2mks)**

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5.Distinguish between data verification and data validation. **(2mks)**

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6.Describe the following menu tools as used in Ms. Word **(2mks)**

Print layout:

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Web layout:

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7.Define the following terms as used in mail merging **(4mks)**

i) Main document:

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ii) Data source

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8. a) Difference between real –time system and online systems. **(2mks)**

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b) Explain how information and communication technology has contributed to teaching and

learning in schools. **(2mks)**

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9. a) State the use of the following network devices. **(2mks)**

i) Network interface cards

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ii) Routers

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 iii) Distinguish between thinnet and thicknet coaxial cables. **(2mks)**

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10. Convert (111.010_2) to decimal number. **(3mks)**

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11. Explain the type of errors that are likely to exist in a program? **(4mks)**

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12. State **three** ways in which **ICT** can be used in industrial control. **(3mks)**

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13. State **two** reasons why it is necessary to have well connected and proper cables in a

computer lab **(2mks)**

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14. What do you understand by the term '**soft system**'' in a system development? **(1mk)**

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15. What is a relational database **(1mk)**

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SECTION B (60 MARKS)

Answer question 16 and any other THREE questions from this section in the spaces provided

16. Mumias sugar company pays casual employees based on the number of hours worked as follows

Less than 10 hours @ khs.100/= per hour

Up to 15 hours @ khs150/= per hour

More than 15 hours @khs200/= /per hour

a) Write a pseudo code to input the name, rate hours worked. The pseudo code should output the name, hours worked and the wage paid. **(6mks)**

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b)   Draw a flowchart for the above pseudo code .   **(5mks)**

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c) Write brief notes on structured programming   **(4mks)**

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17 a) List **four** characteristics of a system   **(2mks)**

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b)Give any **three** circumstances that may make an organization to develop a new information system

     (3mks)

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c) Study the spreadsheet below and answer the questions that follow

	A	B	C	D
1	WESTLINK COMPUTER BOOKS CENTRE			
2	TITLE	PRICE	NO. SOLD	COST
3	Computer longhorn book2	320	25	
4	Visual basic (6) turbo	820	21	
5	Computer longhorn book4	350	100	
6	Computer science	900	12	
7	Computer Applications	845	36	
8	Computer hardware	1250	10	
9	Computer software	1250	27	
10				

i) Write down the formula used to find the price of the cheapest book.   **(1mk)**

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ii) Write down the formula used to determine the total sales for the book titled' computer applications

(1mk)

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iii)   Write down the formula used determine the average price of the all books   **(2mks)**

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d) State any **four** advantages of using an electronic spreadsheet as compared to a traditional

   spreadsheet   **(2mks)**

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e)Differentiate between a column chart and a bar chart as used in spreadsheets   **(4mks)**

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f) Define the term gutter in relation to column setting in DTP   **(1mk)**

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18. a) Name and describe four main application areas of artificial intelligence in ICT   **(12mks)**

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e)Differentiate between a column chart and a bar chart as used in spreadsheets   **(4mks)**
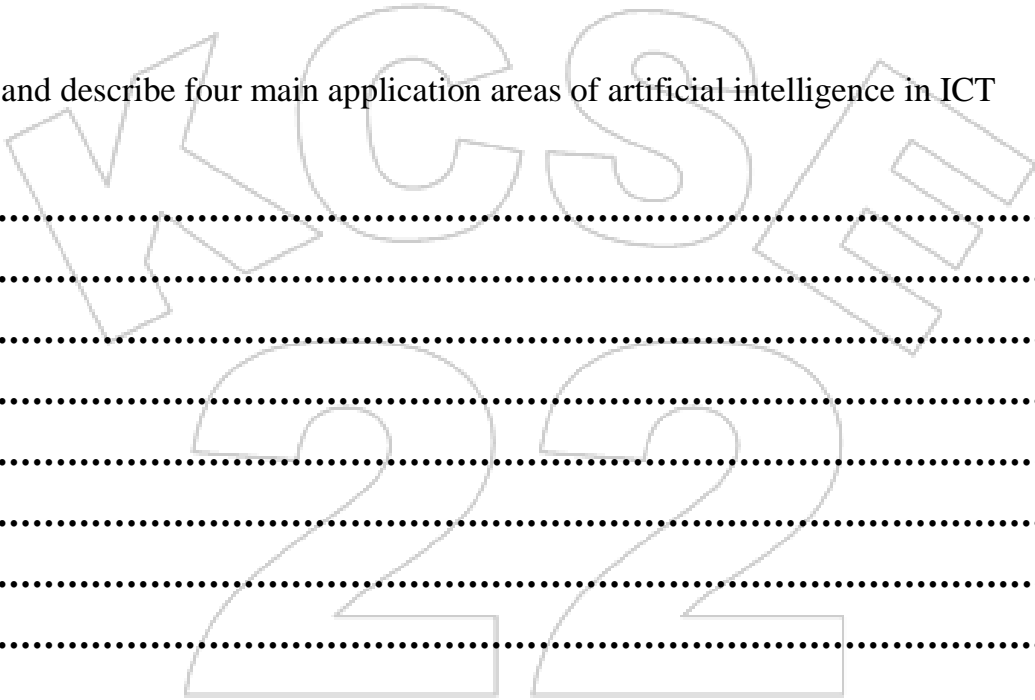
b) State **three** advantages of automated production in manufacturing industries (3mks)

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19 a) Describe any **two** roles of the following career opportunities in the ICT field. (8mks)

i) Systems analyst

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ii) Information system manager

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iii) Network administrator

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iv) Computer trainer

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b)   Distinguish between a primary key and a foreign key as used in DBMS. (2mks)

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c)   What do the term header and footer mean? (2mks)

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d) What do you understand by the terms attenuation and baseband signal. **(2mks)**

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20. a) Define the following terms. **(3mks)**

i) Record

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ii) File

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iii) Database

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b) i) List any **three** ways of dealing with a virus on a computer. **(3mks)**

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ii) Explain the functions performed by **(2mks)**

a) The control unit

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b) Arithmetic and logic unit (ALU)

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c)   Convert the 522_8 to its base 10 equivalent   **(2mks)**

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d)   Using long division methods convert 67_{10} into binary.   **(2mks)**

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e)   Outline **three** disk management activities.   **(3mks)**

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KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL…………………………………… SIGN………………………………

DATE………………………………………………

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

451/2

COMPUTER STUDIES

PAPER 2

TIME: 2½ HOURS

PRACTICAL

INSTRUCTIONS TO CANDIDATES.

Type your name and index number at the top right hand corner of each print out and on your CD.

