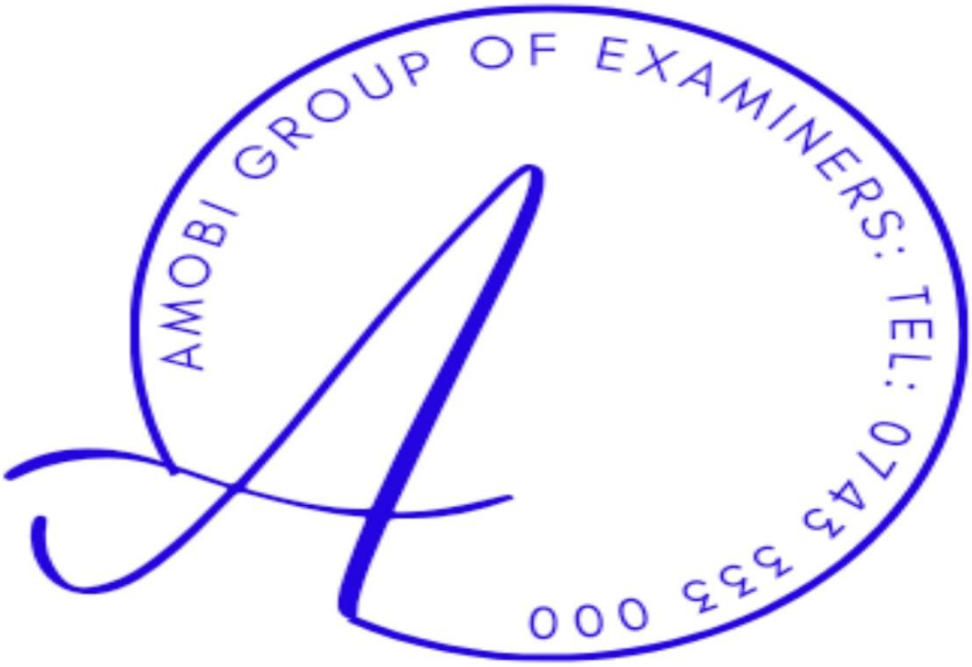
TOP K.C.S.E PREDICTION SERIES 3 EXAMS 2022 DECEMBER *(ALL SUBJECTS TESTED)*



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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

443/1

AGRICULTURE

PAPER 1

TIME:2 HOURS

INSTRUCTIONS TO CANDIDATES

1.Write your name and ADM. Number in the spaces provided above.
2. Sign and write the date of examination in the spaces provide above.
3. This paper consist of three sections A, B and C.
4. Answer all the questions in section A and B.
5.Answer any two questions in section C.
6.All answers should be written in the spaces provided.
7. All answers must be written in English.
8. Candidates must check to ascertain that all the pages are printed as indicated and that no question is missing.

FOR EXAMINER'S USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE SCORE
A	1-16	30	
B	17 -20	20	
C		40	
D			
TOTAL SCORE		90	

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SECTION A 30 MARKS

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

1. State **three** ways in which crop rotation improves soil fertility. **($1\frac{1}{2}$marks)**

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2. List **four** methods of farming. **(2 marks)**

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3. Give **four** importance of cost as used in agricultural economics. **(2 marks)**

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4. List **four** factors a farmer considers when siting a nursery bed. **(2 marks)**

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5. State **four** ways in which government policy contributes to agriculture. **(2 marks)**

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6. State **four** disadvantages of concession land tenure. **(2 marks)**

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7. Give **four** reasons why cereal grains should be dried before storage. **(2 marks)**

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8. State **three** importance of cutting back in pyrethrum. **($1^1/_2$marks)**

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9. Outline **four** observable indicators of economic growth of a country. **(2 marks)**

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10. State **four** solutions that can help solve the problem of perishability in horticultural crops**. (2mrks)**

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11. Give **four** disadvantages of using organic manures in crop production. **(2 marks)**

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12. State **four** ways in which chemical kills the weeds in the crop field. **(2 Marks)**

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13. State **four** management practices that promote high herbage yields in pasture production. **(2mks)**

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14. Distinguish between seed dressing and seed inoculation. **(2marks)**

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15. State **four** agriculture support services available to a crop farmer **(2 marks)**

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16. State **two** precautions to be taken when harvesting cotton. **(1 mark)**

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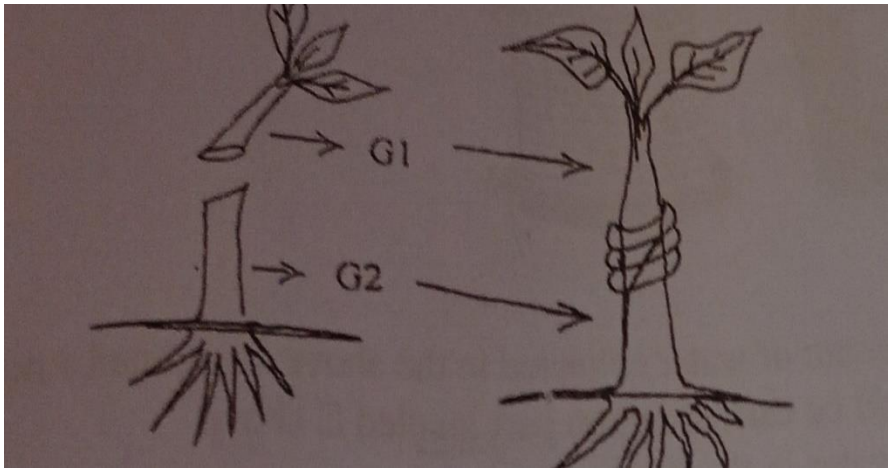
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SECTION B 20 MARKS

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

17. The diagram illustrated below shows a method of grafting. Study it carefully and answer the questions that follow.



a) Identify the type of grafting illustrated above. **(1 mark)**

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b) Name the parts named G1 and G2. **(1 mark)**

G1. .....

G2. .....

c) State **three** advantages of grafting in agroforestry. **(3 marks)**

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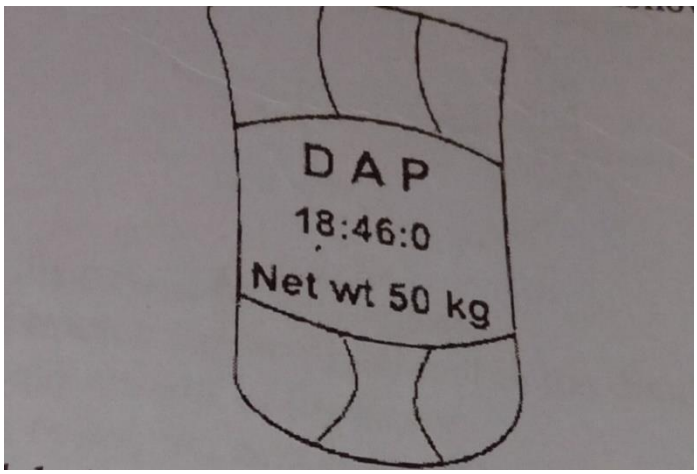
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18.The diagram illustrated below shows a DAP fertilizer bag. Study it carefully and answer the questions that follow.



a) What do the figures labelled on the diagram stand for. **(1 mark)**

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b) With a reason name the class of inorganic fertilizer that DAP belong. **(2 marks)**

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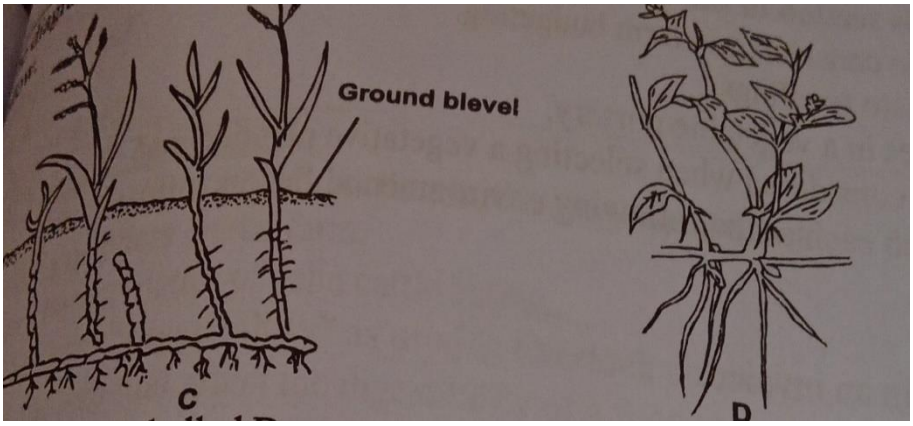
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c) Calculate the amount of filler material in 200 kg of DAP with a fertilizer grade of 18:46:0.

(2 marks)

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19. The diagrams illustrated below shows common weeds. Use them to answer the questions that follow.



a) Identify the weeds labelled C and D. **(2 marks)**

C. .....

D. .....

b) Classify the weed labelled C according to plant morphology. **(1 mark)**

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c) Give **one** reason why it is difficult to control the weed labelled D. **(1 mark)**

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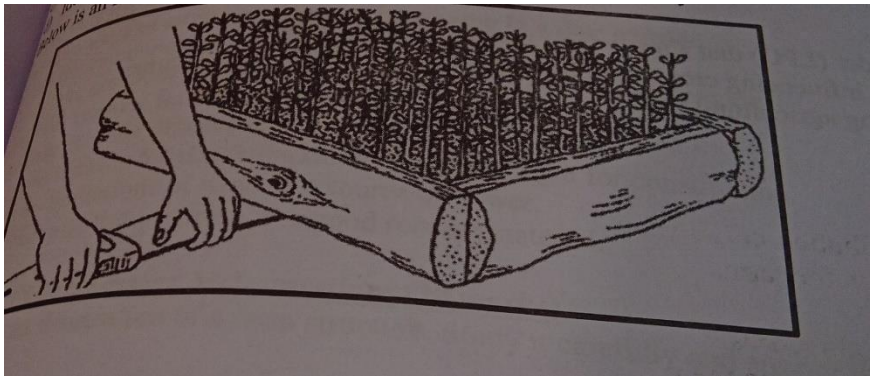
d) Name the appropriate category of herbicide used to the control weed labeled C. **(1 mark)**

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20.The diagram illustrated below shows an activity carried out in agroforestry. Study it carefully and answer the questions that follow.



a) Identify the activity illustrated above. **(1 mark)**

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b) Sate **two** reasons for carrying out the activity identified above. **(2 marks)**

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c) Name **two** tools that may be used to carry out the activity illustrated above. **(2 marks)**

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SECTION C 40 MARKS

ANSWER ONLY TWO QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED AFTER THE QUESTIONS

21. a) The following information was found in Mr. Kamau's farm record for the year ending December 2014. Study it carefully and answer the questions that follow.

Bought goats	4,000
Bought poultry	15,000
Bought dairy meal	25,000
Bought pasture seeds	50,000
Transportation of farm produce	15,000
Paid casual workers	12,000
Hired an ox-plough	10,000
Opening valuation	150,000
Sale of mohair	75,000
Sale of rabbits	36,000
Sold dairy cow	70,000
Received cash from the sale of wheat	100,000
Sold cabbages	20,000
Received money from the sale of eggs	15,000
Closing valuation	200,000

i)Prepare a profit and loss account for Mr. kamau's farm. **(7 marks)**

ii) Did he make a profit or loss. **(1 mark)**

iii) Calculate the percentage profit or loss that Mr. Kamau made. **(2 marks)**

b) Outline **five** functions of Kenya National Federation of producers in Kenya. **(5 marks)**

c)Explain **five** effects of solifluction. **(5 marks)**

22.a) Explain **eight** factors that influence the type of irrigation to be used in a farm. **(8 marks)**

b) Outline **five** importance of draining agricultural land. **(5 marks)**

c)Explain **seven** safety precautions observed when spraying herbicides. **(7 marks)**

23a) Explain **ten** functions of marketing. (**10 marks)**

b) Explain **five** factors that should be considered when deciding the depth of planting seeds**.(5 mrks)**

c) Outline **five** characteristics of a green manure crop. **(5 marks)**

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443/2

AGRICULTURE

PAPER 2

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1.Write your name and ADM. Number in the spaces provided above.

2. Sign and write the date of examination in the spaces provide above.

3. This paper consist of three sections A, B and C.

4. Answer all the questions in section A and B.

5.Answer any two questions in section C.

6.All answers should be written in the spaces provided.

7. All answers must be written in English.

8. Candidates must check to ascertain that all the pages are printed as indicated and that no question is missing.

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SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE SCORE
A	1-16	30	
B	17 -20	20	
C		40	
TOTAL SCORE		90	

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SECTION A 30 MARKS

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

1. Name **four** beef breeds of cattle. **(2 marks)**

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2. Name the most appropriate tools used in the following operations **($1^1/_2$marks)**

a) Removing metal chipping in files

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b) Cutting wood along the grains

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c) Branding

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3. Give **four** practices carried out on fish before preservation. **(2 marks)**

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4. Outline **four** reasons for steaming up a gestating a cow. **(2 marks)**

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5. List **four** factors considered when selecting eggs for marketing. **(2 marks)**

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6. State **three** qualities of a good livestock ration. **($1^1/_2$marks)**

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7. Sate **four** advantages of carrying out raddling in sheep management. **(2 marks)**

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8. State **four** disadvantages of using a spray race in the farm. **(2 marks)**

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9. List **four** causes of sterility in dairy cows. **(2 marks)**

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10. List **four** effects of ticks on livestock bodies. **(2marks)**

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11. State **four** factors that influence selection of construction materials. **(2 marks)**

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12. Name **thre**e farm implements operated by the tractor's P.T.O shaft. **($1^1/_2$marks)**

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13. State **four** reasons for debeaking in poultry production. **(2 marks)**

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14. Name **three** breeding diseases controlled through the use of artificial insemination. **($1^1/_2$marks)**

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15. Give **four** characteristics of a good vaccine. **(2 marks)**

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16. State **four** advantages of Kenya top bar hive in bee keeping. **(2 marks)**

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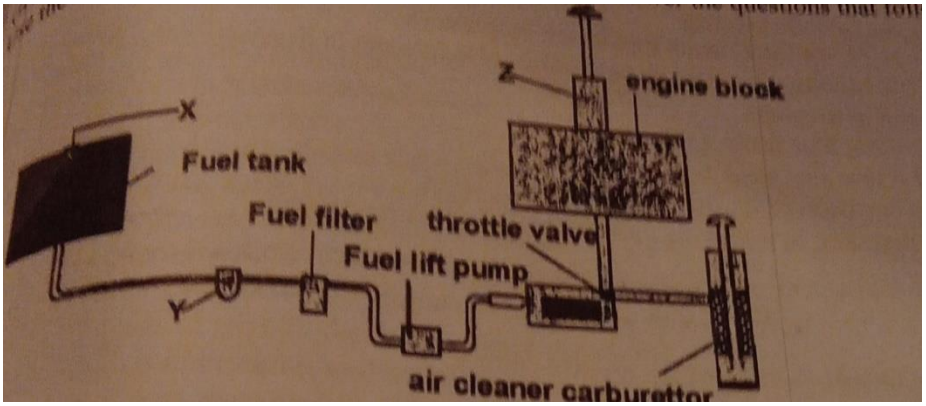
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SECTION B 20 MARKS

ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

17. The diagram illustrated below shows a petrol engine fuel system. Study it carefully and answer the questions that follow.



a) Name the parts labelled X, Y and Z. (3 marks)

X .....

Y .....

Z .....

b) State the maintenance practice of the following parts; **(2 marks)**

i) Fuel tank cap

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ii)The carburetor

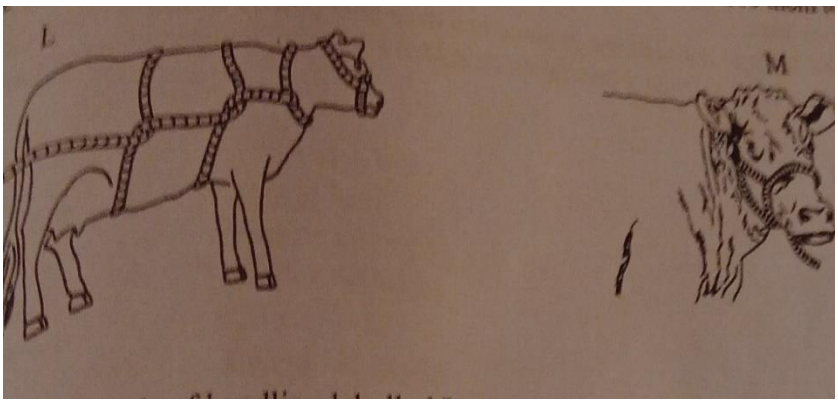
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18. The diagram below shows two methods of handling livestock in the farm. Study them and answer the questions that follow.



a) Identify the methods of handling livestock labelled L and M. **(1 marks)**

L .....

M .....

b) Give **two** occasions when it may be necessary to carry out the practice labelled L above. **(2mks)**

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c) Give **two** animal conditions under which method L above cannot be used. **(2 marks)**

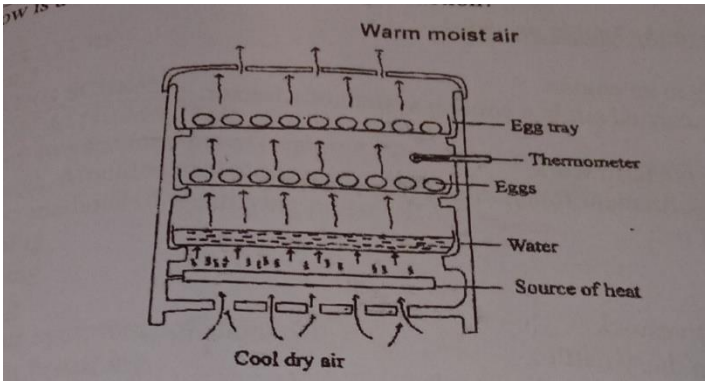
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19. Below is structure used in poultry production. Use it to answer the questions that follow.



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a) Identify the structure illustrated above. **(1 mark)**

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b) State the main function of the structure illustrated above. **(1 mark)**

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c)Give the main function of the following in the structure **(3 marks)**

i)Water

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ii)Source of heat

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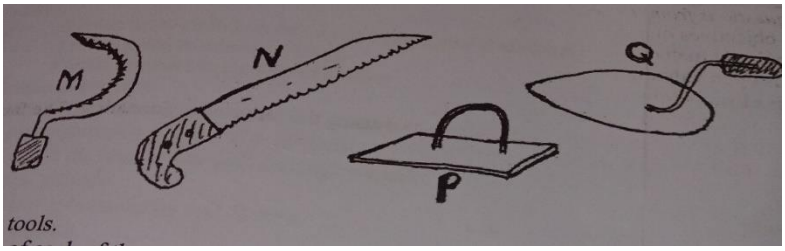
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iii) Thermometer

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20. The diagrams illustrated below shows tools used in the farm. Study the carefully and answer the questions that follow.



a) Identify the tools labelled P and Q. **(2 marks)**

P.....

Q.....

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b) State the use of the tools labelled M and N. **(2 marks)**

M.....