Write the version of software used for each question attempted

*Answer **all questions***

*Write your name and index number on the CD Password **should not be** used while saving*

All questions carry equal marks Hand in all printouts and the CD.

FOR OFFICIAL USE

QUESTION	MAXIMUM SCORE	STUDENT SCORE
1	50	
2	50	
Total	100	

1. The information below was extracted from CMC vehicle selling business

Buyer Name	Buyer Address	Buyer Town	Vehicle Reg NO	Vehicle Type	Vehicle Make	Vehicle price	Buyer Number	Amount paid
peter	254	Nakuru	KAJ 001	Matatu	Nissan	1200000	B001	800000
john	678	Eldoret	KAJ 002	Bus	Mazda	2400000	B002	2000000
Ken	963	Nairobi	KAJ 003	Saloon	Toyota	800000	B003	600000
Peter	147	Nakuru	KAJ 004	Pick up	Peugeot	1000000	B004	700000
Roy	456	Bungoma	KAJ 005	Lorry	Isuzu	3000000	B005	2000000
Glen	789	Webuye	KAJ 006	Pick up	Toyota	1800000	B006	1600000
John	678	Eldoret	KAJ 007	Bus	Scania	7500000	B002	7500000
Ken	963	Nairobi	KAJ 008	Matatu	Toyota	1300000	B003	1300000
Phillip	159	Kisumu	KAJ 009	Saloon	Nissan	900000	B007	900000
Peter	254	Nakuru	KAJ 010	Pick up	Isuzu	1500000	B001	1200000
Ken	357	Kisumu	KAJ 011	Saloon	Peugeot	700000	B008	700000
Glen	789	Webuye	KAJ 012	Bus	Isuzu	10000000	B006	9500000
Peter	147	Nakuru	KAJ 013	Matatu	Nissan	2700000	B004	2700000

a)   Create a database file named CMC   **(2 marks**)

b)   Using the information in the table, create a table to hold vehicle detail and another to hold buyer details. Name them **tblvehicle** and **tblbuyer** respectively   **(4 marks)**

c) Enforce referential integrity between two tables.   **(2 marks)**

d)   Create different input screen for each table, giving them appropriate title. Name them **frmvehicle** and **frmbuyer**. Use them to enter data into the tables.   **(12 marks)**

e)   Display a report only showing the details of the buyers who have cleared paying for the vehicle. Name the report **rptcleared** with ''CLEARED BUYERS'' as the title of the report.

(10 marks)

f) Using the two tables create an outlined report showing the customer details, the total amount paid by each customer and the total amount received by CMC during this time. Name the report **rptnilbal** and the title as 'SUMMARY REPORT PER BUYER.''   **(8 marks)**

g)   Create a query to display the vehicle details with balances of less than 500,000 but not less than 300,000. Name the query as **qrymidbal.**   **(7marks)**

h)   Create a report showing the vehicle type, the total sales for each type and the grand total.

(3 marks)

i) Print **tblvehicle, tblbuyer, rptcleared, and rptnilbal** and **qrymidbal** landscape orientation with footers being your last name and index number at the centre of the page**.**   **(2 marks).**

2.   Use a spreadsheet to manipulate data in the table below.

Adm. NO	Name	Stream	Comp	Art	Bus	Eng	Mat	STUDENT MEAN	RANK
C001	Barasa	H	56	45	36	56	26		
C002	Wangila	K	58	57	90	54	23		
C003	Wafula	H	48	56	54	45	25		
C004	Wanjala	K	78	95	78	46	24		
C005	Kerubo	H	49	86	68	35	52		
C006	Akinyi	K	56	45	25	63	54		
C007	Odhiambo	H	75	78	45	65	56		
C008	Okunyuku	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

a)   Enter the data in all bordered worksheet and auto fit all columns. Save the workbook as

  mark1   **(15 mks)**

b)   Find the total marks for each subject   **(3 mks)**

c)   Find total for each subject per stream using a function.   **(5 mks)**

d)   Find mean mark for each student using a function   **(5 mks)**

e)   Rank every student in descending order using the mean   **(5 mks)**

f) Create a well labeled colum chart on a different sheet to show the mean mark of every student.

Save the workbook as **mark2.** **(7 mks)**

g) Using **mark1**, use subtotals to find the average mark for each subject per stream. Save the

workbook as **mark3** **(7 mks)**

h) Print **mark1, mark2,** and the **chart** **(3 mks)**

KCSE 2022 PASSWORD

SERIES 1

NAME…………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN………………………………

DATE……………………………………………

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

441/1

HOMESCIENCE

PAPER 1

THEORY

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

1. *Write your **name** and **index** number in the spaces provided.*
2. *Sign and write the date of examination in the space provided.*
3. *This paper consists of **THREE** sections: **A,B** and **C**.*
4. *Answer **ALL** questions in sections **A** and **B** and any **TWO** questions from section **C**.*
5. *Check the question paper to ascertain that no question is missing (total of 23 questions)*

FOR EXAMINERS USE ONLY

Section	Question	Maximum score	Candidates score
A	1 -19	40	
B	20	20	
C	21	20	
	22	20	
	23		
TOTAL		100	

SECTION A (40marks) Compulsory
Answer all questions in this section in the spaces provided.

1. Name a plant food that contains first class **proteins**   **(1mrk)**

....

2. Write down four improvised abrasives you would use to clean an aluminum sauce pan.   **(2mrks)**

....

....

....

....

3. List three decorative methods of controlling fullness on a garment.   **(3mrks)**

....

....

....

4. Differentiate the two kinds of fractures.   **(2mrks)**

....

....

5. a) State two functions of roughage in our bodies   **(2mrks)**

....

....

b) Give any two main sources of roughage.   **(1mrk)**

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6. State four functions of the skin.   **(4mrks)**

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7. Apart from nutritional deficiency, name two other causes of anemia. **(2mrks)**

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8. State two advantages of dry cleaning - clothes. **(2mrks)**

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9. Give two disadvantages of impulse buying. **(2mrks)**

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10. What roles does vitamin D play in the body? **(2mrks)**

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11. Suggest three reasons why synthetic detergents are popular for laundry work **(3mrks)**

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12. State two causes of nappy rash **(2mrks)**

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13. Give two reasons why outdoor exercise is good for an expectant mother. **(2mrks)**

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14.   State three advantages of using terrazzo as a material used in construction   **(3mrks)**

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....

15.   Suggestion three reasons why button shanks are important in a garment   **(3mrks)**

....

....

....

16.   Give a reason for each of the following processes in garment constitution   (4mrks)

a)   Snipping

....

....

b)   Top Stitching

....

....

c)   Binding

....

....

d)   Lining

....

....

SECTION B (20mrks)

Compulsory

You have been left at home over the weekend to do the household chores as the rest of the family

  goes for a wedding ceremony.

17 a) Write down the procedure of thorough cleaning a pair of muddy leather shoes for your brother.

                                                                                  (12mrks)

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b)Outline the steps you will follow to launder your mother's fast coloured cotton bathing towel.
(8mrks)

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SECTION C (40marks)

Answer any two questions from this section.

18 a) With two examples in each case. Write down the three forms of advertising. **(6 mks)**

i. Electronic media (1mk

_____

ii.   Print media (1mk -

_____

iii.   Person to person –

_____

b) State four objectives of advertising **(4mrks)**

....

....

....

....

c)Give five points why consumers need protection (5mrks)

To ensure that;

....

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....

d)What are the five rights of a consumer? **(5mrks)**

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19   a)Draw a front bodice pattern and show the following markings   **(6mrks)**

i.   Stitching line.

ii.   Centre front.

iii.   Notches.

iv.   Straight grain.

v.   Cutting line.
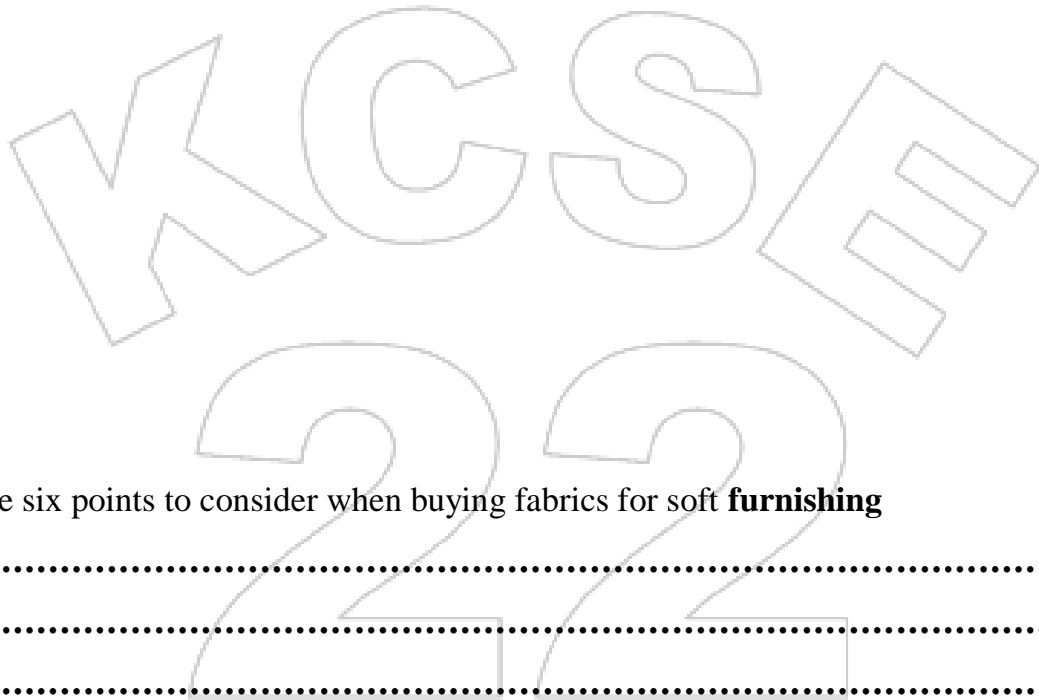
b)   State six points to consider when buying fabrics for soft **furnishing**   **(6mrks)**

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c)Give four qualities of a well made opening

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d)   Sketch three ways of strengthening the top of a patch pocket by machining. **(3mrks)**

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....

e) How would you estimate the length of a buttonhole **(1mrk)**

....

....

20) a) State and explain five reasons for using soft furnishing in the home **(10mks)**

....

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b) State five qualities of good lighting **(5mrks**

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c) Suggest five helpful hints for effective flower arrangements. **(5mrks)**

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KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN…………………………………

DATE……………………………………………

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

441/2

HOMESCIENCE

(CLOTHING CONSTRUCTION)

(PRACTICAL)

PAPER 2

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

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

A pattern of a child's skirt is provided. You are advised to study the sketches, instructions and the layout carefully before you begin the test.

Materials provided.

1.Pattern pieces:
A.   Front skirt
B.   Back skirt.
C.   Front frill
D.   Back frill.
E.   Back waist band.
F.   Pocket.
G.   Cross way strip.
2.Plain light weight cotton fabric 85cm by 91cm.

3.Sewing thread to match the fabric.

4.A 15cm long zip.

5.One large envelope (A4)

THE TEST

Using the materials provided, cut out and make the left half of the skirt to show the following processes.

a)   Making of the back waist dart.

b)   Preparing of the pocket mouth using slip hemming and attaching of the pocket to the skirt.

c)Working of neatened open seams of the skirt and the frill.

d)   Attaching of the zip using concealed method.

e)Working gathers on the frill.

f)Using scraps of fabric, cut and prepare the piping by joining the ends of the two cross way strips, folding in half lengthwise and pressing it.

g)   Attach the piping and frills to the skirt. DO NOT TRIM OR NEATEN THE SEAM.

h)   Preparing and interfacing the back waist band ready for attachment.

i) Attaching the waistband to the waistline of the back skirt.

j) Completing the waistbands on W.S using even tacking stitches. DO NOT HEM. At the end of the examination, firmly sew your work, on a single fabric, a label bearing your name and index number. Remove needles and pins from your work then fold your work neatly and place it in the envelope provided. Do not include scraps of fabric in the envelope.