N.....

c) Give **two** ways in which the tools illustrated above depreciate in value. **(1 mark)**

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SECTION C 40 MARKS

ANSWER ONLY TWO QUESTIONS IN THIS SECTION IN THE SPACE PROVIDED

21.a) Explain **ten** advantages of battery cage system in poultry rearing. **(10 marks)**

b) Outline the procedure of training a calf for bucket feeding. **(5 marks)**

c) Outline **five** signs of tapeworm infestation. **(5marks)**

22.a) Explain the functional differences between a disc plough and a mould board plough. **(8mrks)**

b) Explain **eight** factors considered when siting farm structures. **(8 marks)**

c)Outline **four** ways in which infectious diseases can spread in livestock production. **(4 marks)**

23.a) Describe foot rot under the following sub-heading;

i)Animals affected **(1 mark)**

ii)causal organism **(1mark)**

iii)Symptoms of attack **(4 marks)**

iv)Control measures **(4marks)**

b) Describe the function of various parts of a plunge dip. **(10 marks)**

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NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/1

BIOLOGY

THEORY

Paper 1

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 the examination in the spaces provided above

3) Answer ALL the questions in the spaces provided on the question paper

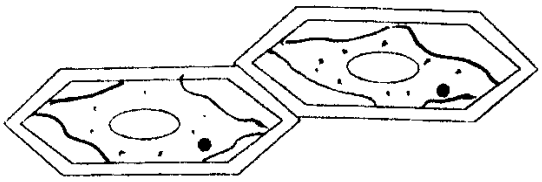
4) Candidates should answer the questions in English

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QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE %
1- 22	80	

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1. Study the diagram below showing a portion of an onion epidermis that had been irrigated with a certain solution X.



a) In <u>one</u> word describe the condition of the cells **(1mk)**

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b) Describe the process that lead to the condition named above. **(3mks)**

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2. The following reaction may proceed in forward or backward direction

Glucose + fructose ⇌ sucrose + water.

a) What term is used to refer to the backward reaction. **(1mk)**

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b) In which part of alimentary canal does the backward reaction occur? **(1mk)**

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c) Name the enzyme that catalyzes the backward reaction. **(1mk)**

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3. A certain metabolic pathway takes the following sequence.

J ⟶ K ⟶ L ⟶ M ⟶ N

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At the start of the experiment an inhibitor was added to the reactants. After the experiment it was found out that there was the same concentration of J, more than normal concentration of K, near absence of L, M and N. When L was added to the inhibitor set M and N were detected.

a) At what stage of the reaction sequence did the inhibitor have its effect? **(1mk)**

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b) Explain how the inhibitor affected the reaction. **(1mk)**

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c) What is the identity of substance L? **(1mk)**

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4. After fertilization of an ovule, which parts develops into: -

a) Testa **(1mks)**

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b) Endosperm **(1mk)**

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5 a) Explain two roles of diffusion in human beings. **(4mks)**

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bi) Name the process through which a plant takes up some mineral ions against a concentration gradient. **(1mk)**

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ii) State two factors that may affect the process named in b(i) above. **(2mks)**

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c) Distinguish between haemolysis and plasmolysis. **(1mk)**

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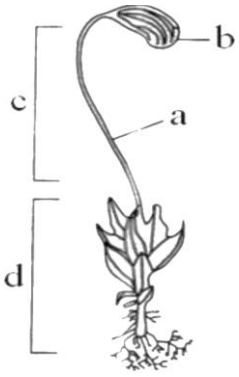
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6. An insect landed on a leaf of an insectivorous plant. Consequently, the leaf closed with its spines interlocking trapping the insect inside it. Name the response exhibited by the leaf. **(1mk)**

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7. The figure below represents a plant.



a) State the division it belongs to**.** **(1mk)**

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b) Label the parts labeled **(2mk)**

a. ……

b. ……

c) State the role of part labeled **d** in the life cycle of the organism. **(1mk)**

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8. State any two adaptations of the cardiac muscle that enable it to undergo systole. **(2mks)**

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9. A respiratory substrate has the formula $C_{57}H_{110}O_6$.

a) Write a balanced equation to represent its complete oxidation to carbon dioxide and water. **(1mk)**

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b) Why are carbohydrates and not lipids the first choice respiratory substrates? **(2mks)**

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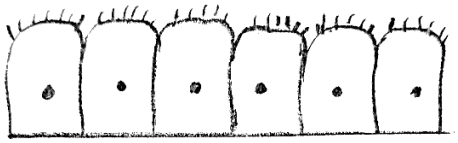
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c) Calculate the RQ from the equation in (a) above. **(2mks)**

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10. Below is a diagram of a group of cells of a specific tissue.



i)Name the tissue **(1mk)**

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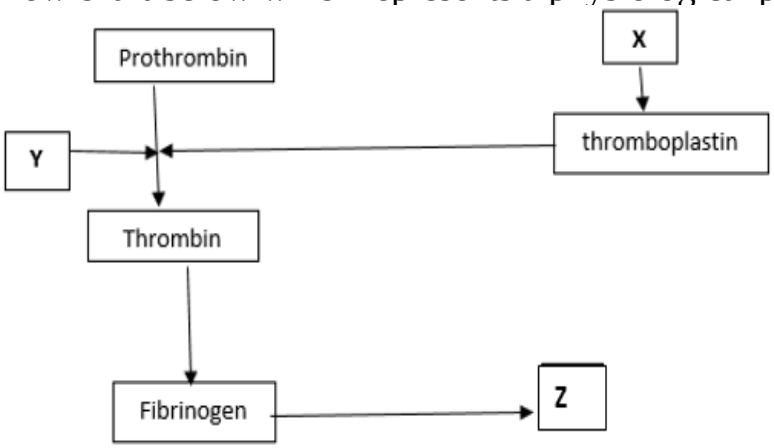
ii) This tissue lines the trachea and bronchi. Suggest its function in these structures. **(1mk)**

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11. Study the flow chart below which represents a physiological process in mammals



ai) Name blood components represented by **X.** **(1mk)**

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ii) What is the significance of product represented by **Z**. **(2mks)**

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b) Under what condition is thrombokinase released by the platelets? **(1mk)**

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12 a) Explain what happens to excess amino acids in the liver of humans**.** **(3mks)**

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b) Which portions of the human nephron are only found in the cortex? **(1mks)**

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13. A potted plant is transferred from outside on a sunny and windy day, to a dark room.

a) Briefly explain the effect this is likely to have on:

i)The rate of loss of water from its leaves. **(3mks)**

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ii)The rate of water absorption. **(2mks)**

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14. Give a reason why urine of a mammal does not contain amino acids**.** **(1mks)**

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15.a) In what form is energy stored in muscles? **(1mk)**

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b) State the role of insulin in human body. **(3mks)**

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16. Name the processes that take place in the liver to bring about differences between blood in the Hepatic portal vein and that in the hepatic vein. **(3mks)**

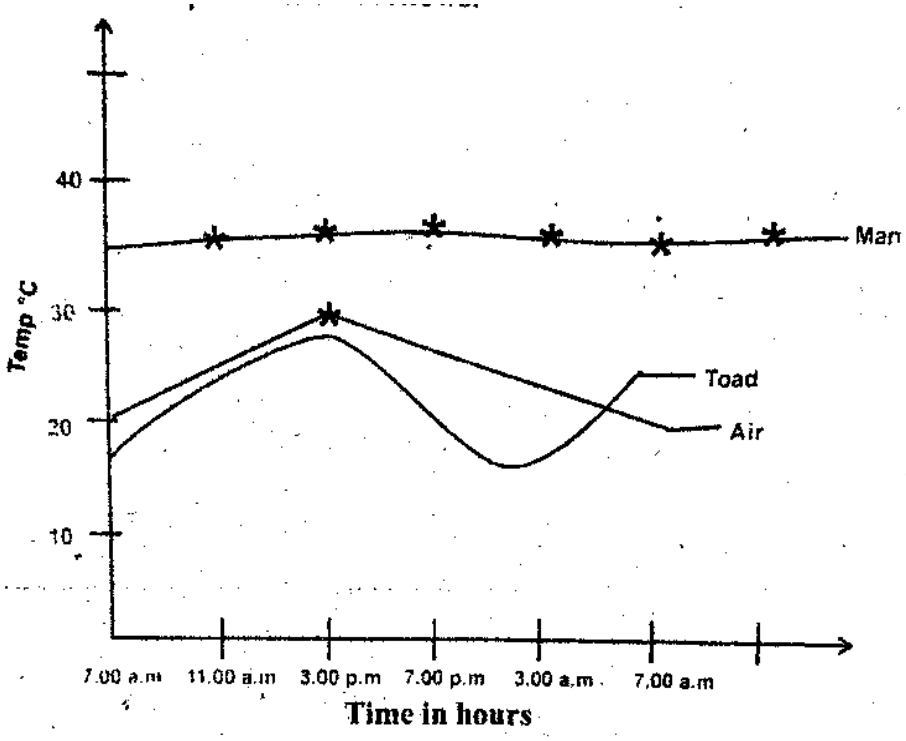
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17. The graph below shows how the body temperature of a toad and man varies with time in hours. Study it and answer the questions that follow.



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a) What is the relationship between the body temperature of the toad and that of the atmospheric air? **(1mk)**

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b) State two corrective measures that maintains man's body temperature at norm even when the environmental temperature is below 30^0C. **(2mks)**

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c) Give one behavioral adaptation observed in a lizard when the environmental temperature is above 39^0C. **(1mk)**

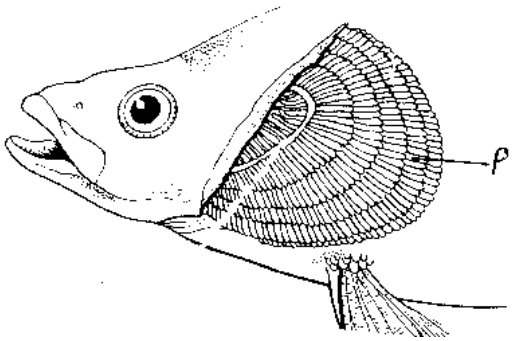
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18. The figure below shows the exposed breathing apparatus of a fish.



a) Name the structure that was removed to expose the apparatus. **(1mk)**

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b i) Name structure P. **(1mk)**

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ii) State two structural adaptations of the respiratory surface in insects. **(2mks)**

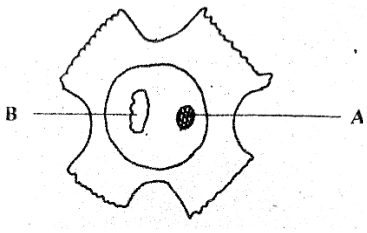
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19. The following is a reproductive structure of a plant.



a) Identify the structure. (1mk)

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b) Name the sub-division of the plants that produces the above reproductive structure. **(1mk)**

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ci) Name structure B. **(1mk)**

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ii) What is the function of structure A? **(1mk)**

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20. Nucleic acids are made up of nucleotides that bears a sugar component.

a) Name the sugar component found in: - **(2mks)**

i) DNA fragment.....

ii) RNA fragment .....

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b) The following nucleotide sequence was found in a segment of DNA: - **A G C C T.**
Write down the complementary base sequence in the corresponding m RNA segment during transcription. **(1mk)**

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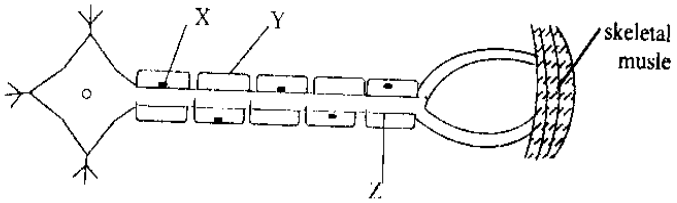
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c) A point mutation altered the base sequence from the original to **G G C C T**.
Identify the type of gene mutation. **(1mk)**

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21. Below is a drawing of a cell.



a) With two reasons, identify the cell. **(3mks)**

Identify. .....

Reasons:

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b) Which of the three structure X, Y and Z speeds up transmission of the impulse. **(1mk)**

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22.a) State two structural differences between skeletal muscles and smooth muscles. **(4mks)**

Skeletal muscle	Smooth muscle

b) What are antagonistic muscles? (1mk)

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……...

231/2
BIOLOGY
THEORY
Paper 2
Time: 2 Hours

INSTRUCTIONS TO CANDIDATES:

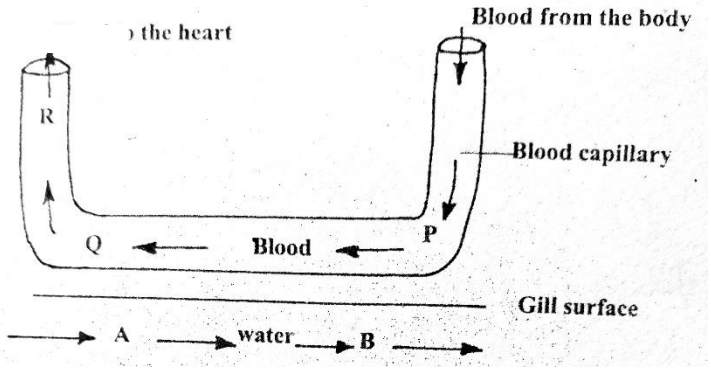
- *Write your **name** and **admission number** in the spaces provided.*
- *Answer **all** the questions in this paper in the spaces provided.*
- ***Answer questions 1-6 (compulsory) and either question 7 or 8.***

For Examiner's Use Only:

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1	8	
2	8	
3	8	
4	8	
5	8	
6	20	
7 or 8	20	
TOTAL SCORE		

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1. The diagram below represents the direction of flow of blood in a gill capillary. The percentage of oxygen in solution at position A, B, P, Q and R is given in the table below.



Position	Oxygen concentration in solution (%)	Haemoglobin saturation with oxygen (%)
A	10	
B	7	
P	4	55
Q	7	85

a) Why is the oxygen percentage low at P? **(1mk)**

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b) Using evidence from the data given, suggest what will happen to oxygen in the water at point B. **(3mks)**

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c) Name the organ into which blood coming from the capillary at Q flows. **(1mk)**

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d) Suppose the flow of blood in the capillary illustrated above was in the opposite direction, explain the disadvantage it would have to the fish. **(2mks)**

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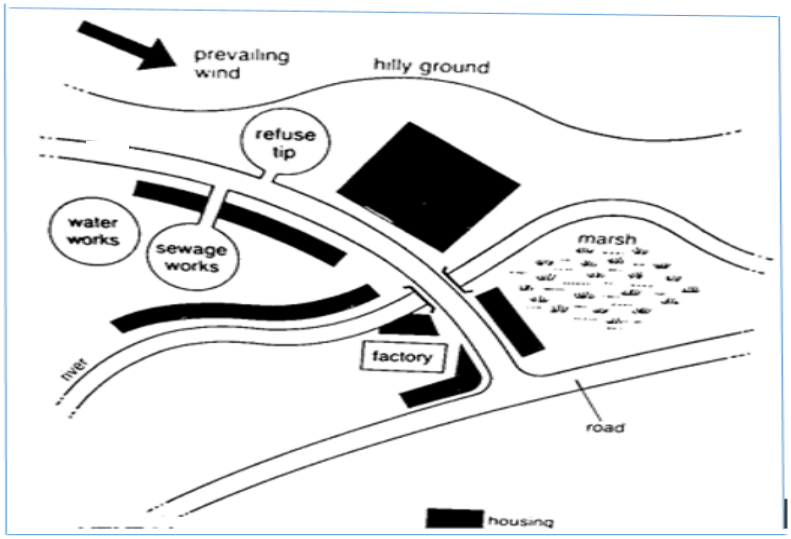
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e) Name the principle where the blood flows in the opposite direction to another fluid. **(1mk)**

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2. Below is a diagram of a poorly planned town showing some building and facilities.



a) Giving evidence from the diagram, state two likely sources of water pollution**.** **(2mks)**

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b) State three ways that the positioning of the refuse pit and sewage works pose danger to the residence of the town. **(3mks)**

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c) Residents living close to the marsh are likely to suffer from malaria. Explain**.** **(1mk)**

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d) Suggest two control measures to overcome water pollution in the area. **(2mks)**

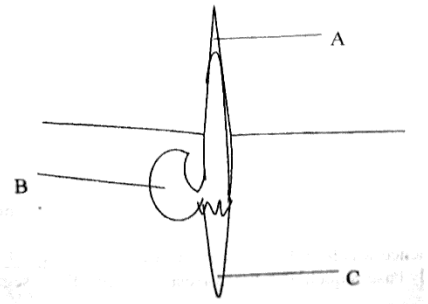
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3. The diagram below represents a maize seedling.



a) Name the structure labeled A and C **(2mks)**

A -.....

C -.....

b) State the functions of parts labeled A, B and C. **(3mks)**

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c) Name the type of germination exhibited by maize **(1mk)**

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d) Name two conditions necessary for seed germination other than water and oxygen. **(1mk)**

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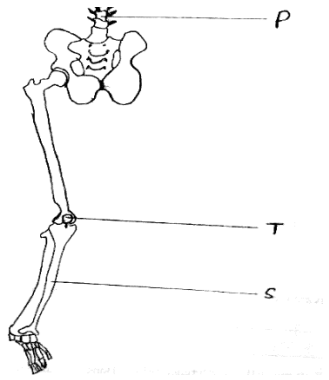
e) What is the role of oxygen in seed germination? (1mk)

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4.The figure below shows part of a human skeleton.



a) Which part of the human skeleton is it**?** **(1mk)**

.....

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b) On the diagram label by name three types of joints. **(3mks)**

c) Label the S, T and P. **(3mks)**

S -.....

T -.....

P -.....

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d) Which two bones on the diagram manufactures red blood cells? **(1mk)**

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5. In maize the gene for purple colour is dominant to the gene for white colour.

A pure breeding maize plant with purple grains was crossed with a heterozygous plant.

a) Using letter G to represent the gene for purple colour, work out the genotypes of the offspring. **(4mks)**

b) State the phenotype of the offspring. **(1mk)**

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c) What is genetic engineering? **(1mk)**

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d) Gene for smooth seed coat is dominant over gene for wrinkled seed coat.

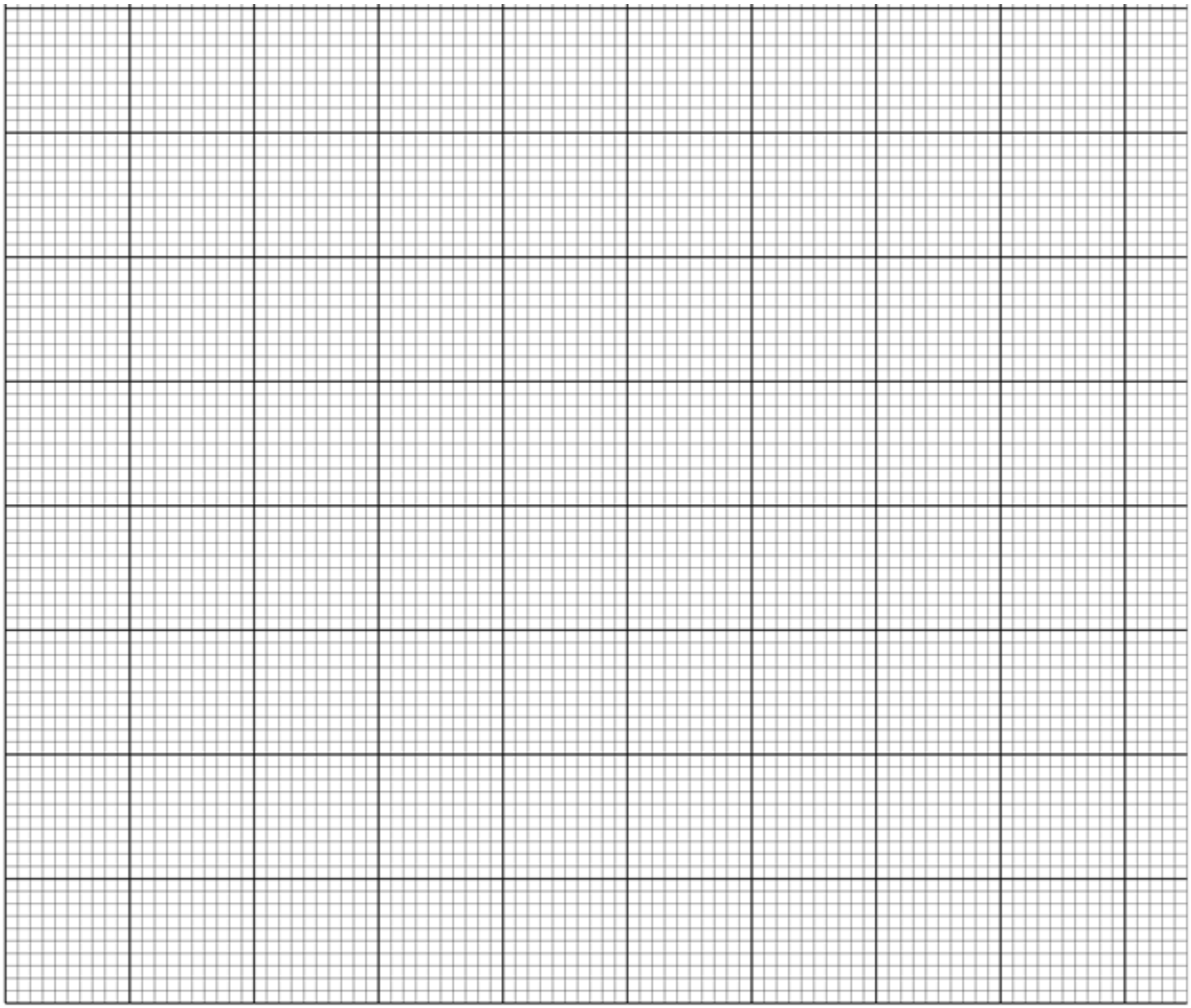
Two heterozygous pea plants with smooth seed coats were crossed and produced a total of 14640 seeds. How many seeds had wrinkled seed coat? Show your calculations. **(2mks)**

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6. The diagram below is obtained from measurements of growth in the leaf petiole of a certain plant. The relative growth rate is calculated and the data is obtained as shown below.

Time in days	0	1	2	3	4	5	6	7	8	9
Relative growth rate(cm/day)	0	0.1	0.3	0.8	2.0	4.0	4.5	3.5	0.2	0

a) Plot a graph of relative growth rate against time. **(5mks)**



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c) State two characteristics of cells found in the region of cell division. **(2mks)**

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d) Account for the shape of the curve between the following days **(3mks)**

i) 2 – 5.

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ii) 6 – 8 **(3mks)**

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iii)6 – 8 **(3mks)**

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d) Distinguish between primary growth and secondary growth in a flowering plant. **(2mks)**

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7. How are flowers adapted to wind and insect pollination? **(20mks)**

8a) Name factors that affects the enzyme controlled reactions. **(6mks)**

b) Explain the factors that affect the rate of enzyme activity. **(14mks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……...

BIOLOGY

PAPER 3

(PRACTICAL)

TIME: 1 ¾ HOUR

INSTRUCTIONS TO CANDIDATES

Answer all the questions in the spaces provided.

You are required to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.

Additional pages must not be inserted.

FOR EXAMINERS USE ONLY.

Question	Maximum score	Candidates score
1	17	
2	09	
3	14	
Total score	**40**	

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1. You are provided with specimen P and Q. Examine them carefully and answer the questions that follow.

(a). State three observable differences between P and Q**.** **(3mks)**

Specimen P	**Specimen Q**

(b) Identify the parts of the flower from which specimen **P** and **Q** developed**.** **(2mks)**

P .....

Q .....

(c i). Make a longitudinal section of specimen P. Draw a well-labelled diagram of one half with all its Contents intact. **(4mks)**

(ii). State the functions of any two structures in (c) (i) above. **(2mks)**

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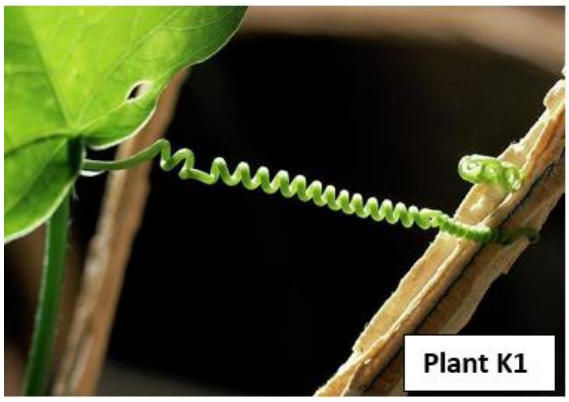
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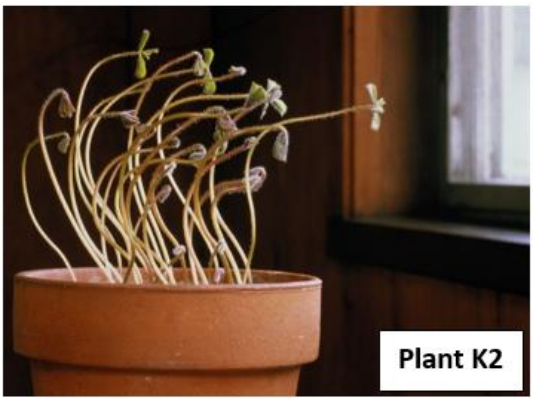
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(d). Using a mortar and pestle crush specimen Q, add 5ml distilled water to make a **solution Q** and carry out appropriate tests using the reagents provided. **(6mks)**

Test	Procedure	Observation	Conclusion

2. Study the photos below.





a) Name:-

i) The stimulus operating in **Plant K1.** **(1mk)**

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ii) The type of response being investigated in **Plant K2.** **(1mk)**

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iii) Suggest a control set up for **Plant K2** investigation. **(1mk)**

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b) Describe the role of auxins in the response exhibited by **Plant K1.** **(4mks)**

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c) What is the biological value of the tropisms evident in: -

i) **Plant K1** **(1mk)**

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ii) **Plant K2** **(1mk)**

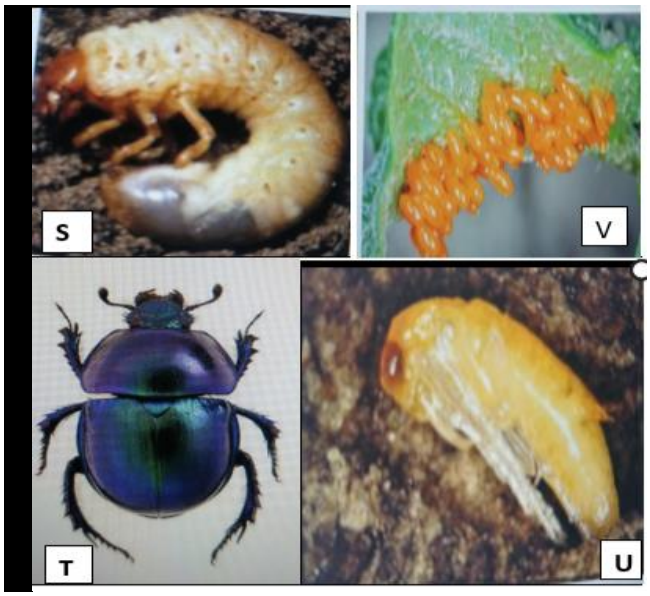
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3. Below are photos of of a certain arthropod at different stages of its life cycle.



a) Identify the stage of the life cycle represented by organism **S**. **(1mk)**

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b i) Name the stage that immediately preceed and succeed organism S in the life cycle. **(2mks)**

Preceeding stage

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Succeeding stage.

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ii) What name is given to the complete life cycle of the arthropod? **(1mk)**

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c) Name the gaseous exchange system of orgaism **S**. Give a visible featuret that supports your answer. **(2mks)**

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d i) What type of food does organisms **S** feed on? Give a reason to support your answer. **(2mks)**

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ii) State the significance of stage **U** in the life cycle of the beetle. **(2mks)**

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iii)How is specimen T adapted to locomotion in its habitat **?** **(2mks)**

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e) State the role of the following in the life cycle of the arthropods. **(2mks)**

i) Juvinile hormone.

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ii) Moulting stimulating hormone.

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

565/1

BUSINESS STUDIES

PAPER 1

TIME: 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 the examination in the spaces provided above.

(c) This paper consists of **25** questions.

(d) Answer ALL questions in the spaces provided

(e) This paper consists of **10** printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing

(f) Candidates should answer the questions in **English**

For Examiner's Use Only

Question	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

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1. State four merits associated with internal borrowing **(4 marks)**

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2. State four consequences that may arise due to poor arrangement of goods in a warehouse **(4 mrks)**

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3.The inflation rate in county moved from 6.1% to 7.6%. State four positive outcomes of this change **(4 marks)**

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4. The following balance sheet was incorrectly prepared

CHUMA Enterprises
Balance sheet
As at 31st October 2020

Capital	100,000	Bank overdraft	15,000
Stock	28,000	Motor vehicle	70,000
Cash in hand	4,000	Debtors	37,000
Fixtures	2,000	Creditors	26,000
	134,000		148,000

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Prepare the correct balance sheet arranged in **order of liquidity** to show fixed assets, current assets, current liabilities and capital. **(4 marks)**

5. Highlight four circumstances under which a manufacturer would find it necessary to carry out market research. **(4 marks)**

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6. State four factors that determine the amount of revenue collected by Kenyan government through taxation. **(4marks)**

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7. Other than the use computers in an office, mention four recent trends in office management. **(4 marks)**

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8. State any four principles that govern the operations of co-operative societies in Kenya **(4 marks)**

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9. The table below represents quantity of commodity X demanded by consumer **A and B.**

Price per unit of x	**Quantity of x demanded by A in a week.**	**Quantity of commodity X demanded by B in a week.**
20	200	400
10	200	600
5	300	700
2	400	800

State four possible reasons why B demands more of commodity X at every price than A **(4 marks)**

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10. Outline fou**r** ways in which a good business structure is of benefit to a business organization **(4 marks)**

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11. Outline four factors that determine the amount of money that an individual may hold in order to meet unexpected expenses **(4 marks)**

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12. Give four reasons why the Kenya government has been organizing seminars and workshops for training youth in businesses **(4 marks)**

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13. Mention four circumstances under which an entrepreneur may establish his/her business where other businesses already exist **(4 marks)**

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14. Give four differences between a public limited company and a partnership. **(4 marks)**

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15. Highlight four measures that a government may take to correct a balance of payment deficit in the county **(4 marks)**

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16. Juma traders had the following information

Opening stock	40,000
Closing stock	55,000
purchases	200,000
Margin	25%

Required

a.) Calculate Juma's Rate of stock turn over. **(3marks)**

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b.) State the importance of having a low rate of stock turnover. **(1mark)**

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17. Outline four ways in which the nature of a product influences the choice of distribution channel. **(4 marks)**

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18. Mention four circumstances under which a retailer may return goods to a wholesaler. **(4 marks)**

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19. State four reasons why billboards are popular in product promotions **(4 marks)**

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20. The following balances were obtained from the books of sunset traders as at 30th June, 2004.

Stock 1st July 2003	45,000
Purchases	159,000
Sales	235,000
Stock 30/June/2014	33,000
Capital	75,000
Return outwards	3,000
Operating expenses	13,000

Calculate:

i) Stock turnover rate. **(2 marks)**

ii) Return on capital. **(2 marks)**

21. State four ways in which legal political environment may improve business performance **(4 marks)**

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22. Distinguish the following types of goods as used in production.

i) Producer goods and consumer goods. **(2 marks)**

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ii) Intermediate goods and finished goods. **(2 marks)**

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23. The following cashbook was prepared by Kajuka Traders for the month of July 2021.

kajuka traders'

Cash book

kajuka traders'
Cash book

Dr Cr.

Date	Details	lf	cash	Bank	Date	Details	LF	cash	Bank
2021					**2021**				
July 2	Balance	b/d	**Y**		July 4	Balance	b/f		60,000
July 8	Sales		20,000		July 13	Purchases			30,000
July 18	Akinyi			50,000	July 21	Rent		6,000	
July 25	Sales			120,000	July 27	Balance	c/d	P	**Q**
				170,000				60,000	R

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Calculate the missing figures. (4 marks)

(i) Y

(ii) P

(iii)

(iv) R

24. Mention four benefits that may be enjoyed in a country that is experiencing over-population **(4 marks)**

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25. Highlight four limitations posed by the use of national income statistics as a way of comparing the living standards of people for different countries. (**4 marks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE:……

565/2

BUSINESS STUDIES

PAPER 2

TIME: 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 the examination in the spaces provided above.

(c) This paper consists of **6** questions.

(d) Answer ANY FIVE questions in the spaces provided

(e) This paper consists of **3** printed pages. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing

(f) Candidates should answer the questions in **English**

For Teacher's Use Only

Question	Maximum Score	Candidate's Score
	20	
	20	
	20	
	20	
	20	
	Total Score	

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1. a) Explain **five** methods used by central bank to increase money supply in the economy. **10mks)**

b) Discuss **five** ways in which the government can reduce unemployment levels in Kenya. **(10mks)**

2. a) Explain **five** factors that may limit the use of containers as a method of transporting goods in a developing country. **(10mks)**

b) The following Trial balance was extracted from the books of Kabaka traders as at 30/6/2018.

Kabaka Traders

Trials balance as at 30/6/2021

Particles	Dr	Cr
Sales		900,000
Purchases	600,000	
Return inwards	80,000	
Carriage inwards	40,000	
Return outwards		20,000
Carriage outwards	3,000	
Stock 1st Jul 2017	100,000	
Rent	60,000	
Delivery van	180,000	
Bank	60,000	
Creditors		170,000
Debtors	120,000	
Discount allowed	80,000	
General expenses	18,000	
Capital		178,000
	1,268,000	1,268,000

Stock on 30th June 2018 was valued at 135,000/=

Required:

Prepare Kabaka Traders Trading profit and loss A/c.

3 a) Explain **five** advantages of government involvement in Business. **(10mks)**

b) Discuss five factors that may influence entrepreneurial practices positively in the country **(10mks)**

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4. a) Apart from selling of shares, explain **five** other sources of finance for public limited company. **(10mks)**

b) Explain **five** features of oligopoly. **(10mks)**

5 a) Muema is planning to construct a warehouse for renting. Explain **five** measures that he may take to ensure its smooth operation. **(10mks)**

b) Outline **five** measures that the Kenya government may take to reduce unemployment. **(10mks)**

6 a) Explain **five** methods used to distribute imported manufactured goods. **(10mks)**

b) The following transactions relates to Konate Traders for the month of December 2010.

Dec 1st Started a business with sh. 200,000 in the Bank account.

2nd Bought furniture for sh, 50,000 and paid by cheque

3rd Sold goods on credit to Tilashs, 20,000; Katu 10,000

4th Bought goods on credit from Kahamash 30,000; Kanga shs. 40,000

5th Returned faulty goods to Kahamash 5,000

6th Paid Kahama on account by cheque less 10% cash discount.

7th Received faulty goods from Katushs. 2000

8th Received payment due from Tila and Katu by cheque less 5% cash discount.

9th Cash sales shs. 100,000

10th Paid for wagesshs. 20,000 by cash and electricity shs.10,000 by cheque.

11th Deposited all the cash in hand into the bank account.

Required:

Prepare a three-column cash book duly balanced **(10mks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE:……

233/1

Chemistry

Theory

Time: 2 Hours

Instructions to Candidates

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

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

(c) Answer ALL questions in the spaces provided.

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

(e) All working must be shown clearly where necessary.

(f) This paper consists of 10 printed pages

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

For examiner's use only

Questions	Maximum score	Candidates score
1 – 27	**80**	

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1 (a) What is a universal indicator? **(1mark)**

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(b) State **one** advantage of universal indicator over other commercial indicators. **(1mark)**

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2. Complete the diagram below on identification and uses of some laboratory apparatus.

Diagram		
Name	(a) **(½ mark)**	(c) **(½ mark)**
Purpose	(b) **(1mark)**	(d) **(1mark)**

3 (a) In an experiment, sulphur was heated in a deflagrating spoon until it begins to burn then lowered into a gas jar. Explain the observations made. **(2 marks)**

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(b) Explain the role of oxygen in steel making. **(2 marks)**

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4 (a) State Graham's law of diffusion. **(1mark)**

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(b) At what temperature, in K, assuming constant pressure, is the volume of a fixed mass of gas at 127^{o}C doubled? **(2 marks)**

5 (a) Distinguish between a temporary physical change and temporary chemical change. **(2 marks)**

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(b) In an experiment, the following substances were heated in separate test tubes. Complete the table to state the observations and classifying the type of change that occurs. **(3 marks)**

Solid	**Observations on heating**	**Type of change**
$CuSO_4.5H_2O$		
$KMnO_4$		

6. Explain how you would distinguish between ethane and ethyne. **(2 marks)**

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7. Explain how solid calcium sulphate can be prepared from solid samples of calcium carbonate and sodium sulphate. All other reagents and apparatus are provided. **(3 marks)**

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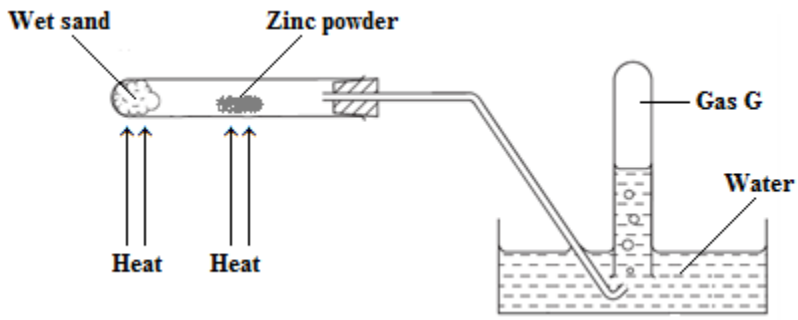
8 (a) A metal reacts with dilute hydrochloric acid to produce a gas. Explain how to identify the gas. **(1mark)**

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(b) The diagram below shows the set up used for the reaction between magnesium and steam.



(i) Explain the observations made. **(2 marks)**

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(ii) Explain why the wet sand must be heated first before the zinc powder is heated. **(1mark)**

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9 (a) Distinguish between covalent bond and co-ordinate bond. **(2 marks)**

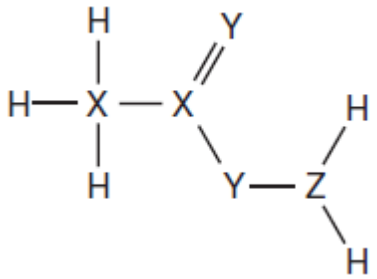
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(b) The diagram below shows the structure of a covalent compound containing the element hydrogen, H, and the unknown elements X, Y and Z.



To which groups of the Periodic Table do these three elements, X, Y and Z, belong? **(1½ marks)**

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10. In an experiment silicon (IV) chloride is dissolved in water in a boiling tube.

(a) Write an equation for the reaction that occurs. **(1mark)**

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(b) Explain the observations that were made during the experiment. **(3 marks)**

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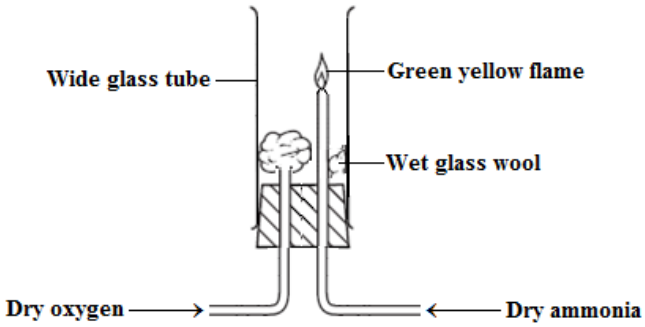
11. A standard solution of potassium hydroxide (KOH) is prepared in a 250 cm^3 volumetric flask. During a titration, 12.5 cm^3 of this solution neutralizes 25 cm^3 of a 0.16 $moldm^{-3}$ ethanoic acid solution.

The balanced equation for the reaction is: $CH_3COOH_{(aq)} + KOH_{(aq)} \rightarrow CH_3COOK_{(aq)} + H_2O_{(l)}$

Calculate the mass of potassium hydroxide used to prepare the solution above in the 250 cm^3 volumetric flask.

(K = 39, O = 16.0, H = 1.) **(3 marks)**

12. Ammonia gas was burnt in oxygen as shown in the diagram below.



(a) State the role of the glass wool. **(1mark)**

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(b) State the observations made during the experiment. **(1mark)**

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(c) Write an equation for the reaction that occurs. **(1mark)**

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13. Study the following reaction at equilibrium at a certain temperature.

$$2SO_{3(g)} \rightleftharpoons O_{2(g)} + 2SO_{2(g)} \quad \Delta H > 0$$

(a) State **two** optimum conditions for this reaction. **(1mark)**

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(b) State **two** ways of increasing the yield of $SO_{3(g)}$. **(2 marks)**

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14 (a) Write the equation for the reaction between chlorine and cold dilute sodium hydroxide.