THE LEFT SIDE VIEW OF THE SKIRT
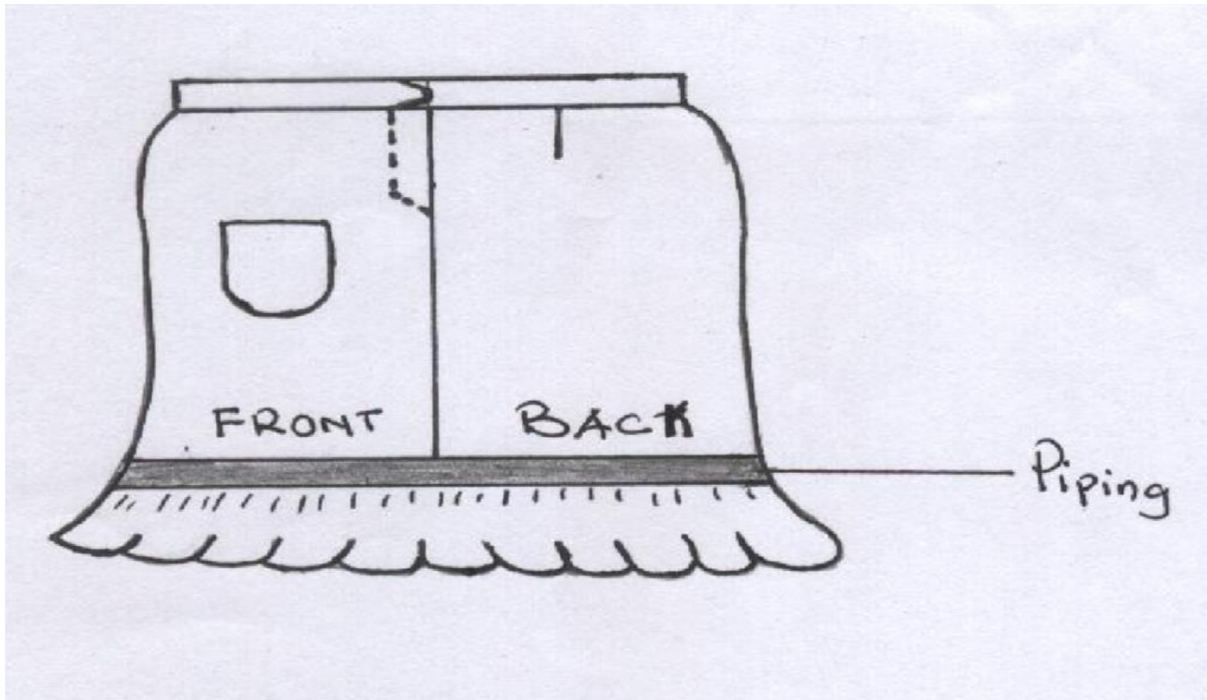
THE LAYOUT (NOT DRAWN TO SCALE)
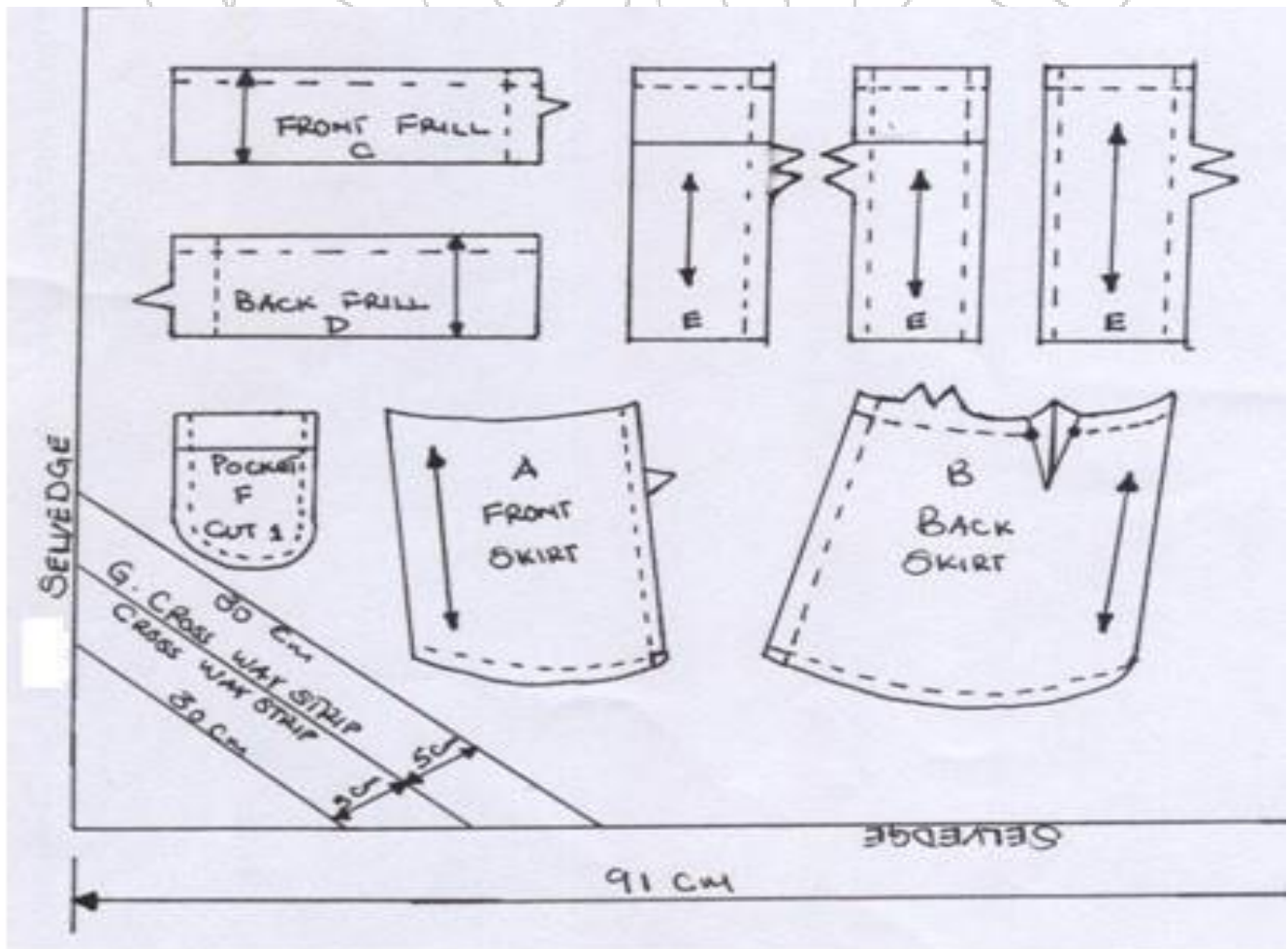
KCSE 2022 PASSWORD
SERIES 1

NAME…………………………………………… INDEX NO………………………

SCHOOL………………………………………… SIGN……………………………

DATE……………………………………………

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

441/3

HOMESCIENCE

PAPER 3

FOODS AND NUTRITION.

PRACTICAL.

1 ¾ HOURS.

Instructions to candidates

PLANNING SESSION: 30 Minutes PRACTICAL TEST SESSION: 1 ¼ HOURS

Read the test carefully.