(1mark)

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(b) When chlorine gas reacts with hot concentrated calcium hydroxide, one of the products formed is calcium hypochlorite ($CaOCl_2$). This commonly referred to as bleaching powder. Explain the bleaching action of calcium hypochlorite. **(2 marks)**

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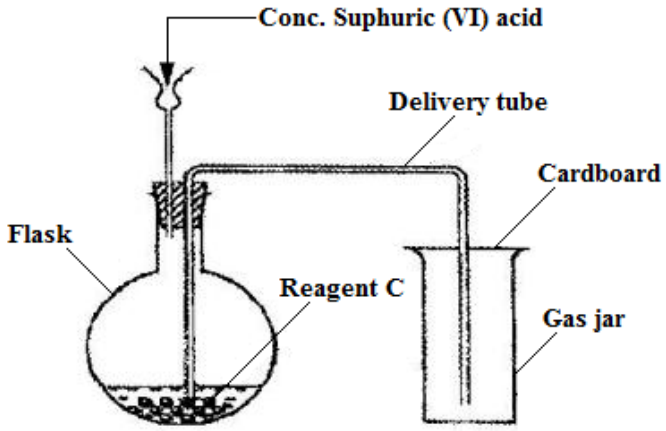
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15. The diagram below shows an apparatus for the laboratory preparation of carbon (II) oxide.



(a) Identify **two** mistakes in the set up. **(2 marks)**

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(b) Write an equation for the reaction between concentrated sulphuric (VI) acid and reagent C.

(1mark)

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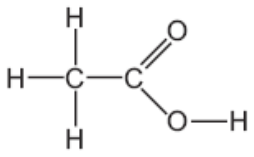
(c) State **one** use of carbon (II) oxide. **(1mark)**

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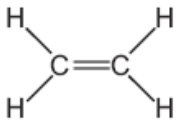
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16. The structures of four organic compounds are shown.

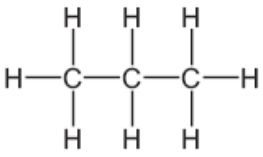
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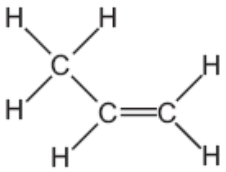
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(a) Which compounds decolourize bromine water? **(1mark)**

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(b) Explain **one** chemical test that can be used to distinguish between compounds 1 and 2. **(2 marks)**

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17. How does the number of carbon, hydrogen and oxygen atoms in an ester differ from the total number of carbon, hydrogen and oxygen atoms in the alcohol and carboxylic acid from which the compound was derived? **(1½ marks)**

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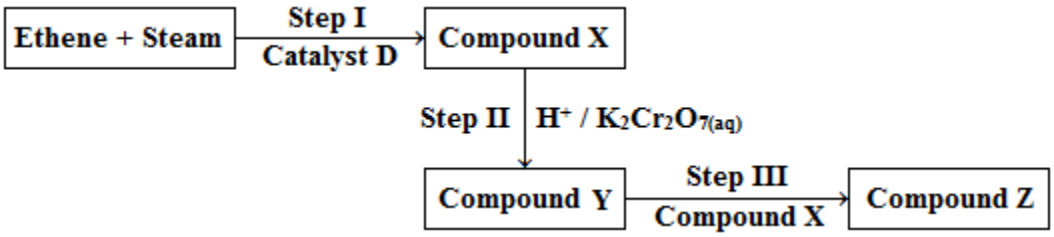
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18. The diagram shows a reaction scheme.



(a) Name:

(i) Catalyst D .....

(ii) Reaction II .....

(iii) Reaction III .....

(iv) Compound Z ..... **(4 marks)**

(b) State the observations made in step II. **(1mark)**

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(c) Write an equation for the reaction that occurs in step III. **(1mark)**

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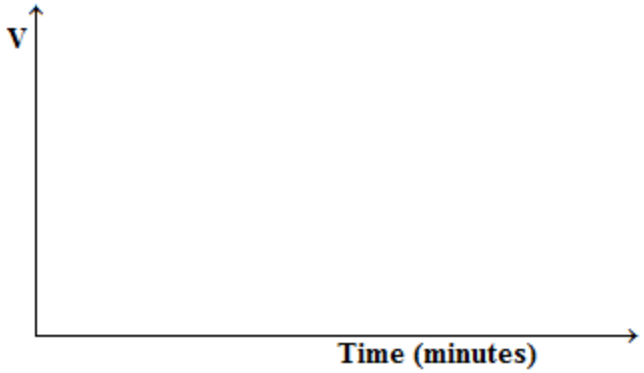
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19. A student performs two reactions.

- reaction 1: 10 g of magnesium ribbon with excess 2.0 mol / dm^3 dilute hydrochloric acid
- reaction 2: 5 g of magnesium powder with excess 2.0 mol / dm^3 dilute hydrochloric acid

In both experiments, the volume of hydrogen produced, V, is measured against time, t, and the results plotted graphically.

(a) On the grid below, sketch a graph that would be obtained is volume of hydrogen produced is plotted against time for both reactions1 and 2. **(2 marks)**



(b) Explain your answers. **(2 marks)**

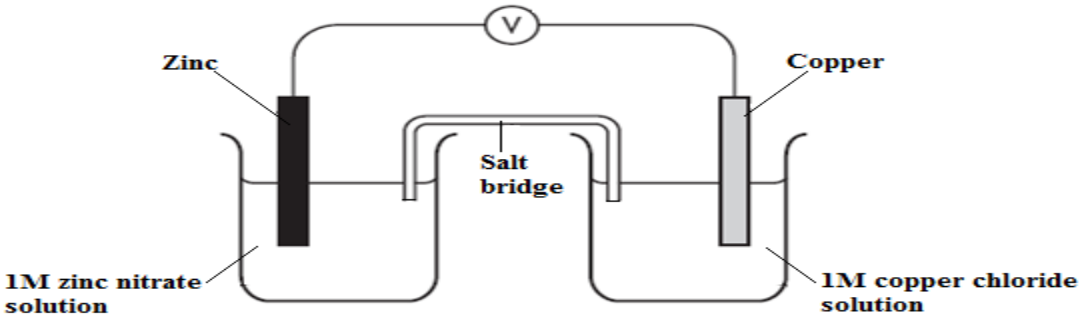
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20. A copper – zinc electrochemical cell is set up as shown below.



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Lead (II) nitrate is used as an electrolyte in the salt bridge.

(a) Initially the cell did not work. Explain. **(2 marks)**

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(b) Once the mistake identified in (a) above was corrected:

(i) Write the equation for the reaction at the anode. **(1mark)**

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(ii) Determine the E.m.f of the cell given that: **(2 marks)**

$Zn_{(s)} \rightarrow Zn^{2+}_{(aq)} + 2e;\ E^{\Theta} + 0.76V$

$Cu_{(s)} \rightarrow Cu^{2+}_{(aq)} + 2e;\ E^{\Theta} - 0.34V$

21. When a solution containing silver ions is added to a solution containing iron (II) ions, an equilibrium is set up.

$2Ag^{+}_{(aq)} + Fe^{2+}_{(aq)} \rightleftharpoons 2Ag_{(s)} + Fe^{3+}_{(aq)}$

(Green) (Yellow)

Explain the effect of addition of silver nitrate to the equilibrium mixture. **(2 marks)**

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22 (a) One of the ores of sodium is saltpetre. Give the formula of saltpetre. **(1mark)**

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(b) In the Down's cell, the anode is made of carbon while the cathode is made of steel. Steel is a reactive electrode and would make the electrolytic process faster. Explain why it is not used at the anode despite this advantage. **(1mark)**

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(c) Write **two** equations that occur at the anode during the electrolysis process. **(2 marks)**

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23 (a) What is half life as used in radioactivity? **(1mark)**

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(b) A certain nuclide has a half-life of 1.5 seconds.

(i) What is a nuclide? **(1mark)**

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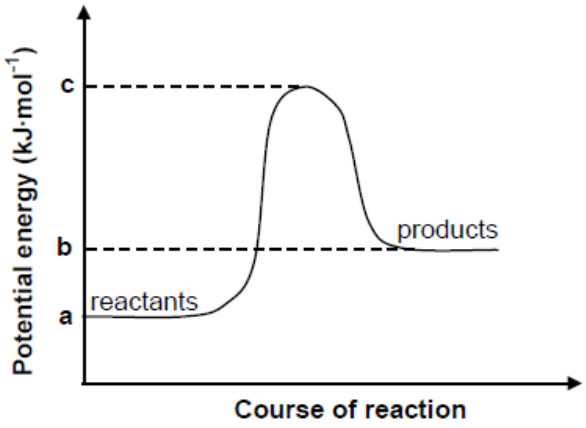
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(ii) What percentage of a given mass of the nuclide will be left after 7.5 hours? **(2 marks)**

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24. The potential energy graph for a hypothetical chemical reaction is shown below.



(a) What type of reaction is taking place? **(1mark)**

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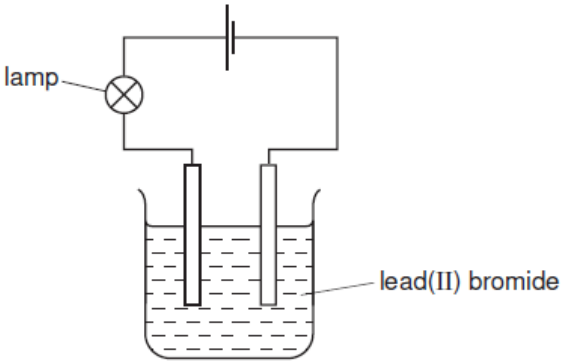
(b) What are the correct methods to calculate ΔH and E_a? **(2 marks)**

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25. The diagram shows the apparatus used to electrolyse lead (II) bromide using inert electrodes.



Why does the lamp light up only when the lead (II) bromide is melted? **(2 marks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/2

Chemistry

Theory

Time: 2 Hours

Instructions to candidates

(a) Write your name and class number in each of the foolscaps answer sheets.

(b) Sign and write the date of examination in each of the foolscap answer sheets.

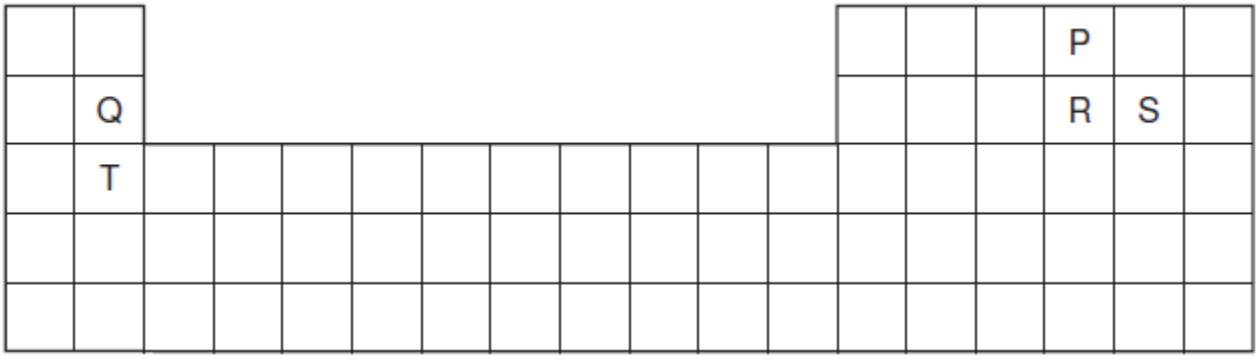
(c) Answer **all** the questions in this paper on one side of each foolscap.

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Question Number	Maximum score	Candidate's score
1	13	
2	12	
3	9	
4	10	
5	11	
6	12	
7	13	
TOTAL	**80**	

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1. The diagram shows part of the Periodic Table. The letters are not the actual symbols of the elements.



(a) Compare the reactivity between elements Q and T. **(2 marks)**

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(b) Explain the electrical conductivity of the chloride of element T. **(2 marks)**

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(c) Compare the melting and boiling points of elements R and S. **(2 marks)**

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(d) Write an equation for the second ionization energy of element Q. **(1mark)**

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(e) How does the atomic and ionic radius of each of the following elements compare?

(i) Element T. **(1½ marks)**

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(ii)Element P **(1½ marks)**

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(f) Compare atomic radius of elements R and Q. **(1½ marks)**

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(g) Explain the difference in the melting points of the oxides of element Q and the oxide of element R**. (1½ marks)**

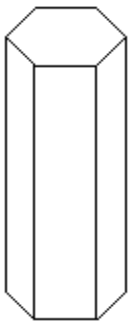
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2 (a) The diagram below shows the structure of an allotrope of sulphur



(i) What are allotropes? **(1mark)**

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(ii) Identify the allotrope shown in the diagram above. **(1mark)**

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(iii) State **two** properties of the allotrope above. **(2 marks)**

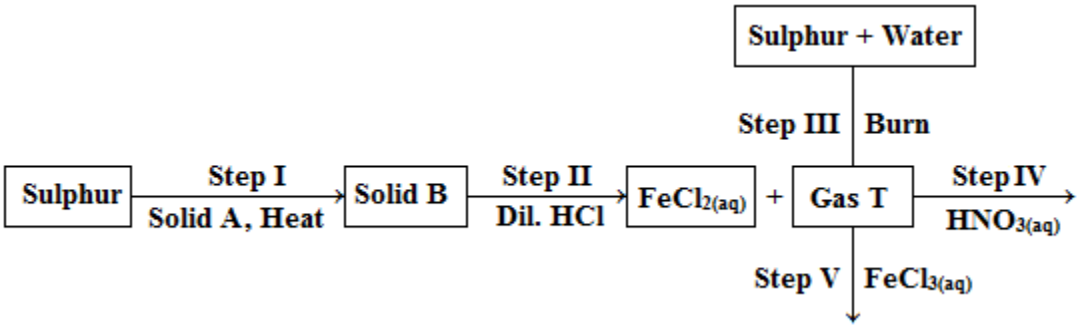
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(b) Study the flow chart below and answer the questions that follow.



(i) Write the equation for the reactions in:

I. step I. **(1mark)**

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II. Step II. **(1mark)**

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(ii) State **two** observations made in step II. **(2 marks)**

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(iii) Explain the observations made in:

I. Step IV. **(1½ marks)**

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II. Step V. **(1½ marks)**

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(iv) State **one** use of gas T. **(1mark)**

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3. Next to each letter, **A** to **F**, in the table below is the molecular formula of an organic compound.

A	C_2H_5Br	**B**	C_2H_4
C	C_4H_{10}	**D**	C_2H_6O
E	C_3H_6O	**F**	$C_3H_6O_2$

(a) Choose a molecular formula above that represents an organic compound below. Write down only the letter (A to F) next to the question numbers

(i) A haloalkane **(½ mark)**

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(ii) An alcohol **(½ mark)**

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(iii) An unsaturated hydrocarbon **(½ mark)**

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(iv) A product of thermal cracking of compound C. **(½ mark)**

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(b) If compound F is a carboxylic acid, write down the following:

(i) The structural formula of a functional isomer (an isomer with a different functional group) of F. **(1mark)**

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(ii) The IUPAC name of a functional isomer of F. **(1mark)**

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(c) Compound B is a monomer used to make a polymer. Write down the:

(i) Definition of a polymer. **(1mark)**

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(ii) IUPAC name of the polymer. **(1mark)**

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(iii) Balanced equation for the polymerisation reaction **(1mark)**

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(d) Compound A is used as a reactant in the production of compound D.

(i) Name the type of reaction that takes place. **(1mark)**

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(ii) State two changes that can be made to the reaction conditions in (d) (i) to obtain compound B, instead of D, as product. **(2 marks)**

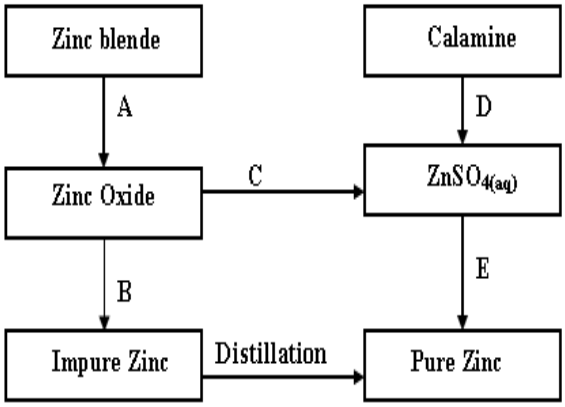
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4. The flow chart below summarizes the extraction of Zinc, study it and answer the questions that follow.



(a) Name the process represented by A and B

A …….. **(2 marks)**

B …….

(b) Identify the reagents required for process B, C and D **(3 marks)**

B …….

C …….

D …….

(c) Write a chemical equation of the reaction that occurs in process B **(1mark)**

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(d) With an aid of a diagram, explain how you would obtain a pure sample of Zinc by process E.

(2 marks)

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(e) State two uses of Zinc metal **(2 marks)**

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5 (a) The table below gives some values of standard enthalpies of formation (ΔH_f^{Θ}).

Substance	$F_{2(g)}$	$CF_{4(g)}$	$HF_{(g)}$
ΔH_f^{Θ} ($kJmole^{-1}$)	0	– 680	– 269

The enthalpy change for the reaction $\mathbf{C_2H_{6(g)} + 7F_{2(g)} \rightarrow 2CF_{4(g)} + 6HF_{(g)}}$ is –2889 kJ mol^{-1}.

Use this value and the standard enthalpies of formation in **Table 2** to calculate the standard enthalpy of formation of $C_2H_{6(g)}$. **(3 marks)**

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(b) In an experiment to determine the enthalpy of solution of concentrated sulphuric (VI) acid (specific gravity = 1.84gcm^{-3}) the following procedure was used:

- A clean 250.0 cm^3 glass or plastic beaker is wrapped with a newspaper leaf.
- About 50.0 cm^3 of tap water is measured into the beaker and the steady temperature noted.

- The beaker is held in a tilted position and 2.0 cm^3 of and sulphuric acid added into the water

(i) Why was the beaker wrapped with newspaper leaf? **(1mark)**

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(ii) Why was the acid added into water and not vice versa? **(1mark)**

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(iii) Explain the reason for tilting the beaker during addition of the acid into water. **(2 marks)**

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(iv) Calculate the molar enthalpy of solution of concentrated sulphuric (VI) acid given that ΔT for the reaction = 1^{o}C. (Density of water = 1gcm^{-3}; specific heat capacity of water = 4.2kJkg^{-1}K^{-1}).

(4 marks)

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6 (a) Consider the electrochemical cell represented by the cell notation below, where X is an unknown metal:

$Pt_{(s)}$ | $Fe^{2+}_{(aq)}$, $Fe^{3+}_{(aq)}$ || $X^{+}_{(aq)}$ | $X_{(s)}$

(The cell potential of this cell was found to be 0.03 V.

(i) Write down the type of electrochemical cell illustrated above. **(1mark)**

(ii) What does the single line (|) in the above cell notation represent? **(1mark)**

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(iii) Write down the half-reaction that takes place at the anode in the above cell. **(1mark)**

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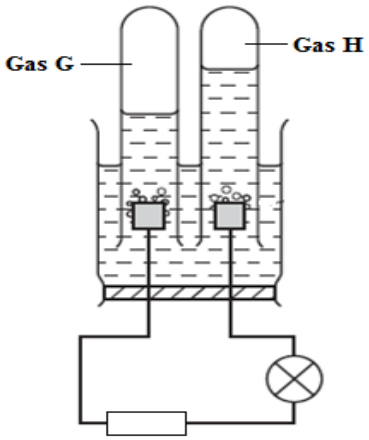
(iv) Given that:

Half reaction	**E^{Θ} (volts)**
$Fe^{3+}_{(aq)} + e \rightarrow Fe^{2+}_{(aq)}$	+ 0.77
$Ag^{+}_{(aq)} + e \rightarrow Ag_{(s)}$	+ 0.80
$Na^{+}_{(aq)} + e \rightarrow Na_{(s)}$	– 2.87
$K^{+}_{(aq)} + e \rightarrow K_{(s)}$	– 2.92

Identify X with the aid of a calculation. **(2 marks)**

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(b) The diagram below shows the apparatus that can be used to electrolyse dilute Sulphuric acid. Study it to answer the questions that follow.