• *Write your name and index number on every sheet of paper used.*

• ***Textbooks*** *and recipes may be used during the planning session as reference materials.*

• *You will be expected to keep to your order of work during the practical session.*

• *You are only allowed to take away your reference materials at the end of planning session.*

• *You are not allowed to bring additional notes to the practical session.*

• *Candidates should check the question paper to ascertain that both pages are printed as indicated and that no questions are missing.*

THE TEST

Your lacto- vegetarian friend is coming to visit and have launch with you at your home. Using the ingredients listed below, prepare and serve a onecourse meal for the two of you. Cook and display a tea item for 4.00 o'clock tea for the two of you.

Ingredients

Maize flour/wheat flour/sweet potatoes/rice.

Green grams/soya meat/ eggs/milk.

Vegetables in season.

Salt

Spices

Onions

Tomatoes

Carrots

Dhania

Oil

Margarine

Baking powder

Flavouring

KCSE 2022 PASSWORD

SERIES 1

NAME……………………………………………

INDEX NO………………………

SCHOOL…………………………………………

SIGN………………………………

DATE…………………………………………………

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

314/1

ISLAMIC RELIGIOUS EDUCATION

Paper 1

2 ½ hours

INSTRUCTIONS TO CANDIDATES

a) Write your name and 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 SIX questions

d) Answer any FIVE questions in the spaces provided at the end of question six

e) Candidates should check the question paper to ascertain that all the questions are available

f) Candidates should answer the questions in English

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	Total score
Candidate's score							

Q1.

a.   Sura al Hujurat lays rules on how Muslims should solve their disputes and relate with each other. Explain the causes of conflicts in the society according to the **surah**   **(6mks)**

b.   Discuss four differences in the compilation of Quran between caliph Abubakar and Uthman

(8mks)

c.   Explain the problems encountered in the standardization of the Quran during the reign of caliph Uthman   **(6mks)**

Q 2

a.   Describe the circumstances under which suratul Nur was revealed   **(7mks)**

b.   Outline facts which prove that Quran is from Allah   **(7mks)**

c.   Explain ways in which angel Jibril facililtated the revelation of the Quran   **(6mks)**

Q3

• Outline the reasons that necessitated the collection and compilation of Hadith   **(7mks)**

• Discuss the contributions made by Imam Bukhari in the development of Hadith   **(7mks)**

• Abu Hureira reported that the prophet said " Keep away from envy for as fire burns fire woods so envy consumes good actions" in light of the above hadith highlight the views of prophet Muhammad (s.a.w) on envy and jealousy   **(6mks)**

Q4

a.   What is the significance of visiting Madina after Hajj or Umrah   **(6mks)**

b.   State the Islamic principles pertaining to halal and Haram   **(7mks)**

c.   Explain the contributions made by Imam Abu Hanifa in the development of Fiqh   **(7mks)**

Q5

a.   How does the performance of swalat demonstrate unity among the Muslims   **(5mks)**

b.   Describe the categories of legal acts in islam   **(10mks)**

c.   Outline five situations where ijmaa was applied during the caliphs   **(5mks)**

Q6.

a. How does the belief in Qadar affect the life of a Muslim   **(6mks)**

b. State the qualities of an Imam according to the shia   **(6mks)**

c. Outline the roles of the prophets in the facilitation of the message   **(8mks)**

KCSE 2022 PASSWORD
SERIES 1

NAME………………………………………… INDEX NO………………………

SCHOOL……………………………………… SIGN…………………………………

DATE…………………………………………………

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

314/2

ISLAMIC RELIGIOUS EDUCATION

Paper 2

2 ½ hours

Instructions to candidates

a) Write your name and 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 SIX questions
 d) Answer any FIVE questions in the spaces provided at the end of question six
 e) Candidates should check the question paper to ascertain that all the questions are available
 f) Candidates should answer the questions in English

FOR EXAMINER'S USE ONLY

Question	1	2	3	4	5	6	Total score
Candidate's score							

1) a) Explain the rationale behind the prohibition of slander in Islam.   **(8mks)**

 b) state the wisdom behind the prohibition of zina in Islam.   **(7mks)**

c)Highlight **FIVE** advantages of practicing the virtue of Qana'a(contentment)   **(5mks)**

2) a) state the benefits of writing a will before a Muslim die.   **(7mks)**

b) state the Islamic teachings that married couples can adopt to avoid Talaq(divorce).   **(7mks)**

c) state **SIX** causes of corruption in Kenya.   **(6mks)**

3) a) Explain ways through which Muslims can co-exist peacefully with non-Muslims.   **(8mks)**

b) state the effects of riba on Muslim**.**   **(7mks)**

c) highlight **FIVE** Islamic teachings on acquisition of wealth.   **(5mks)**

4) a) Explain ways in which Muslim city sates facilitated spread of Islam in the East coast of Africa between 1700-1900.   **(8mks)**

b) Explain factors that led to the decline of the Banu Abbas.   **(7mks)**

c) State **FIVE** achievements of the fatimids**.**   **(5mks)**

5) a) Gives reasons why sayyidna Abubakar was elected Khalifa**.**   **(7mks)**

b) Explain **FOUR** factors that led to the battle of badr.   **(8mks)**

c)State **FIVE** lessons we learn from Sheikh Swalel Abdallah Farsy.   **(5mks)**

6)   a) Discuss **FIVE** achievements of sheikh sayyid Qutub   **(5mks)**

   b) State **FIVE** lessons we can learn from imam Ghazali's rules of Conduct**.**   **(5mks)**

  c) Briefly describe sheikh Al Amin Al Mazrui.   **(5mks)**

KCSE 2022 PASSWORD

SERIES 1

NAME……………………………………… INDEX NO………………………

SCHOOL…………………………………… SIGN…………………………………

DATE……………………………………………

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

501/1

FRENCH

PAPER 1

TIME: 2 ½   HOURS

INSTRUCTIONS TO CANDIDATES

- *This paper has <u>Three</u> Sections.*
- *In Section I you will have five minutes to read through the questions before the test starts. Before answering the questions you will listen to several recorded passages on a tape. For each passage you will answer questions as indicated to you on the tape.*
- *In Section II you will listen to recorded materials once and start writing during the second listening.*
- *In Section III, choose one composition from question 1 and one from question 2.*
- *Answer all the questions in the spaces provided.*

SECTION I

LISTENING COMPREHENSION (15 Marks)

Passage I

SONDAGE

Fill the table below by supplying the required information on the person being interviewed.