(i) Identify the gases H and G

I. H ..... **(1mark)**

II. G ..... **(1mark)**

(ii) What happens to the concentration of the Sulphuric acid during the process with time? Explain **(2 marks)**

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(iii) During the electrolysis a current of 0.72A was passed through the electrolyte for 15 minutes. Calculate the volume of gas H produced. (1 Faraday = 96,500C, molar gas volume = 24 dm^3 at r.t.p). **(3 marks)**

7 (a) (i) What is a salt? **(1mark)**

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(ii) Write the formula of any **two** double salts. **(1mark)**

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(b) A student has found that her sample of potassium nitrate is contaminated with small amounts of a green solid. She picks out a small piece of the green solid and finds that it is insoluble in water.

(i) Describe how you would make a pure sample of potassium nitrate from the impure mixture. **(3 marks)**

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(ii) The student believes that the green solid is copper (II) carbonate. Describe a series of 3 tests that the student could use to confirm this. **(6 marks)**

Test	**Procedure**	**Observations**	**Conclusion**
1			
2			
3			

(c) In an experiment 50g of a saturated solution of a salt X was heated to dryness in an evaporating dish. The mass of crystals when weighed gave a reading of 2.7g. Determine the solubility of the salt. **(2 marks)**

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NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……..

233/3

CHEMISTRY PAPER 3

PRACTICAL

$2^{1}/_{4}$ HOURS

Instructions to candidates.

(a). Write your name and index number in the spaces provided above.
(b). Sign and write the date of the examination in the spaces provided above.
(c). Answer **ALL** question in the spaces provided in the question paper.
(d). You are not allowed to start working with the apparatus for the first 15 minutes of the 2¼ hours allowed for this paper. This time is to enable you read the question paper and make sure you have all the chemicals and apparatus you may need.
(e). Mathematical tables and silent electronic calculators may be used.
(f). All workings MUST be clearly shown where necessary.
(g). This paper consists of 5 printed pages.
(h). Candidates must check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For examiner's use only

Questions	Maximum score	Candidates score
1	18	
2	6	
3	16	
TOTAL	**40**	

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1. You are provided with:

- Solution A, containing 4.0gdm^{-3} of sodium hydroxide
- Solution B, hydrochloric acid
- 2.5 g of a mixture of two salts, XCl (RFM 58.5) and X_2CO_3 (RFM 106)

You are required to:

(i) Standardize solution B, hydrochloric acid.

(ii) Determine the mass composition of the salt mixture

PROCEDURE 1

1. Fill the burette with solution B
2. Pipette 25 cm^3 of solution A into a clean dry conical flask. Then add 2 -3 drops of phenolphthalein indicator.
3. Titrate solution A solution with solution B. Record your results in the table below.
4. Repeat the procedure two more times to retain concord and values.

TABLE 1 **(3 marks)**

Titration number	1	2	3
Final burette reading (cm^3)			
Initial burette reading(cm^3)			
Volume of acid used (cm^3)			

(a) Calculate the average volume of solution B used**.** **(1mark)**

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(b) Find;

(i) Moles of sodium hydroxide that reacted with the acid. **(2 marks)**

(ii) Moles of hydrochloric acid present in the average volume. **(1mark)**

(iii) Molarity of the acid **(1mark)**

PROCEDURE II

1. Put about 100cm^3 of water in a 250ml volumetric flask add all the 2.5g of salt mixture. Shake the mixture to dissolve and the solid. Top up the solution to the mark with distilled water Label this solution C
2. Fill this burette with solution B.
3. Pipette 25c m^3 of solution C and put it into a clean conical flask. Add 3 drops of methyl orange indicator.
4. Titrate solution C with solution B. Record your results in the table below.
5. Repeat the titration two more times

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TABLE II **(3 marks)**

TITRATION	1	2	3
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution B used (cm^3)			

(c) Calculate the average volume of solution B **(1mark)**

(d) Calculate the number of moles in the hydrochloric acid used **(1mark)**

(e) The equation for the reaction of the acid with one of the salts in the mixture is:

$2HCl_{(aq)} + X_2CO_{3(s)} \rightarrow 2XCl_{(aq)} + CO_{2(g)} + H_2O_{(l)}$

Calculate;

(i) Moles of X_2CO_3 that reacted with the acid in the experiment **(1mark)**

(ii) Molarity of X_2CO_3 **(2 marks)**

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(f) Calculate the mass of the salt mixture in gdm^{-3}. **(1mark)**

(g) Calculate the percentage of XCl in this mixture **(2 marks)**

2. In this experiment, you're required to determine the time takes for a precipitate to be formed when S_3 which is sodium thiosulphate solution, reacts with dilute hydrochloric acid.

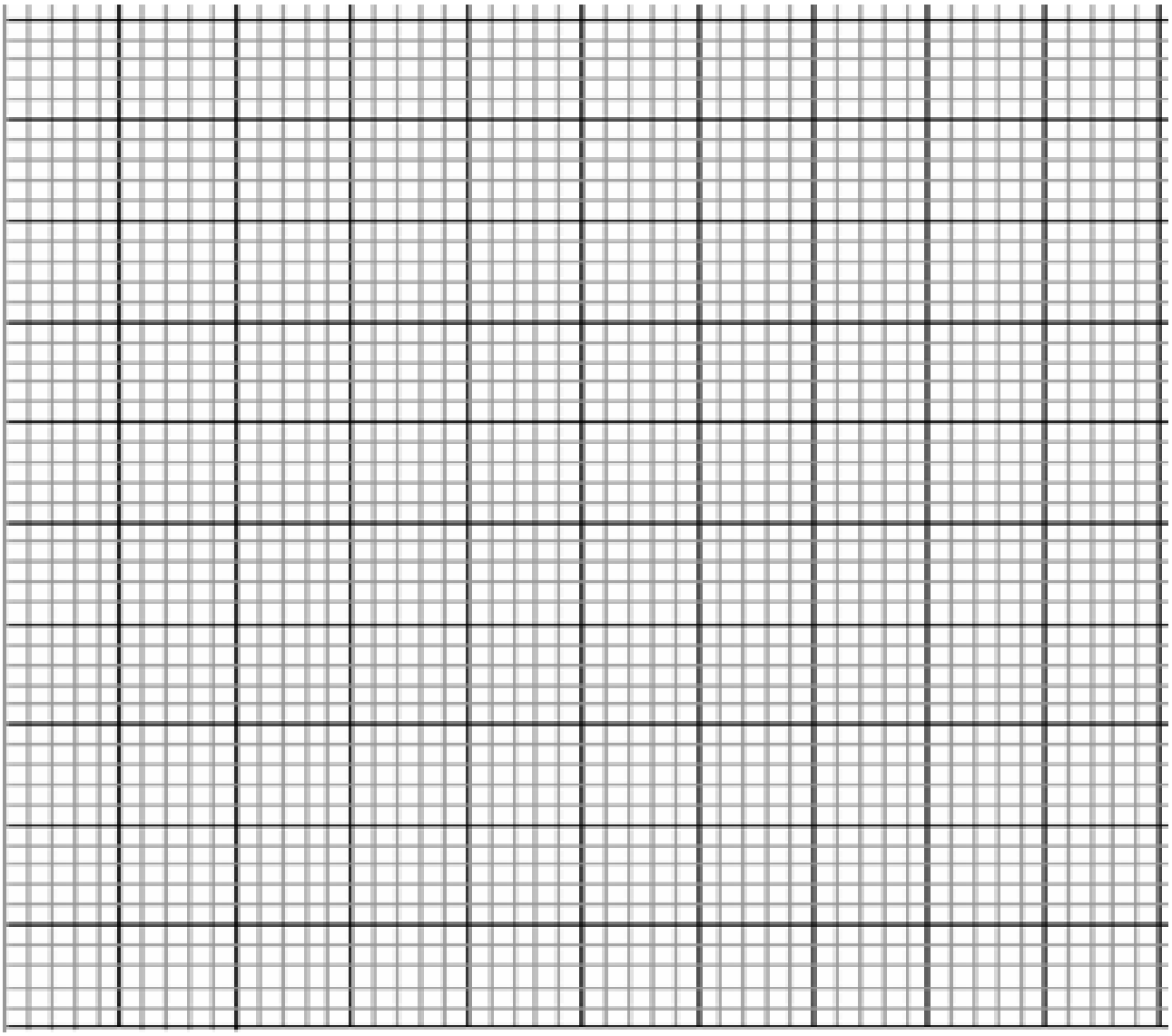
PROCEDURE

1. Using a measuring cylinder measure $50cm^3$ of **S3** into a 100ml beaker.
2. Make a pencil cross on a white piece of paper so that when a beaker is placed top of the paper , the cross can be seen through the bottom of the beaker.
3. To solution A add 10 cm^3 of 2M hydrochloric acid and at the same time start a stop watch / stop clock. Swirl the contents of the beaker twice and then place it over the cross on the paper. Look at the cross from above the beaker through the mixture. Stop the stop watch immediately the precipitate makes the cross invisible. Record time taken for the cross to become invisible in the table below, rinse beaker.
4. Repeat the procedure with solutions B, C, D and E as per the table.

SOLUTION	**Volume of solution S3 in the beaker (cm^3)**	**Volume of water added (cm^3)**	**Volume of 2M HCl**	**Time taken in seconds**
A	50	0	10	
B	40	10	10	
C	30	20	10	
D	20	30	10	
E	10	40	10	

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(a) Plot the graph of volume of solution S3 (y – axis) against time **(4 marks)**



(b) From the graph state the relationship between concentration of solution S_3 and time. **(1mark)**

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(c) Why is water added to the solution S3? **(1mark)**

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3. You're provided with solid D. Carry out the tests shown below on the solid.

(a) Heat a spatula full of D in A clean dry test – tube.	
OBSERVATIONS **(1mark)**	**INFERENCES** **(1 mark)**
(b) Put a spatula end- full of D in a boiling tube. Half fill it with water. shake this mixture	
OBSERVATIONS **(1mark)**	**INFERENCES** **(1 mark)**
(c) Divide the resultant mixture in (b) above into 5 portions (i) To the first portion add dilute nitric acid followed by a few drops of Barium nitrate	
OBSERVATIONS **(1mark)**	**INFERENCES** **(1mark)**
(ii) To the second portion, add nitric acid a few drops followed by lead (II) nitrate and then warm the mixture.	
OBSERVATIONS **(1mark)**	**INFERENCES** **(1 mark)**
(iii) To the third portion, add sodium hydroxide solution drop wise until in excess. Warm this mixture. Test any gas produced withy Litmus paper	
OBSERVATIONS **(1 mark)**	**INFERENCES** **(1mark)**

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(d) You are provided with liquid B. Carry out the tests shown below and write your observations and inferences in the spaces provided.

(i) To about $1cm^3$ of liquid B in a test – tube, add about $1cm^3$ of distilled water and shake the mixture.	
OBSERVATIONS **(1mark)**	**INFERENCES** **(1 mark)**
(ii) To about $1cm^3$ of liquid B in a test tube add a small amount of solid sodium hydrogen carbonate	
OBSERVATIONS **(1mark)**	**INFERENCES** **(1 mark)**
(iii) To about $2cm^3$ of liquid B in A test – tube, add about $1cm^3$ of acidified potassium dichromate (VI). Warm the mixture gently and allow it to stand for about one minute.	
OBSERVATIONS **(1mark)**	**INFERENCES** **(1mark)**

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ADM NO: …….. SIGN: ……. DATE: ……..

451/1

COMPUTER STUDIES

PAPER 1

(THEORY)

TIME:2 ½ HOURS

Instructions to Candidates

(a) Write your Name, Admission number and Class in the spaces provided above.
(b) This paper consists of **two** sections**; A** and **B**.
(c) Answer **ALL** the questions in section A
(d) Answer question 16 and any other THREE questions from section B
(e) **ALL** answers should be written in the spaces provided on the question paper.
(f) This paper consists of 7 printed pages.
(g) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing**.
(h) **Candidates should answer the questions in English**

SECTION	QUESTION	CANDIDATES SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

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SECTION A (40 MKS)

Answer all questions in this section.

1. State the software technological differences between the second generation and the third generation computers **[2 marks]**

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2. State **two** ways of ensuring proper ventilation in a computer room **[2 marks]**

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3. Convert the decimal number 20.375 to it binary number system equivalent **[3 marks]**

4. Pat has installed internet in his home computer in order to use it for browsing. State three ways in which he would prevent viruses from infecting the computer. **[3 marks]**

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5. State **three** ways of transforming a picture embedded in a Desktop Publishing programme in order to fit in a designated space on a computer. **[3 marks]**

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6. Distinguish between a line printer and a page printer as used in computers. **[2 marks]**

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7. Describe virtual reality as used in computers. **[2 marks]**

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8. State the function of each of the following features of an email software

a) Inbox **[1 mark]**

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b) Draft **[1 marks]**

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9. a) Explain the term toggle key as used in computer keyboard **[2 marks]**

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b) List two examples of toggle keys on a keyboard **[2 marks]**

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10. State the type of error that would occur in data processing for each of the following cases:

a) Entering the number 315 instead of 351 **[1 marks]**

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b) Entering the text "Kwys" instead of "Keys" **[1 mark]**

11. State **four** factors to consider when selecting an input device for use in a computer room. **[4mks]**

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12. State **three** functions of Un-Interruptible Power Supply (UPS) **[3 marks]**

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13. Distinguish between a page break and a column break as used in a word processor. **[3 marks]**

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14. State **three** factors to consider when selecting an operating system to install in a computer**. [3 mrks]**

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15. Differentiate between analogue signal and digital signal as used in computers. **[2 marks]**

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SECTION B (60 marks)

Answer ALL questions from this section in the spaces provided.

16. a) Explain the term dry running as used in program development**. [2 marks]**

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b) Describe **three** properties of an algorithm. **[3 marks]**

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c) Write an algorithm using both pseudocode and flow chart to print the sum and average of numbers from 1 to n where n is provided by user and n>=1. **[10 marks]**

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17. a) State **four** outcomes that may result from using incorrect requirement specifications during system development. **[4 marks]**

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b) A school opted to use direct change over approach when installing a new system. Explain three challenges that the school may face as a result of this approach. **[6 marks]**

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c) State **three** reasons that may lead an organization to install an intranet. **[3 marks]**

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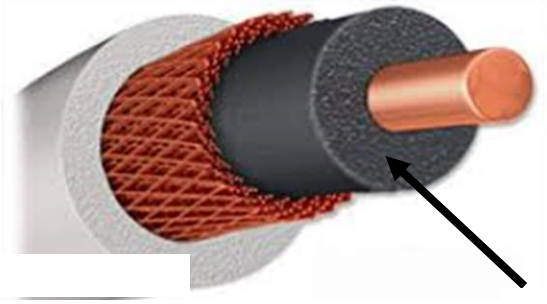
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d) The figure below shows a coaxial cable. State the function of the part labelled A. **[2 marks]**



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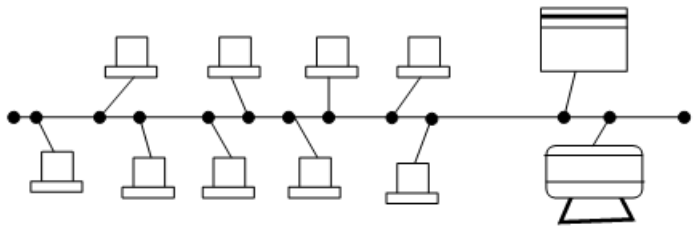
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18. Use the figure below to answer the questions that follow:



a) Give the name of the above network topology **[1 mark]**

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b) State three disadvantages of the above topology **[3 marks]**

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c) A publisher intends to use a desktop publishing programme to create a publication which is to have many graphics. State three ways in which the graphics may be acquired for this purpose. **[3 marks]**

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d) Interpret each of the following spreadsheet formula:

i)=count if (D2:D9,”>” B4) **[2 marks]**

ii) =sumif (B3:B11,”4M”, D3:D11) **[2 marks]**

e) i) The following are the fields of products table in a database created to store records of products manufactured in factory:

- Product number
- Product name
- Price
- Product description

I. State the appropriate data type for each field **[4 marks]**

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19. a) Explain **three** features of a graphical user interface as used in computers. **[6 marks]**

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b) State the function of each of the following computer keyboard keys:

i) Caps Lock **[1 mark]**

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ii) Shift **[1 mark]**

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iii) Home [1 mark]

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c) Using two's complement notation, determine the value of the operation $25_{10} - 29_{10}$. **[6 marks]**

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20. a) Distinguish between a computer drive and computer driver. **[2 marks]**

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b) State **two peripheral** devices connected to the computer via PS/2 **[1 mark]**

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c) Jane encountered desktop computer with the following features

- 3.0 USB ports
- 4.0 GB primary storage
- 19" TFT VDU
- 500 SATA HDD
- Linux 7.1
- AVG antivirus

i)Give 3 reasons for wide use of USB gadgets in the society today. [3 marks]

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ii) What is the meaning of the following specifications:

i. *4.0 GB primary storage* **[1 mark]**

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ii. *19" TFT VDU* **[1 mark]**

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iii. 500 SATA HDD **[1 mark]**

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iv. *Linux 7.1* **[1 mark]**

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iii) Give **three factors** to consider when selecting an **OS** to install in your computer. **[3 marks]**

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iv). Describe **two symptoms** of a computer infected by virus. **[2 marks]**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

451/2

COMPUTER STUDIES

PAPER 2

TIME:2 ½ HOURS

INSTRUCTIONS TO CANDIDATES:

1. Type your name and index number at the top right hand corner of each printout.

2. Write your name and index number on the CD.

3. Write the name and version of the software used for each question in the answer sheet.

4. Passwords **should not be used** while saving in the

5. Answer all questions. All questions carry equal marks.

6. Hand in all the **printouts** and the **CD.**

FOR OFFICIAL USE

QUESTION	MAXIMUM SCORE	STUDENT SCORE
1	50	
2	50	
TOTAL	**100**	

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QUESTION 1: SPREADSHEETS

1. The following are the KCSE results for a certain school in Nyeri. Enter the data as it is in Excel and answer the question that follows.

KIMAKANIA HIGH SCHOOL NYERI													
NAME	Eng	Kis	Mat	Bio	Phy	Chem	Hist	Art	Comp	Bst	Ave. point mark	Overall grade	Rank
THIRU	B+	B	A	B-	A	B	B-	A-					
KIPTOO	A-	B+	A	A-	A	A-	A-			A			
COLLINS	B+	B	A	B+	A	B	B	A					
RONALD	B+	A	A	A-	A	B+	B+		A				
FREDRICK	A	A	A	B	A	A-	A-		B+				
NJEGE	B+	B+	A	A-	A	B+	B+		A				
MUARINE	A	B	A	A	A	A-	A-			B-			
KIBET	B	A-	A	A	A	A	A			A			
WAFULA	B	B	A	B+	A	B-	B-			A			
NDIRANGU	B+	A-	A	B	A	B	B			A			
OTIENO	B+	C	A	A-	A	A-	A-			A			
MATU	B	A-	A	B+	A	B+	B+		A				
KIBUTHA	B	B	A-	B+	A-	B+	B+		A				
KIRURI	A	B+	A	A	A	A-	A-		A				
AMING'A	B	A	A	A-	A	A-	A-			C+			
JACKSON	B+	C+	A	B+	A	A	A		B-				
MUMBI	A-	A-	A-	B+	B+	B+	B+		A				
KIGUTA	B+	A	A	A	A	A-	A-		A				
MWANGI	B	A-	A	B+	A-	A-	A-	A-					
WAMUCIE	B+	B	A	A-	A	A-	A-	A					
MBUGUA	B+	B-	A	B	A-	B-	B-	A					
OGEGA	B-	A-	A-	B-	B+	B	B	C					
HENRY	A-	A-	A	A	A	A	A		D+				
ABDI	A	B+	A	B+	A	A	A		A				
JAMES	B+	C-	A-	B+	A	A	A			B+			

a) Save your work as **Matokeo_Mufti**. **[15 Marks]**

b) Perform the following calculation for these columns and write down the formulas you used in the spaces provided below each question:

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i) Use a formula to get the average point mark in the table above given that, **[3 Marks]**

Average Point Mark = Average of (sum of point of all subjects)

GRADE	POINTS
A	**12**
A	**11**
B+	**10**
B	**9**
B-	**8**
C+	**7**
C	**6**
C-	**5**
D+	**4**
D	**3**
D-	**2**
E	**1**

ii) Determine each student's rank using the Ave. Point Mark. **[3 Marks]**

iii) Use a formula to evaluate the Overall grade using the Ave. Point Mark, given that: **[3 Marks]**

GRADE	MARKS
A	90-100
A-	81-89
B+	71-80
B	61-70
B-	51-60
C+	41-50
C	36-40
C-	31-35
D+	25-30
D	20-24
D-	16-19
E	Below 15

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c. Add in the following table in the same sheet: **[5 Marks]**

	A	A-	B+	B	B-	C+	C	C-	D+	Number of Students	Max Grade Number	Min Grade Number	Average Mark	Average Grade	Rank	% Above Pass Mark
ENG																
KIS																
MAT																
BIO																
PHY																
CHEM																
HIST																
ART																
BST																
COMP																
Overall Grade																

d. **Calculate the following**:

(**NB//** Write the formulas used in the space provided below each question)

i) '**Number of students**' per grade for each subject, e.g. 10 students got an A in History. **[3 Marks]**

ii) '**Number of students**' column with the number of students who do the specific subject **[1 mark]**

iii) '**Max Grade Number**' (=the grade with the highest number of students in that subject) **[1 mark]**

iv) '**Min Grade Number**' (= the grade with the lowest number of students in that subject.) **[1 mark]**

v) 'A subject's Average Mark' = Sum of values for each grade divided by total number of students in that subject (Use the Grade-Value conversion table given in **Qn, 2a)(i) [2 Marks]**

vi) Average Grade of the Average Mark using the conversion table in **Qn. 2 b(ii) above. [2 marks]**

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vii) Rank of each subject as per its average mark use the conversion table **Qn, 2a)(i) &(iii)**

[4 Marks]

viii) A subject's '% Above pass mark' = Percentage of students who had B- or above in that subject. **[4 Marks]**

d) Plot a bar graph of the Subjects against their Average Mark **[4 Marks]**

e) Put a footnote with your ***name and index number*** in the same sheet and print your work.

[2 Marks]

f) Print the work book **[2 Marks]**

QUESTION 2: DATABASES

2. Ogeke is the manager of a college's ICT department. He has been told to use Database Management System (DBMS) to update records for a fundraising data. Perform the following operations just like Ogeke would:

a) i) Create a **relational database** with four table; Class List, Family Details, Pledge Contributions and Walk Form Contributions. **[4 Marks]**

ii) Class List contains the following fields; Class no, first Name, surname. Family Details contains Family Id, Parents Name, Address, City and Class no. Pledge Contributions contains Pledge Id, family Id, Amount Pledged and Amount received. Walk Form contribution contains Walk Id, Class no, Walker Name, Amount Promised and Amount Paid.

iii) Save your database as **Mchango_01** **[2 Marks]**

b) Input the following Data into Mchango_01 **[11 Marks]**

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CLASS LIST

CLASS NO	FIRST NAME	SURNAME
1	JACOB	MAUNDA
2	JAMES	MAMBO
3	MIKE	OGEKE
4	KEVIN	MALEWA
5	ALI	ABDI
6	PHARELL	OGEGA
7	RICHARD	MOKAYA
8	DENNIS	KIBET
9	JOHN	OTIENO
10	WILSON	KOBIA
11	JOHN	MATASIA
12	MOHAMED	ALI
13	JANET	WAMBUI
14	GERALD	KOECH
15	ANDREW	NGUGI
16	MICHAEL	GICHANGA
17	PETER	NG'ANG'A
18	CHRIS	SONKO
19	BENSUNDA	OWINO
20	FRANCO	WAFULA
21	KILLY	WAGAIYU
22	TONY	WAIGANJO

FAMILY DETAILS

FAMILY ID	PARENTS NAME	ADDRESS	CITY	CLASS NO
1	PROF & DR MAUNDA	89722	KISUMU	8
2	DR & MAMBO	55554	NAIROBI	21
3	MR & MRS OGEKE	6935	NYAMIRA	5
4	MR & MRS MALEWA	54897	NAIROBI	1
5	MR & MRS ABDI	12548	WAJIR	2
6	MR & MRS OGEGA	548	NAKURU	3
7	MR & MRS MOKAYA	1254	KISUMU	4
8	MR & MRS KIBET	5778	NAIROBI	6
9	MR & MRS OTIENO	3124	KISUMU	9
10	MR & MRS KOBIA	5546	NAIROBI	10
11	MR & MRS MATASIA	44977	NAKURU	11
12	MR & MRS MOHAMED	96587	NAIROBI	12
13	DR & MRS WAMBUI	4684	GARISSA	13
14	DR & MRS KOECH	44687	NAIROBI	14
15	MR & MRS NGUGI	99978	THIKA	16
16	MR & MRS NG'ANG'A	222	NAIROBI	17
17	MR & MRS GICHANGA	65	SIAYA	19
18	MR & MRS SONKO	650	BARINGO	20
19	MR & MRS OWINO	987	NAIROBI	22
20	MR JONES WAFULA	1	KISII	18
21	MRS KILLY	5541	KISUMU	7
22	DR & MRS TONY	88754	NAIROBI	15

PLEDGE CONTRIBUTIONS

. WALKER FORM CONTRIBUTIONS

PLEDGE ID	AMOUNT PLEDGED	AMOUNT RECEIVED	FAMILY ID
1	10000	8000	1
2	25600	25600	22
3	7800	6000	2
4	23690	0	3
5	6587	2300	4
6	3690	3560	7
7	5000	500	21
8	2478	1000	19
9	0	0	20
10	35697	0	15
11	2569	2569	12
12	200000	20000	10
13	2560	2500	8
14	4500	4500	18
15	8090	7500	14
16	9600	8560	5
17	1500	1350	6
18	7800	7800	9
19	12000	9850	14
20	1500	1356	12
21	6540	6540	11
22	1350	1200	13

WALK ID	WALKER NAME	AMOUNT PROMISED	AMOUNT PAID	CLASS NO
1	GIKONGE	5000	3000	1
2	MORAA	2580	0	10
3	KERUBO	500	6000	16
4	JAMES	20	15	6
5	NJUKI	5980	2300	14
6	SABINA	6300	3560	7
7	JOHN	100	100	22
8	KALVIN	689	0	18
9	KOECH	8595	700	15
10	OTIENO	3695	300	5
11	ABDI	10000	10000	17
12	JACK	15698	68	20
13	EDWARD	12350	500	19
14	MUTITO	7050	5000	8
15	MWAMBORA	20000	6958	4
16	NJAMBI	1900	1200	3
17	KIPKEMOI	2300	2100	2
18	COLLINS	5640	4560	9
19	KARURI	1230	985	21
20	NYANCHAMA	456	400	12
21	OGEGA	780	700	13
22	CHEBII	5640	5600	11

i) Create a query that contains the *Parents Name* and the *students' first name* who have

i) Create a query that contains the *Parents Name* and the *students' first name* who have

'**Promised**' more than **7000**. Save the query as **Promised_Mchango**. **[5 Marks]**

ii) Make a query and from it produce a report that list the student name and parents names of families who's **Amount Pledged** is equal to **Amount Received** and greater than 0. Save the query as **Received**Q and the Report as **Pledged_Received**. **[10 Marks]**

iii) Make a query from it to produce a report that calculates the difference between pledge and amount received from each family. Save the query as **Balance** and the Report as **Bal_report**. **[10 Marks]**

iv). Create **4 Reports** that can be used to display the *4 tables separately* in the database**.** Save them as ***PC, WFC, Class_list and Family_Details respectively*** **print these reports** **[4 Marks]**

v) Create **four forms** of each table above and save them as respective table names. **[4 marks]**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……...

313/1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1

TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- Answer any **Five** questions in the answer sheet provided.
- Each question has three sections i.e. a,b,c
- Each question carries 20 marks.

For Examiner's use only

Question	**1**	**2**	**3**	**4**	**5**	**6**	**CANDIDATE'S TOTAL SCORE**
Marks							

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1. a) Identify **Seven** literary forms employed in writing the Bible . **(7 mks)**

b) Outline the responsibilities given to human beings by God in the Genesis stories of creation. **(7 mks)**

c) State **six** lessons that Christians learn about Work from the Genesis stories of creation. **(6 mks)**

2.a) Give **seven** Reasons Why God called Abraham. **(7 mks)**

b) Identify **four** promises God made to Abraham and how they were fulfilled. **(8 mks)**

c) What is the relevance of the Ten plaques to both the Jesus & Egyptians .? **(5 mks)**

3.a) State the failure of King Saul. **(6 mks)**

b) In what ways did King David promote the worship of Yahweh? **(7 mks)**

c) Give **seven** factors that affect the true worship of God today. **(7 mks)**

4 a) State **seven** roles of prophets in the Old Testament. **(7 mks)**

b) Explain **three** categories of true prophets in the Old Testament. **(6 mks)**

c) How can Christians assist the church leaders to perform their duties effectively? **(7 mks)**

5 a) Outline the suffering of Jeremiah during his prophetic Ministry. **(6 mks)**

b) State **four** promises that the Israelites made when they renewed their covenant with God during the time of Nehemiah. (Nehemiah 10:28-20) **(8 mks)**

c) State the importance of prayer in the life of a Christian. **(6 mks)**

6.a) State the traditional African understanding of Spirits. **(5 mks)**

b) Outline ways through which a marriage partner is chosen in traditional African communities. **(8 mks)**

c) Give **seven** changes that are taking place in property ownership in Traditional African communities. **(7 mks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……..

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ADM NO: …….. SIGN: ……. DATE: ……..

313/2

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- Answer any **Five** questions in the answer sheet provided.
- Each question has three sections i.e. a,b,c
- Each question carries 20 marks.

For Examiner's use only

Question	**1**	**2**	**3**	**4**	**5**	**6**	**CANDIDATE'S TOTAL SCORE**
Marks							

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1.a) State the Jewish Expectations about the Messiah. **(7 mks)**

b) Give **seven** qualities that Jesus portrayed when he accompanied his parents to the temple at the of twelve. **(7 mks)**

c)State **six** lessons that Christians learn from the incident when Jesus was left behind by his parents in the temple according to Lk. 2:41-52. **(6 mks)**

2.a) Describe the temptations of Jesus in the wilderness. **(7 mks)**

b) Describe the call of the first Disciple of Jesus (Lk5:1-11). **(8 mks)**

c) Give the lessons that Christians learn from the transfiguration of Jesus. **(5 mks)**

3.a) Identify the **six** components of the Lord's prayer. **(6 mks)**

b) Narrate the parable of the Gold Coins (Lk:19:11-27) . **(8 mks)**

c) What is the importance of Jesus resurrection to Christians? **(6 mks)**

4 a) State the teachings of Jesus on the role of the Holy Spirit. **(8 mks)**

b) Outlined ways in which Christians can identify those who are led by the Holy Spirit among themselves. **(6 mks)**

c) Give **six** ways in which Christians can prevent divisions in the church in Kenya today. **(7 mks)**

5.a) State **seven** reasons why Divorce is rare in the traditional African communities. **(7 mks)**

b)Give **six** factors that a Christian employer should consider when making a decision on a salary for an employee. **(6 mks)**

c) Explain the dangers of illicit drugs among the youth in Kenya today. **(7 mks)**

6.a) Outline the Traditional African concept of wealth. **(7 mks)**

b) Give **eight** reasons why it is important to have laws in a country. **(8 mks)**

c) State **five** reasons why Christians should vote during the general elections. **(5 mks)**

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NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……...

101/1

ENGLISH

PAPER 1

(FUNCTIONAL SKILLS)

TIME: 2 ½ HOURS

(Functional Writing, Cloze Test, Oral Skills)

For Examiner's use only

Question	**Maximum Score**	**Candidates Score**
1	20	
2	10	
3	30	
Total Score	**60**	

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1. FUNCTIONAL WRITING (20 MARKS)

You are the Secretary of the Journalism Club in your school. The chairperson has asked you to send out a notice of the second meeting to review the previous year's club activities. During the meeting, you will need to discuss the Finances, Club Projects, the annual magazine and club membership. **(20 marks)**

a) Write the notice of this meeting which you would send to the members of the Journalism

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b) Write the Agenda that you would attach to the notice.

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2. CLOZE TEST (10 MARKS)

In the world today some people are (1)_____ of starvation while others are dying of disease brought (2) _____by overeating. An understanding of nutrition is, therefore, important for (3) _____ who wants to see changes for the

(4) _____Today, as never before, people are increasingly aware of the (5)_____that the world's food resources are limited. In fact, the problems of human welfare are (7) _____far greater than economic or political problems. It is not only the (8) _____ of food available in a given place that is important but also the quality of food. Indeed, the (9) _____faced by nutritionists have never been greater (10) _____they are today and the science of nutrition is a subject everyone should study.

(Adapted from *success in Nutrition* by Magnus Puke)

3. ORAL SKILS (30 MARKS)

a) **How much wood would a woodchuck chuck if a woodchuck could chuck wood?**

i) Classify the genre above. **(1 mark)**

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ii) Identify any two features of style prominent in the genre above **(4 marks)**

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b) For each of the following words provide another two in which the letter(s) in bold is pronounced the same way. **(4 marks)**

i) M**o**nkey _____

ii) **Ch**asm _____

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iii) **D**uring _____

iv) **E**specially _____

(any 2 words ½ = 1 x 4 = 4 marks)

b) The school choir is rehearsing a choral verse for the Music festival. The choir is making a presentation for the rest of the school so as to get some feedback. Give any three things that the listeners need to pay attention to and explain why. **(6 marks)**

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d) You have been short – listed to attend an interview in a mult- national company for the job of company accountant. Outline how you would conduct yourself during the interview.**(5 marks)**

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e)State whether we have a falling or rising intonation in the following sentences. **(4 marks)**

a) How did she travel to Dubai? _____

b) I have been working very hard for the coming examination._____

c) Have you ever been to moon? _____

d) What a horrible scene!_____

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f) Write another word with similar pronunciation as these: **(6 mks)**

i) Lean – _____

ii) Pale – _____

iii) Jibe – _____

iv) Bawl – _____

v) Root – _____

vi) Dual – _____

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NAME: ……..

SCHOOL: ……

ADM NO: …….. SIGN: ……. DATE: ……...

ENGLISH

101/2

COMPREHENSION, LITERARY APPRECIATION AND GRAMMAR

TIME: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES

- Write your **Name**, **Admission number** and **class** in the spaces provided above.
- **Sign** and write the **date** of examination in the spaces provided above.
- Answer **all** questions in this paper.

FOR EXAMINERS USE ONLY.

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	25	
3	20	
4	15	
TOTAL SCORE	**80**	

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COMPREHENSION (20 MARKS)

1. Read the following passage and then answer the questions that follow.

At the head of the Court is a high seat where the judge sits. Down below it is a table for officers of the court, and to the left and to the right of the table are other seats. Some of these seats form a block that is enclosed, and they are for the jury if there is a jury. In front of the table are other seats, arranged in arcs of circles, with curved tables in front of the seats, and it is there that the lawyers sit. And behind them is the dock, with a passage leading to some place that is underground, and from this place that is underground will be brought the men that are to be judged. At the back of the court there are seats rising in tiers, those on the right for Europeans, those on the left for non Europeans, according to the custom.

You may not smoke in this court, you may not whisper or speak or laugh. You must dress decently, and if you are a man, you may not wear your hat **unless such is your religion**. This is in honour of the judge and in honour of the King whose officer he is; and in honour of the law behind the judge, and in honour of the King whose officer he is; and in honour of the law behind the judge, and in honour of the people behind the law. When the judge enters you will stand, and you not sit till he is seated. When the judge leaves you will stand, and you will not move till he has left you. This is in honour of the judge, and of the things behind the judge.

For to the judge is entrusted a great duty, to judge and pronounce sentence even sentence of death. Because of their high office, judges are called Honourable, **and precede most other men** on great occasions. And they are held in great honor by men both white and black. Because the land is a land of fear, a judge must be without fear, so that justice may be done according to the law; therefore a judge must be incorruptible.

The judge does not make the law. It is the people that make the law. Therefore, if a law is unjust, and if the judge judges according to the law, that is justice, even if it is not just.

It is the duty of a judge to do justice, but it is only that the people that can be just. Therefore, if justice be not just, that is not to be **laid at the door of the judge**, but at the door of the people, which means at the door of the white people, for it is the white people that make the law.

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In South Africa men are proud of their judges, because they are incorruptible. Even the black men are proud of their judges, because they believe they are incorruptible. Even the black men have faith in them, though they do not always have faith in the law. In a land of fear this incorruptibility is like **a lamp set upon a stand**, giving light to that are in the house.

(Adapted from *Cry, the Beloved Country* by Alan Patron)

a) What factors determine where you may sit near the front of the court? **(2 marks)**

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b) What does the seating arrangement at the back of the court reveal about the society? **(2 marks**)

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c) Certain rules must be strictly observed inside the court. What would non – observance of the rules imply? **(2 marks)**

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d) Why must a judge be fearless? **(2 marks)**

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e) How have judges in South Africa earned respect and admiration? **(2 marks)**

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f) Although the judge has great responsibilities and power, he has limitations. What are his limitations? **(4 marks)**

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g) What does the second last paragraph reveal about the status of the black people? **(2 marks)**

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h) Explain the meaning of each of the following expressions as used in the passage

i) Unless such is your religion **(1 mark)**

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ii) and precede most other men. **(1 mark)**

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iii) Laid at the door of the judge. **(1 mark)**

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iv) a lamp set upon a stand (1 mark)

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2. BLOSSOMS OF THE SAVANNAH (25 MARKS)

Read the following Excerpt and answer the questions that follow.

" O God of all creation!" Resian cried out bitterly and audibly as soon as the cruel ugly old woman left her. "What unending woes these are! *Taba!Kilome sogo*! What have I done to the gods to deserve this kind of punishment?"

Then she re called the teaching of the Bible, and especially where it narrated the woes of those who went through similar or even worse tribulations, but triumphed at the end. She particularly remembered the wailing lamentations of Job and his railing against injustice, and she thought her problems were nothing compared to those he had suffered. He triumphed because he was stoic, focused and was able to persevere. Olarinkoi and his demonic mother may physically take her to Tanzania, Olarinkoi may physically take her as his wife, they may even physically circumcise her, but mentally she was going to resist. She was going to refuse to be subdued. Where she could, she was going to physically resist. She solved to remain focused and she prayed for strength and endurance to be able to bear all those misfortunes.

She had wondered where Olarinkoi was, but she had now learnt from his mother that he was some place, planning more evil. She had also learnt that Oloisuduri, the monster, was looking for her. She did not know what to think about her father. He was like the proverbial pig that was fried using its own lard. She thought he was suffering double tragedy: the loss of his daughter and the loss of his shop and home if they were financed by Oloisudori.

a) Oh God of all creation! What has elicited this reaction? **(4 marks)**

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b) In note form bring out Resian's tribulations and woes since running away do not repeat the answers given in question (a) above **(4 mks)**

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c) Comment on the different moods in paragraph one and two of this excerpt. **(3mks)**

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d) Does the old woman qualify to be described as cruel, demonic and ugly? **(4 marks)**

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e) Basing your illustrations on this excerpt, describe any **two** character traits of Resian **(4 marks)**

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f) Identify and explain any **two** aspects of style used in this excerpt. **(4 marks)**

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g) Give the meaning of the following phrase as used in the excerpt **(2 marks)**

To refuse to be subdued

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3. POETRY (20 MARKS)

Read the following poem and answer the questions that follow.