(a)	Nom	
(b)	Age	
(c)	Petit – boulot	Le_____ de_____ à_____ (1 ½ mks) (Le jour) (L'heure)
(d)	Détails du petit-boulot	(i)_____ (½ mk) (ii) _____ (½ mk) (iii) Et quelquefois faire _____ (½ mk)

(e) Quel est son avis concernant le boulot en question? (1mk)

PASSAGE 2

FLASH – INFO

Fill the blanks using one word only

1) D'aprés le Flash-Info, Madame Chebet qui _____(i) la rue Kimathi s'est

cassée   le_____ (ii)   gauche   car   le   conducteur   de   la

Peugeot_____(iii) ne s'est pas arrêté aux _____ rouges, cet

accident a eu leu à_____ (v) du matin.

Passage 3

MESSAGE SUR UN REPONDEUR

3(a) Complete the following table. Put an (x) if the answer is not mentioned in the recorded text.

i)	La personne qui laisse un message	
ii)	Jour de la sortie	
iii)	Type de sortie	
iv)	Lieu	
v)	Prix	

(b) De quelle nationalité est l'amie de Lucie? _____ (½ mk)

(c) A quelle heure commence la sortie?_____

(d) Completez le numéro de téléphone 06------------------------------ (1 mk)

(e) Combien seront-ils en tout _____ (½ mk)

PASSAGE 4

UNE PUBLICITÉ

Answer the following questions.

4 (a) Dans quelle région est-ce qu'on fera la randonnée?_____ (½ mk)

(b) D'où partira la randonnée?_____(½ mk)

(c) Combien coûte cette activité? _____(½ mk)

(d) Citez deux activités par lesquelles la journée terminera.

   (i) _____ (ii) _____ (1 mk)

SECTION II

Dictation

Write the Dictation passage in the spaces provided.

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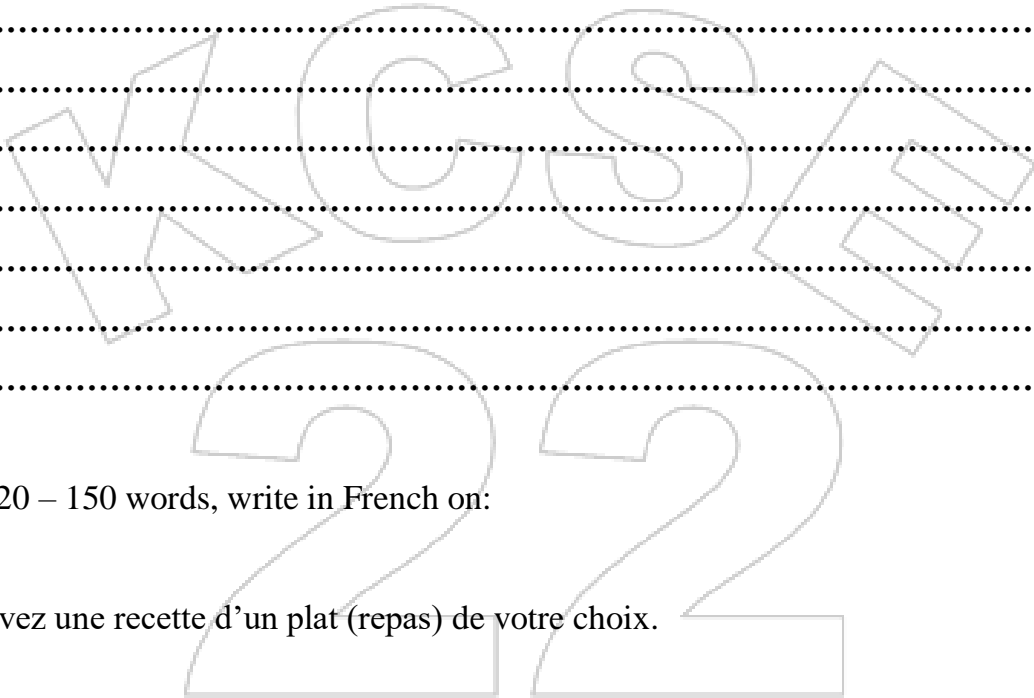
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1.   In 120 – 150 words, write in French on:

Either

(a)   Ecrivez une recette d'un plat (repas) de votre choix.

Or

(b)   Une nouvelle compangnie Française 'La premiere' cherche une secretaire bilingue. Ecrivez votre lettre de candidature pour ce poste.   (10 points)

2.   In 150 – 180 words, write in French a composition on:

Either

(a)   Commencez par:

Il faisait déjà sombre……………… et j'étais seul chez nous. Soudain………………..

(b) En cours de votre voyage pendant les vacances passés vous avez été victime d'un accident de route. Racontez ce qui s'est passé. **(15 points)**
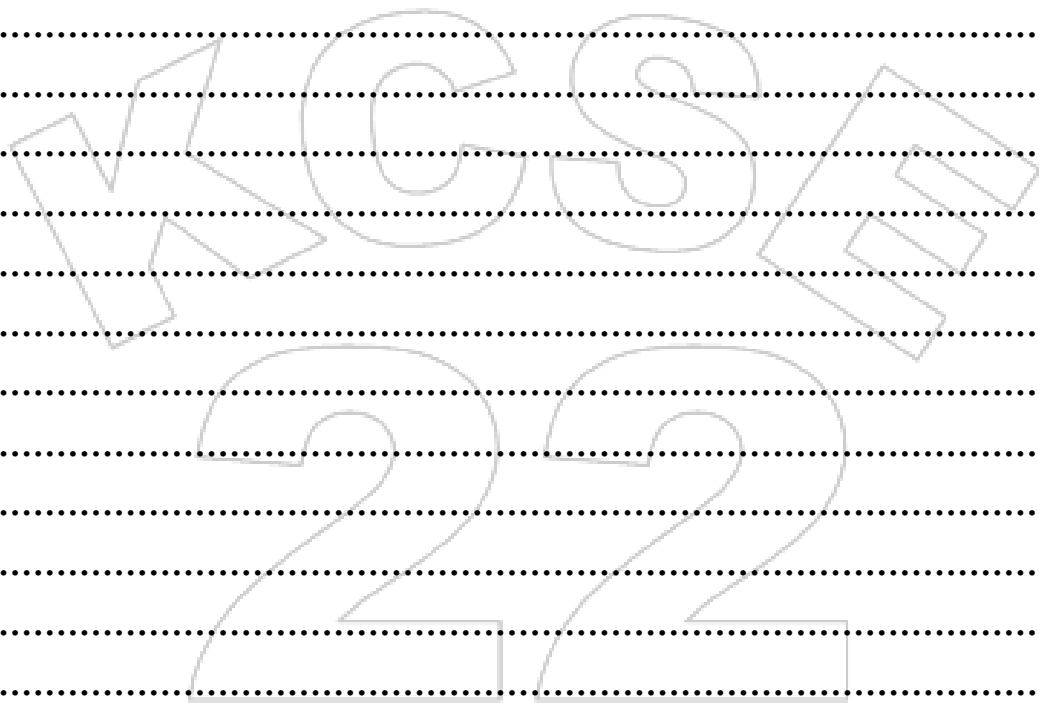
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KCSE 2022 PASSWORD
SERIES 1

NAME……………………………………… INDEX NO………………………

SCHOOL………………………………… SIGN………………………………

DATE……………………………………….

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

501/2

FRENCH

PAPER 2

(Grammar & Comprehension)

1 ½ HRS

FOR EXAMINERS USE		
SECTION I	15	
SECTION II	15	
TOTAL	30	

SECTION I

Answer the following questions beginning as indicated, make necessary changes only where possible. (8 points)

Exemple: A-t-il mangé quelque chose?

   Non, il n' a rien mangé.

(i)   On pratique les sports nautiques sur la côte.

Les sports nautiques …………………………………………………………………..

(ii)   Sont-ils déjà partis de la campagne?

Non, ils …………………………………………………………………..

(iii)   Nous avons seulement fait du shopping.

Nous n'…………………………………………………………………...............

(iv)   "Dépêchez-vous!", a dit le professeur aux élèves.

Le professeur leur a dit ……………………………………………………………

(v)   Nous avons regardé une émission hier soir. Elle n'était pas bonne.

L'émission…………………………………………………………………………

(vi)   As-tu peur de ces insectes?

Oui, ces insectes…………………………………………………………………

(vii)   D' habitude, le chauffeur vient nous chercher à l'heure.

Même la semaine prochaine, il ……………………………………………………

(viii)   L'hélicoptère de police a évacué tous les blessés.

Tous les blessés…………………………………………………………………..

(ix)   Vous devez bien connaître cette ville.

Il est important que …………………………………………………………………...

(x)   Vont-ils encore au théâtre?

Non, ils ………………………………………………………………………….

(xi)   Pendant notre voyage à Mombasa nous avons évité plusieurs accidents.

En……………………………………………………………………………………

(xii)   Avec patience tout ira mieux bientôt.

Si vous êtes…………………………………………………………………………..

(xiii)   Ils ne peuvent pas être arrêtés par les douaniers ou les agents.

Ni ……………………………………………………………………………………….

(xiv) Idi obtient son diplôme puis il commence à travailler.

Après …………………………………………………………………………………

(xv) Elles ont eu de bons résultats mais elles n'ont pas gagné le prix.

Malgré………………………………………………………………………………..

(xvi) Je trouve ta mère très gentille car elle parle…………………………………………

Complete the following phrases with ONLY one word. (2 points)

(i) Avant la fin ………………… été Monique aura appris à nager.

(ii) Les week-ends, j'ai toujours beaucoup ………………..faire.

(iii) Florence a été obligée …………………prendre un avion pour Kisumu.

(iv) Les manifestants se sont dirigés ………………..le commissariat.

(v) Ce matin, Joseph a accompagné sa mère ………………….marché.

(vi) Peux-tu me donner le titre du film à propos …………………tu parlais.

(vii) Ces jumelles sont nées à l'époque ……………………….il y avait une sécheresse.

(viii) Vous m'attendez ……………….combien de temps?

Complete the following text. For each blank space use ONLY one word (2 points)

François avait fini son repas ……………..soir. Il s'est levé………………table et il est allé

s'asseoir …………………son vieux fauteuil près de la fenêtre. Il a ………………ses lunettes

pour lire son journal. À ce moment-là quelqu'un a …………………à la porte. "Entrez!" a crié

François. C'était André…………………est entré, suivi………………Jean. ……………..

surprise!

For each sentence re-arrange the words to make sense.(3 points)

Exemple: une / riche/ un / maison / champagne / habite / grande / monsieur / très / la / à

Un monsieur très riche habite une grande maison à la campagne.

(i) Est / langue / français / en / la / on / le / qu' / France / parle

……………………………………………………………………………………………

(ii)   Perdu / est / qui / celui / hésite.

…………………………………………………………………………………………………

(iii)   Celle / notre / plus / maison / grande / oncle / de / est / que / mon.

…………………………………………………………………………………………………

(iv)   Je / demande / amène / ici / qui / les / ce / me

…………………………………………………………………………………………………

(v)   Meilleures / les / les / les/ courtes / plus / toujours / plaisanteries / sont

…………………………………………………………………………………………………

(vi)   Mer / une / d' / la / dans / goutte / eau / est / c'

…………………………………………………………………………………………………

SECTION II

Read the passages below and answer in French the questions that follow.

PASSAGE I

Dans le village ou ils passent leurs vacances, Jean, Charlot et Paulette ont connu un vieux marchand qui avait une auto qui les emmenait souvent dans les villes et les villages de la région. Un jour, pour jouer une farce à leur vieil ami, ils se sont cachés dans sa voiture, sous des sacs vides. Quelqu'un est monté dans l'auto, qui est parti dans la direction de la montagne. Les jeunes ont découvert que celui qui conduisait était un étranger. C'était un effet un escroc qui, ayant volé de l'argent, a pris la voiture pour s'enfuir. Enfin l'auto s'est arrêtée et le voleur est descendu et il s'en est allé. Jean, qui savait à peine conduire, a réussi à faire partir la voiture. Les enfants ont fait dans la nuit un voyage périlleux. Au matin ils sont arrivés dans le village.

(a)   Qu'est-ce que les trois enfants ont voulu faire?   (½ point)

…………………………………………………………………………………………………….

(b)   Qu'est-ce qui leur est arrivé?   (½ point)

…………………………………………………………………………………………………….

(c)   "Jean, qui savait à peine conduire….." Qu'est-ce que cela veut dire?   (1 point)

…………………………………………………………………………………………………….

(d)   Donnez un synonyme du mot "périlleux".   (½ point)

…………………………………………………………………………………………………….

PASSAGE II

Avant d'entrer dans le "vrai" monde du travail, beaucoup de jeunes personnes, en France comme en Grande-Bretagne, font un stage en entreprise. Souvent, les jeunes Français ont un placement pendant leur année en première, donc à l'âge de 16 ou 17 ans, pour une période de deux semaines en moyenne. Il y a aussi des écoles en Grande-Bretagne, qui chaque année organisent des stages en entreprise en France pour quelques-uns de leurs élèves qui s'expriment bren en français et qui savent se débrouiller. La plupart des stagiaires ont déjà fait un échange scolaire en France. Comme cela se passe souvent dans le cadre d'un échange scolaire ces jeunes "Stagiaires" sont loges chez une famille française et ils passent une partie de leur temps avec leurs correspondants. Leur stage en entreprise dure quatre ou cinq jours.