WHEN I WAS ONE – AND – TWENTY

When I was one – and- twenty
I heard a wise man say,
"Give crowns and pounds and guineas
But not your heart away;
Give pearls away and rubies
But keep your fancy free"
But I was one – and- twenty,
No use to talk to me

When I was one- and- twenty
I heard him say again'
"The heart out of the bossom
Was never given in vain;
"Tis paid with sighs a – plenty

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And sold for endless rue."

And I am two – and – twenty,

And oh, 'tis true, tis true.

(A.E Housman)

a) Who is the speaker in this poem? **(3 marks)**

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b) What advise does the wise man give to the speaker? Does the speaker follow the advice? Explain. **(3 marks)**

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c) How much time has passed between the first and second stanza? Explain **(2 marks)**

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d) Identify and illustrate the features of style used in the poem. What does the poet? achieve by using them? **(6 marks)**

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e) Explain the meaning of the following lines. **(2 marks)**

But I was one and twenty

No use to talk to me

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f) Describe the tone of the poem. **(2 marks)**

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g) Rewrite the following lines in your own words: **(2 marks)**

Tis paid with sings a – plenty

And sold for endless rue

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4. GRAMMAR (20 MARKS)

A] Change the following sentences into direct speech. (2 marks)

i) He said that when he saw them they were playing squash.

……
……

ii) The Pupils said that they wished they did not have to take exams.

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B] Fill in the black space with the appropriate prepositions. (3 marks)

i) Cat jumped _____the mantel piece

ii) The cook dipped the cup_____ the porridge.

iii) Some students were sent home for going _____the perimeter wall.

C] Write the following sentences according to instructions given. (5 marks)

i) The Child would have drowned were it not for the quick action taken by the life saver. (Begin: But…)

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ii) Someone is watching us (Rewrite in the passive)

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iii) As soon as you see him inform the police (Rewrite using no sooner)

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iv) Moses set out for Canaan. His brother accompanied him (Begin: setting.)

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v) If he comes, he will not be punished.

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D) Explain the meaning of the underlined expressions. (2 marks)

i) Abdi will tidy up the room <u>when pigs begin to fly</u>

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ii) My mother has <u>green fingers.</u>

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E] Complete the underlined verb to make the appropriate phrasal verb.(3 marks)

i)The immigrant complained about being <u>discriminated</u> because of his race.

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ii) I boarded the car and was <u>dropped</u> at the mall.

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iii) As she was cleaning her gun, it <u>went</u> and killed her.

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NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……...

ENGLISH

PAPER 3

(Imaginative Composition and

Essays Based on the Set Texts)

2 ½ hours

INSTRUCTIONS TO CANDINDATES

a) Answer three questions only

b) Question one and two are compulsory

c) In question three, choose only one of the optional texts you have prepared on.

d) Where a candidate presents work on more than one optional text, only the first to appear will be marked.

e) Each essay should not exceed 450 words.

FOR EXAMINER'S USE ONLY.

QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
1.Imaginative Composition	20	
2.The Compulsory Set Text	20	
3.The Optional Set Text	20	
TOTAL	60	

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1. Imaginative composition

Either

a) Write a story ending with the following sentence:

…… It only dawned on me that by associating with those that I thought were my friends, I had ruined my life.

Or

b) Write a composition that is justifies the argument that incorporating co-curricular activities in the mainstream education syllabus shall help nurture an all-round productive student.

2. The Compulsory Set Text: Henrik Ibsen's A Doll's House

Money is a potential source of confusion and instability in the society. Write an essay that touches on this assertion with reference to Henrik Ibsen's *A Doll's House.*

3. The Optional Set Texts

Answer only one of the following three questions.

Either

a. Short stories: Moran (ED) Memories we Lost.

Our actions or inactions can lead to disastrous consequences. With clear illustrations from Gabriel Marquez's "The Handsomest Drowned Man in the World," write an essay illustrating the villager's role in the death of Esteban.

Or

b. The Play The play: *Inheritance* by David Mulwa.

To the people of Kutula, life was probably better when they faced colonial challenges. Illustrate this claim with reference to David Mulwa, play *The Inheritance*.

Or

c. The Novel: John Steinbeck, *The Pearl*

Th reference to John Steinbeck's novel *The Pearl*, write a composition on the degrading consequences of poverty.

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NAME: ……..…

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……..

312/1
GEOGRAPHY
Paper 1
Time: 2¾ hours
INSTRUCTIONS TO CANDIDATES.

(a) *Write your name, class and admission number in the spaces provided above.*
(b) *Sign and write the date of the examination in the spaces provided above.*
(c) *This paper has **two** sections: **A** and **B**.*
(d) *Answer **all** the questions in sections **A**.*
(e) *Answer question **6** and any other **two** questions from Section **B**.*
(f) *All answers must be written in the answer booklet provided.*
(g) ***This paper consists of 3 printed pages.***
(h) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***
(i) ***Candidates should answer the questions in English.***

For Examiner's Use Only

Section	Questions	Maximum Score	Candidate's Score
A	1 – 5	25	
	6	25	
B		25	
		25	
		Total Score	

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SECTION A

*Answer **all** the questions in this section.*

1. (a) State **three** effects of the rotation of the earth on its axis. **(3 marks)**

(b) Give **two** proofs that the earth is spherical**.** **(2 marks)**

2. (a) State **three** factors that influence how the wind blow. **(3 marks)**

(b) Identify **two** types of local winds. **(2 marks)**

3. (a) Identify **two** characteristics of minerals. **(2 marks)**

(b) Give **three** classifications of mechanically formed sedimentary rocks. **(3 marks)**

4. (a) Identify **two** scales used to measure earthquakes. **(2 marks)**

(b) State **three** effects of earthquakes**.** **(3 marks)**

5. (a) State **three** characteristics of Savanna vegetation. **(3 marks)**

(b) Give **two** uses of Savanna vegetation to man**.** **(2 marks)**

SECTION B

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

6. Study the map of NYERI 1:50,000 (sheet 120/4) provided to answer the following questions.

(a) (i) Convert the linear scale of the map to a Representative Fraction (RF) scale. **(1 mark)**

(ii) Identify **two** districts shown on the map. **(2 marks)**

(b) (i) Give the six figure grid reference of the road junction at Gunyumu Farm. **(2 marks)**

(ii) Measure the distance of all-weather road bound surface **D435** from grid reference 715549 to grid reference 654549 **(2 marks)**

(c) (i) Give the direction and bearing of the Ark Lodge in grid square 5661 from the trigonometrical station in grid square 5164. **(2 marks)**

(ii) Give the longitudinal position of the North Eastern corner of the area covered by the map. **(2 marks)**

(d) (i) Describe how relief has influenced transport in the area covered in the map. **(4 marks)**

(ii) Describe the factors that have influenced the distribution of settlement in the area covered by the map. **(6 marks)**

(e) Citing evidence from the map, describe **two** functions of Mweiga town. **(4 marks)**

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7. (a) (i) What is faulting? **(2 marks)**

(ii) Identify **four** types of faults. **(4 marks)**

(b) Using a well-labelled diagram, describe the formation of block mountains by tensional forces**. (8 marks)**

(c) Explain **four** positive effects of faulting to human environment. **(8 marks)**

(d) You are supposed to carry out a field study on faulting in the Rift-Valley field study.

(i) State **two** objectives for your study. **(2 marks)**

(ii) Identify **two** follow up activities you are likely to carry out after the field study. **(2 marks)**

8. (a) (i) Identify **three** processes through which waves erode the coastline. (3 marks)

(ii) Apart from blowholes, list **three** features that are produced by wave erosion along the coast. **(3 marks)**

(b) With aid of well-labelled diagrams, describe how a blowhole is formed**. (8 marks)**

(c) Describe how a spit is formed. **(4 marks)**

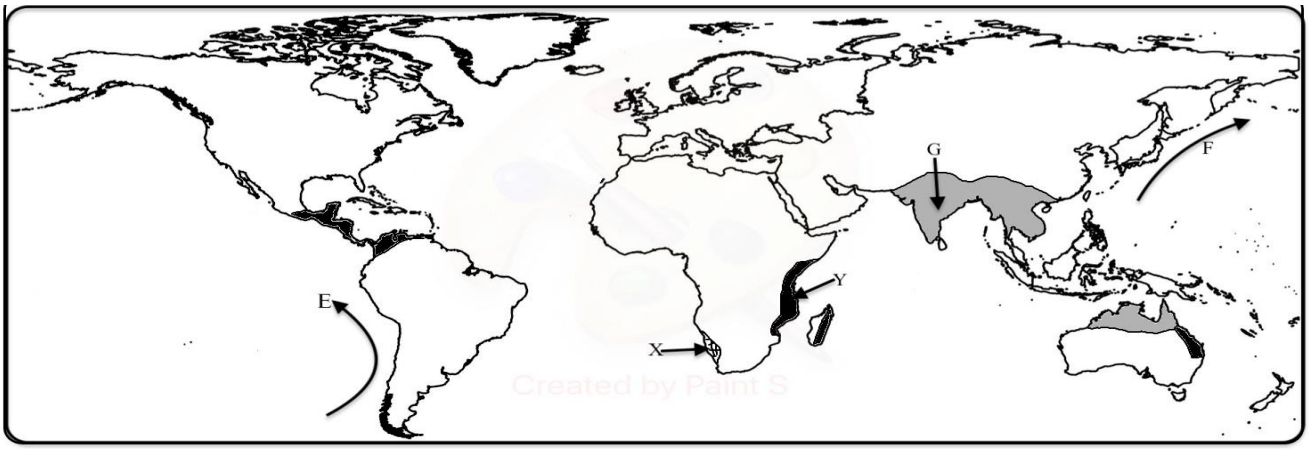
(d) AGHS students conducted a field study on coastal features along the Kenyan coast.

(i) List **three** features of coastal emergence they are likely to have studied. **(3 marks)**

(ii) State **four** ways in which features resulting from coastal emergence are of significance to Kenya. **(4 marks)**

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9. Use the world map below to answer questions (a) and (b).



(a) (i) Identify the climate marked **X** and **Y.** **(2 marks)**

(ii) Name the ocean currents marked **E** and **F.** **(2 marks)**

(b) Describe the characteristics of the climate marked **G**. **(8 marks)**

(c) Explain how the following factors influence climate:

(i) Latitude; **(2 marks)**

(ii) Aspect; **(2 marks)**

(iii) Configuration of the coastline. **(2 marks)**

(d) (i) State **three** factors that influences atmospheric pressure. **(3 marks)**

(ii) Describe how relief rainfall is formed**.** **(4 marks)**

10. (a) State four factors that determine the amount of surface run-off. **(4 marks)**

(b) Describe three ways in which a river transport its load. **(6 marks)**

(c) Using diagrams,describe the following drainage patterns:

(i) Dendritic; **(2 marks)**

(ii) Trellis; **(2 marks)**

(iii) Centripetal. **(2 marks)**

(d) (i) What is a delta? **(2 marks)**

(ii) State three ideal conditions under which a delta may be formed. **(3 marks)**

(iii) State four factors that lead to river deposition. **(4 marks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……

SCHOOL: ……..……..

ADM NO: …….. SIGN: ……. DATE: ……

312/2
GEOGRAPHY
PAPER 2
TIME: 2 3/4 HRS
INSTRUCTIONS TO CANDIDATES.

(a) Write your name, class and admission number in the spaces provided above.

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

(c) This paper has **two** sections: **A** and **B**.

(d) Answer **all** the questions in sections **A**.

(e) Answer question **6** and any other **two** questions from Section **B**.

(f) All answers must be written in the answer booklet provided.

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

(h) Candidates should answer the questions in English.

For Examiner's Use Only

Section	Questions	Maximum Score	Candidate's Score
A	1 – 5	25	
	6	25	
B		25	
		25	
		Total Score	

Prefer Calling Amobi Group of Examiners @ 0743 333 000 OR 0706 851 439 for Marking Schemes

SECTION A

Answer **all** questions in this section

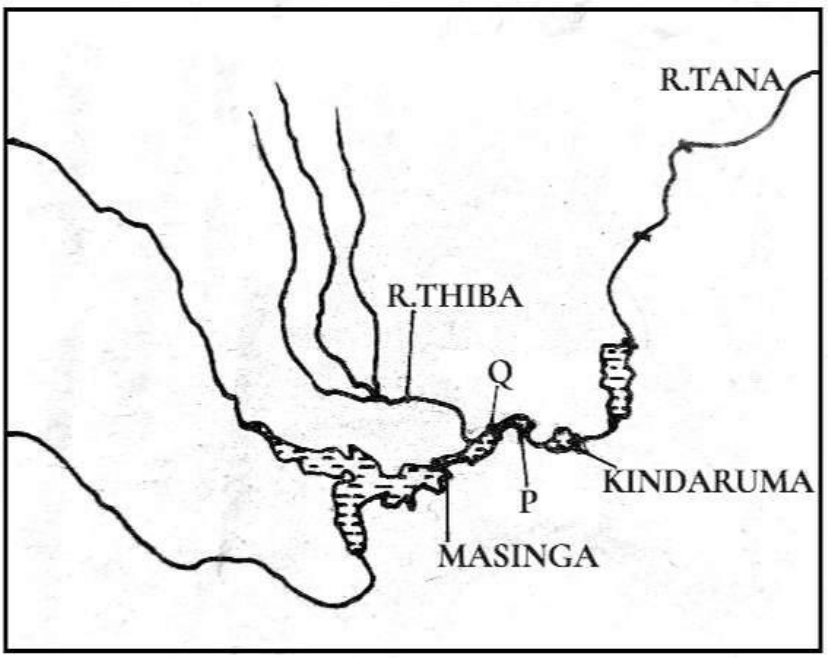
1. (a) Name **two** counties where floriculture is practiced in Kenya. **(2 marks)**

(b) State **three** characteristics of horticultural farming in Kenya. **(3 marks)**

2. (a) Name **two** agricultural food processing industries in Kenya. **(2 marks)**

(b) State **three** problems facing Jua – Kali industries in Kenya. **(3 marks)**

3. (a) The sketch map below shows Hydroelectric Power(H.E.P) along the River Tana. Use it to answer question (a)



Name the Hydroelectric power (H.E.P) stations marked **P** and **Q**. **(2 marks)**

(b) State **three** reasons that limit the use of nuclear energy in Kenya. **(3 marks)**

4. (a) Give **two** effects of the liberalization of the oil industry in Kenya. **(2 marks)**

(b) State **three** problems that have hindered the decentralization of industries in Kenya. **(3 marks)**

5. (a) Apart from pastoral farming, name **two** other types of commercial livestock farming practiced in Kenya. **(2 marks)**

(b) State **three** factors that favour pastoral farming in Kenya. **(3 marks)**

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SECTION B

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

6. Use the data provided to answer the questions that follow.

Kenya: Value by Foreign Trade between 1999 – 2007 in million Ksh.

YEAR	1999	2000	2001	2002	2003	2004	2005	2006	2007
EXPORTS	985	1.230	1,170	1,080	1,020	1,310	1,450	1,590	1,860
IMPORTS	2,270	2,910	3,195	4,029	4,131	4,247	4,585	4,422	4,516

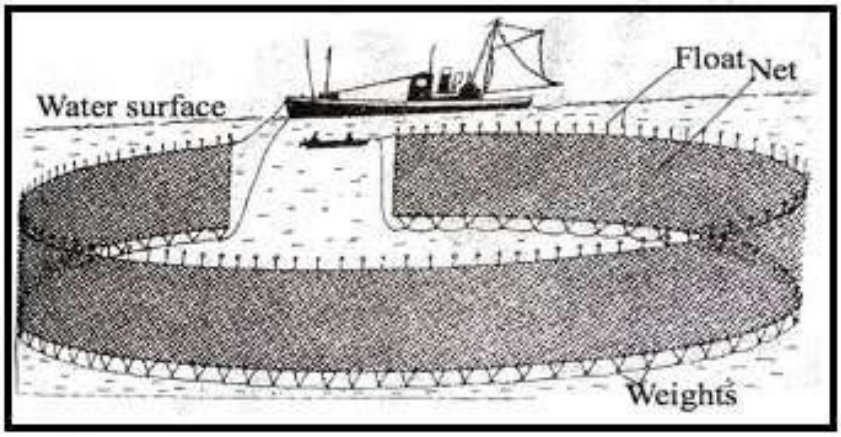
(a) (i) Draw comparative line graphs to represent the data given.Use a scale of 1 cm to represent 500 million Ksh.on the vertical axis. **(7 marks)**

(ii) Describe the trend of value of exports from 1999 to 2007. **(3 marks)**

(iii) Describe the factors which may have led to the increased export earning from 2004. **(6 marks)**

(b) Explain why Kenya experiences unfavorable balance of trade. **(6 marks)**

(c) State **three** ways in which the Kenyan Government is promoting export trade. **(3 marks)**



7. The diagram below represents a fishing method. Use it to answer question (a) below.

(a) (i) Identify the method of fishing shown below. **(1 mark)**

(ii) Describe how the above method is used in fishing. **(5 marks)**

(iii) Give **three** examples of fish species caught by the above method. **(3 marks)**

(b) Explain **four** factors that favour the fishing industry in Japan. **(8 marks)**

(c) Explain **four** reasons why East Africa does not export large quantities of fish. **(8 marks)**

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8. (a) Identify **three** kinds of roads used in Africa. **(3 marks)**

(b) Name **four** major high ways in Africa. **(4 marks)**

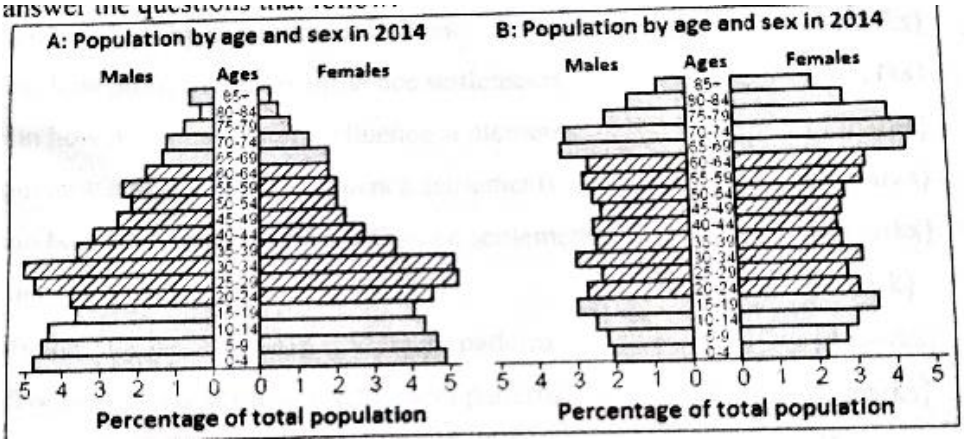
(c) (i) Name **four** major world sea routes. **(4 marks)**

(ii)Explain **two** factors that make the major sea and ocean routes to be concentrate in the Northern Hemisphere. **(4 marks)**

(d) (i) Give **two** forms of written communication**.** **(2 marks)**

(ii) Explain **four** human problems facing transport in Africa. **(8 marks)**

9. The diagrams below shows the population structures of two countries A and B. Study it and answer the questions that follow.