À la fin, ils ont fait beaucoup de progrès en français et la plupart sont très contents de leur séjour. Il y a souvent des choses qui les étonnent ou qui les amusent, mais ils en gardent toujours un excellent souvenir.

(a)   Que font les jeunes personnes avant d'entrer dans le monde du travail?   ½ point)

…………………………………………………………………………………………….

(b)   En France, le stage en entreprise dure combien de temps?   (½ point)

…………………………………………………………………………………………….

(c)   Si on est un jeune anglais, que doit-on avoir pour faire un stage en France? (½ point)

…………………………………………………………………………………………….

(d)   Expliquez le mot "Stagiaire"   (1 point)

…………………………………………………………………………………………….

PASSAGE III
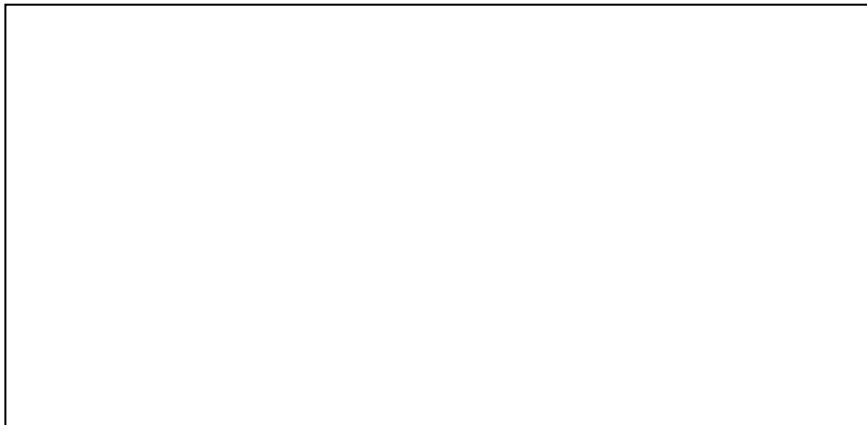
(a)   De quoi s'agit-il?   (½ point)

……………………………………………………………………………………………..

(b)   VRAI ou FAUX ? Il faut se lever de bonne heure?   (½ point)

……………………………………………………………………………………………..

(c)   Donnez l'équivalent du mot "rémunération".   (½ point)

…………………………………………………………………………………………….

(d)   Donnez l'antonyme de l'expression: "Un travail à temps partiel".   (1 point)

…………………………………………………………………………………………

PASSAGE IV

On leur donne des noms de filles ou de garçons, comme Hugo ou Colina. Pourtant, ils développent une énergie phénoménale et provoquent d'effroyables dégâts.

À la Réunion, quand un cyclone risque de se former, on donne l'alerte 1 trente-six heures avant. Si la menace se précise, on donne l'alerte 2, environ 24 heures avant l'arrivée de la tempête. Douze heures plus tard, quand on est certain que le cyclone va passer sur l'île, on sonne l'alerte 3.

Les bateaux rentrent aussitôt au port et s'attachent très solidement aux pontons. Les gens qui vivent dans des maisons peu solides, trop vieilles, ou dans des zones inondables, se réfugient dans des centres d'accueil. Ceux qui peuvent rester chez eux doivent fermer leurs volets, faire des réserves d'eau, rentrer les meubles de jardin, etc.

Tout le monde doit se munir de bougies et d'une radio à piles pour pouvoir se tenir informé de la situation. Les gens sont autorisés à sortir de chez eux seulement lorsque tout danger est écarté. Alors, si vous vous trouvez sur une île tropicale et que la météo annonce un cyclone, ne vous penchez pas à la fenêtre pour profiter du spectacle. Tous aux abris !

(a)   Qu'est-ce qu'il y a normalement après un cyclone?   (½ point)

…………………………………………………………………………………………….

(b)   Comment réagissent-ils, les habitants dès que l'alerte 3 est sonnée?   (1 point)

i)…………………………………………………………………………………………..

ii)…………………………………………………………………………………………..

(c)   Pendant un cyclone, on ne peut pas sortir sauf.   (½ point)

……………………………………………………………………………………………..

(d)   Que faut-il faire pour être au courant de la situation?   (½ point)

…………………………………………………………………………………….

PASSAGE V

Le rôle du juge est surtout d'aider l'enfant, qui se culpabilise souvent pour son désir d'autonomie, notamment vis-à-vis de sa mère. On lui fait tout de suite comprendre qu'il a le droit d'émettre un souhait, mais que ce n'est pas lui qui a le pouvoir de décision, que c'est le juge et lui seul qui décide. C'est une manière de les déculpabiliser, de les laisser à leur place d'enfant.

(a)   Selon le texte, les enfants se culpabilisent car ils veulent être…………………………………. (½ point)

(b)   Expliquez exactement comment le juge aide l'enfant.   (2 points)

…………………………………………………………………………………………………..

…………………………………………………………………………………………………..

PASSAGE VI

Selon une enquête récente, 56% des français et 49% des Françaises considèrent que leurs relations se sont améliorées pendant les vingt dernières années. Depuis les années 60, la volonté des femmes d'instaurer un autre équilibre social a bouleversé les fondements d'une société traditionnellement plutôt machiste. Alors que l'on comptait 60% de femmes au foyer en 1968, il n'en reste que 20% en 1998. Les trente dernières années ont donc vu une augmentation quasi constante des femmes qui veulent travailler. Les femmes pourraient même devenir majoritaires dans la population active de 2020. Cela effraie-t-il leurs collègues masculins? Pas du tout, puisque 81% des homes pensent qu'il est indispensable que les femmes aient un emploi. D' ailleurs, chez 65% des couples. Les deux personnes travaillent. Aujourd'hui donc, le modèle qui s'impose est le couple est biactif.

(a)   Trouvez dans le texte les mots qui ont le même sens que: (1 ½ points)

(i)   Un sondage …………………………………………………………………………………

(ii)   Sont devenues mieux …………………………………………………………………..

(iii)   Le désir …………………………………………………………………………………

(b)   Quel changement dans l'équilibre hommes-femmes au travail risque de se produire à l' avenir?   (1 point)

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POLITE NOTE:

TO ALL KCSE 2022 CANDIDATES;

Incase a Significant Number of these Questions Appear in KCSE Exam, Don't panic!

TAKE IT EASY

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