(a) Identify the type of graph above. **(1 mark)**

(b) (i) Which one belongs to Kenya. **(1 mark)**

(ii) Which one belongs to Sweden. **(1 mark)**

(c) Describe five characteristics of population structure for country A**.** **(5 marks)**

(d) (i) List two types of internal migration. **(2 marks)**

(ii) Give three ways in which government policy causes migration. **(3 marks)**

(e) State any four problems resulting from high population growth rate. **(4 marks)**

(f) Explain four factors that have contributed to high population growth in Kenya. **(8 marks)**

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10. **(a)** Identify **two** irrigation schemes in Kenya other than Mwea Tebere.**(2 marks)**

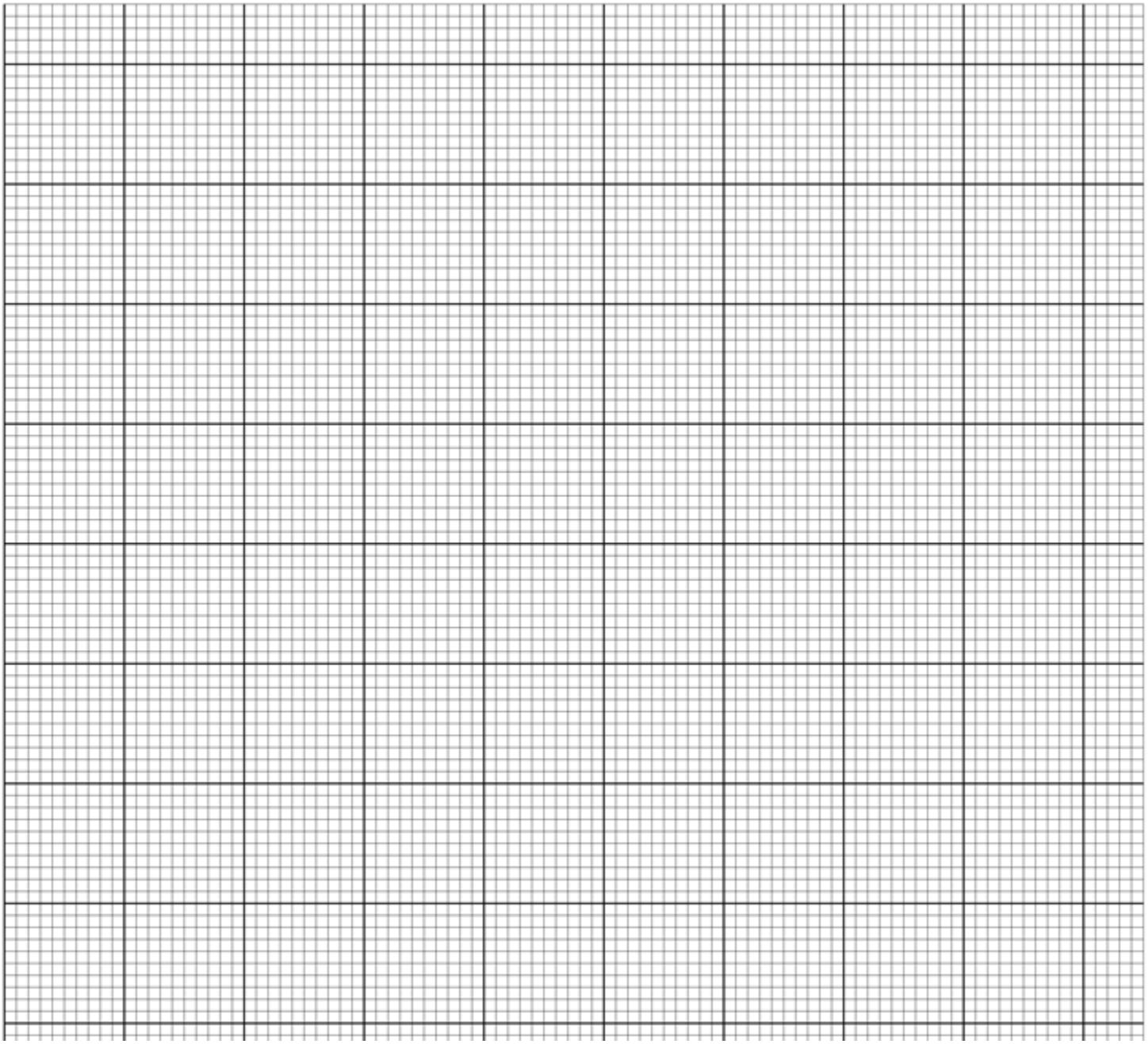
(b) Differentiate between land rehabilitation and land reclamation. (2 marks)

(c) Explain **three** factors that have led to the success of Mwea Tebere Irrigation Scheme.(6 marks)

(d) State **four** significance of irrigation farming in Kenya. (4 marks)

(e) Explain **two** methods that are used to rehabilitate land. (4 marks)

(f) Explain the steps followed in reclaiming land in Netherlands. (7 marks)



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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……...

311/1

HISTORY AND GOVERNMENT

PAPER 1

311//1

TIME: 2½ hours

INSTRUCTIONS TO THE CANDIDATES

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

FOR EXAMINERS USE ONLY

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

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SECTION A: (25marks)

Answer all the questions in this section

1. State two ways in which Kenyan communities interacted with each other in the pre-colonial period. **(2mks)**

2. Name two groups of the Mijikenda community. **(2mks)**

3. State two functions of Fort Jesus during the Portuguese rule. **(2mks)**

4. Identify one economic responsibility of a Kenyan citizen**.** **(1mk)**

5. Name two national activities that promote national unity in Kenya. **(2mks)**

6. Identify the constitutional amendment that was repealed to revert to a multi-party state in Kenya in 1991. **(1mk)**

7. Name one survival right of a child under the constitution. **(1mk)**

8. Identify the treaty that finalized the partition of East Africa**.** **(1mk)**

9. Give the main reason why native reserves were created during the colonial period. **(1mk)**

10. State two contributions of the independent schools during colonial period. **(2mks)**

11. Identify the main contribution of Wangari Maathai**.** **(1mk)**

12. Name two organs of the Kenya Defense Forces. **(2mks)**

13. Identify two pillars of Nyayo philosophy. **(2mks)**

14. Identify two political challenges that Kenya experienced between 1969-1978. **(2mks)**

15. Give the main function of the county assembly. **(1mk)**

16. Give one example of conditional grants given to county government. **(1mk)**

17. Name the government department that collects taxes. **(1mk)**

SECTION B 45 marks

18. (a). State five reasons for the migration of the Eastern Bantu. **(5mks)**

(b). Describe the political organization of the Mijikenda in the pre-colonial period. (**10mks)**

19. (a). State three reasons why the Maasai collaborated with the British**.** **(3mks)**

(b). Explain six reasons why Kenyan communities were defeated by the British. **(12mks)**

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20. (a). State three reasons why the British government invited European settlers in Kenya. **(3mks)**

(b). Explain six factors that led to growth of nationalist activities in Kenya between 1945-1963. **(12mks)**

21. (a). State five ways in which the government of Kenya has promote health sector since independence**.** **(5mks).**

(b). Explain five challenges facing agricultural sector in Kenya since independence. **(10mk)**

SECTION C 30 marks

22. (a). State three ways in which one can become a Kenyan citizen through registration **(3mks)**

(b). Explain six factors that undermine national unity**.** **(12mks)**

23.(a). State five functions of the Independent Electoral and Boundaries Commission of Kenya. **(5mks)**

(b). Explain five ways in which the independence of the Judiciary is guaranteed in Kenya. **(10mks)**

24. (a). Identify three sources of revenue for the county government. **(3mks)**

(b). Explain six ways in which the national government uses its revenue. **(12mks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……

SCHOOL: ……..……..

ADM NO: …….. SIGN: ……. DATE: ……

311/2

HISTORY AND GOVERNMENT

Paper 2

Duration: 2 hours 30 Minutes

INSTRUCTIONS TO THE CANDIDATES

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

FOR EXAMINERS USE ONLY

Section	Question	Maximum Score	Candidates Score
A	1-17	25	
B	18-21	45	
C	22-24	30	
Total Score		**100**	

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SECTION A: (25marks)

Answer all questions in this section

1. Identify one electronic source of historical information on history and government. **(1 mk)**

2. Name one theory that explains the origin of human beings. **(1 mk).**

3. State one negative effect of Land Enclosure system in British during the agrarian revolution. **(1mk)**

4. Identify two types of trade. **(2 mks)**

5. State two characteristics of Macadam roads**.** **(2 mks)**

6. Give two examples of print media. **(2 mks)**

7. State two ways in which the government of India promoted industrial growth. **(2 mks)**

8. Identify two reasons why Cairo town grew along the Nile Valley**.** **(2 mks)**

9. State one function of Asantehene of the Asante Empire in the 19th century. **(1 mk)**

10. Identify two main methods used by the Europeans to acquire colonies in Africa in the second half of the 19th century. **(2 mks)**

11. State two reasons why the British used direct rule in Zimbabwe. **(2mks)**

12. Give the immediate cause of the First World War (1914-1918). **(1 mk)**

13. Identify two permanent members of the United Nation security council. (**2 mks)**

14. Name one military Organization that was formed during the cold war in Europe. **(1 mk)**

15. Identify one country in East Africa that is not a member of the Common Market for Eastern and Southern Africa (COMESA). **(1 mk)**

16. Outline the main political challenge the Democratic Republic of Congo (DRC) has experienced since independence**.** **(1mk)**

17. State one way in which one can become a member of the British parliament**.** **(1 mk)**

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SECTION B (45 marks)

Answer any three questions from this section

18. (a). State five limitations of archaeology as a source of information on history and government. (5 mks)

(b). Describe the way of life of early human beings during the old stone age. **(10 mks)**

19. (a). State five factors that led to the development of the Trans-Saharan trade. **(5 mks)**

(b). Explain five results of railway transport in Europe in the 19th century. **(10 mks)**

20. (a). State three roles of the television as a modern form of communication. **(3 mks)**

(b). Explain six problems facing Johannesburg as a modern city. **(12 mks)**

21. (a). State five causes of Maji-Maji rebellion (1905-1907). **(5 mks)**

(b). Explain five results of the Lozi collaboration with the British. **(10mks)**

SECTION C (30 marks)

Answer any two questions from this section

22. (a). State five reasons why Sir Fredrick Lugard used indirect rule in Northern Nigeria. **(5 mks)**

(b). Explain five reasons why assimilation policy failed in French West Africa. **(10 mks)**

23. (a). State three principles of Arusha declaration of 1967. **(3 mks)**

(b). Explain six political challenges the Democratic Republic of Congo has faced since independence**.** **(12mks)**

24. (a). State three conditions to be elected as the president of India. **(3 mks)**

(b). State six functions of British Monarch**.** **(12 mks)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……...

HOME SCIENCE

PAPER 1

(THEORY)

2½ HOURS

INSTRUCTIONS TO CANDIDATES

- This paper contains 3 sections: A, B and C
- Answer **ALL** questions in section A and B and choose any TWO from section C
- Write your name and admission number in the spaces provided above.
- Sign and write the date in the spaces provided above.
- All answers should be written in the spaces provided on the question paper.
- Candidates should answer the questions in English.

For official Use Only

SECTIONS	QUESTION	MAX. SCORE	ACTUAL SCORE
A	1 – 30	40 MARKS	
B	31	20 MARKS	
C	32,33,34	40 MARKS	
		TOTAL	

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SECTION A: (40 MARKS)

Attempt ALL questions in this section. Write answers in the spaces provided

1. Point out two non-decorative patches in repair of clothes and household article **(1 mark)**

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2. Note down two effects of deep-frying protein foods without coating **(2 mark)**

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3. Give two measuring tools in needlework. **(1 mark)**

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4. Point out the major difference between cotton and wool viewed under a microscope **(1 mark)**

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5. Explain the meaning of the term dredge as used in flour mixtures **(1 mark)**

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6. Give two uses of salt in laundry work **(1 mark)**

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7. What is consumer education **(1mark)**

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8. Outline two major signs of goiter **(1 mark)**

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9. Suggest two other methods of storing clothes and household linen apart from folding

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10. State two factors that make biogas an unpopular fuel. **(2 mark)**

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11. Give two reasons for serving water in a meal **(2 mark)**

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12. Outline two advantages of using a potato peeler over a kitchen knife. **(2 mark)**

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13. Give two suggestions for painting your ceiling boards with a light colour. **(2 mark)**

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14. State two advantages of choosing boiling as a method of cooking **(1 mark)**

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15. Explain how preservation is achieved through smoking **(1 mark)**

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16. Outline two ways of achieving shirring in disposal of fullness **(1 mark)**

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17. Give two disadvantages of prolonged use of convenience foods **(1 mark)**

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18. List two ways of saving time and energy during cooking. **(2 mark)**

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Prefer Calling Amobi Group of Examiners @ 0743 333 000 OR 0706 851 439 for Marking Schemes

19. Describe how to take hip measurements **(2 mark)**

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20. What is rinsing as used in laundry work **(1 mark)**

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21. Point out two uses of temporary stitches in clothing construction **(1 mark)**

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22. Name two special treatments done before final rinsing **(1 mark)**

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23. State two disadvantages of using powdered formulae to feed the baby **(2 mark)**

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24. Give two factors that determine the length of a skirt **(1 mark)**

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Prefer Calling Amobi Group of Examiners @ 0743 333 000 OR 0706 851 439 for Marking Schemes

25. Give two sources of natural food poisoning **(1 mark)**

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26. List two qualities of a good girls' teddy bear **(2 mark)**

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27. State two methods of attaching collars **(1 mark)**

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28. Outline two uses of interfacing **(1 mark)**

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29. Give two reasons why soaking of wooden handled Knives is discouraged. **(2marks)**

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30. Name two components of a two-course meal. **(1 mark)**

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Prefer Calling Amobi Group of Examiners @ 0743 333 000 OR 0706 851 439 for Marking Schemes

SECTION B: (20 MARKS)

Compulsory

Today is your cleaning day;

31. a). Launder a white cotton tea towel **(9 mks)**

b) launder a loose coloured shirt . **(8 mks)**

c) Outline steps to follow when cleaning water glasses **(5 marks)**

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SECTION C: (40 MARKS)

Answer any TWO questions from this section in the spaces provided at the end of this section.

32.a) State reasons for including vitamin C (Ascorbic acid)in our diet daily. (4 marks)

b) Negative effects of advertisement to the consumer (4 marks)

c) Giving a reason, mention four blood tests carried out in an antenatal clinic (4 marks)

d) Mention four ways through which an individual may suffer from anaemia. (4 marks)

e) Describe four methods used to transfer pattern markings (4 marks)

33.a) You are giving a talk on care of invalids. Give four points you would include on preventive measures **(4 marks)**

b) Explain four points importance of preparing a shopping list before going for shopping **(4 marks)**

c) Identify four ways in which measles can be managed in infants. **(4 marks)**

d) Give four benefits of vitamin B2 in the human body **(4 marks)**

e) Balance points are matched with other similar ones. Point out four areas where they are likely to be put on a garment **(4 marks)**

34.a) Outline four factors to bear in mind when picking flowers to arrange **(4 marks)**

b) Explain the following terms as used in consumer education; **(4 marks)**

c) State four principles used when administering first Aid to a victim of poison **(4 marks)**

d) State and explain four nutrient conservation measures taken during food preparation before cooking **(4 marks)**

e) Use the pattern below to describe the working of an inverted pleat **(4 marks)**
Include a clearly labelled diagram.

1									

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……..…

SCHOOL: ……....…….

ADM NO: …….. SIGN: ……. DATE: ……..

HOME SCIENCE

(CLOTHING CONSTRUCTION)

PAPER 2 (PRACTICAL)

2HOURS AND 30 MINUTES

CHILD'S BLOUSE A pattern of a child‘s blouse is provided. You are advised to study the sketches, instructions and layout carefully before you begin the test.

MATERIALS PROVIDED

1. Pattern pieces

- Blouse front
- Blouse back
- Sleeve
- Sleeve band
- Front neck facing
- Back neck facing

2. 2 Plain light weight cotton fabric 60 cm long by 91 cm wide.

3 Sewing thread to match.

4 One large envelope.

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THE TEST

Using the materials provided, cut out and make the RIGHT HALF of the child‘s blouse to show the following processes:

(a) making of the double pointed dart.

(b) making of the shoulder seam using an open scam.

(c) making of the side seam using a french seam

(d) preparation of the sleeve to include: (i) french seam (ii) hemming the band half way.

(e) attaching of the sleeve. Do not neaten the seam.

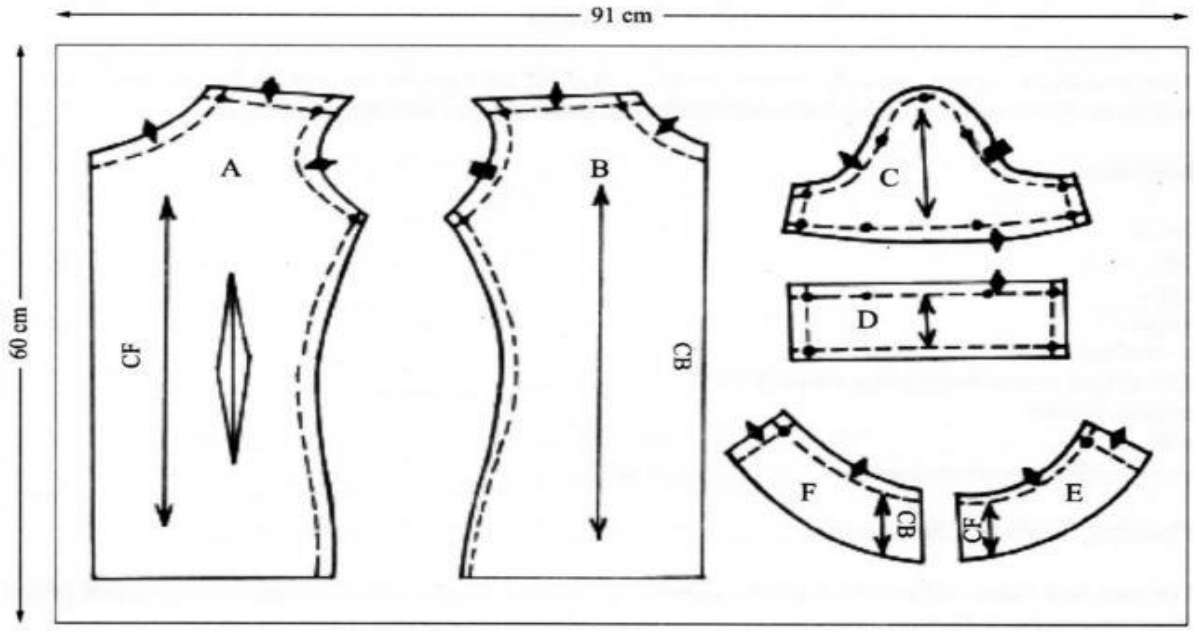
(l) joining the from and back facing.

(g) attaching the facing to finish the neckline and neatening the free edge.

At the end of the examination. firmly sew onto your work, on a single fabric. a label hearing your name and index number. Remove the needle, pins and loose threads from your work. Fold your work neatly and place it in the envelope provided. **D0 not put scraps of fabric in the envelope.**

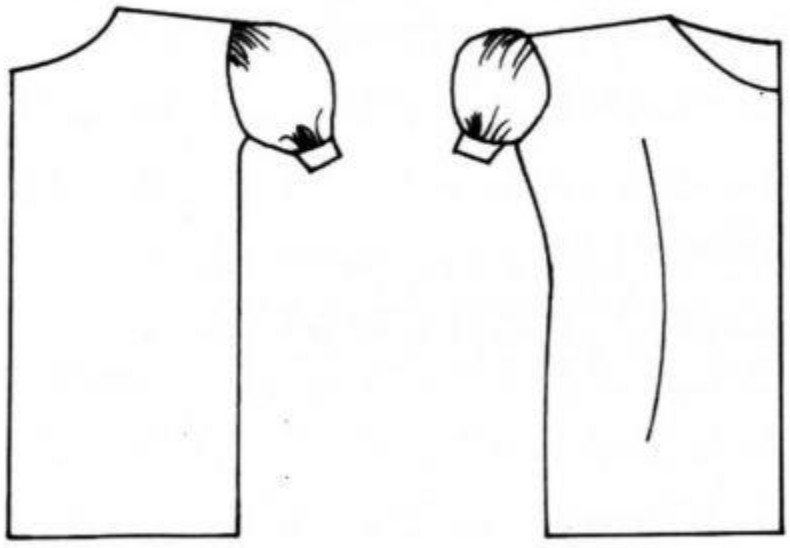
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THE LAYOUT (not drawn to scale)



THE SKETCH

THE SKETCH



Back view

Front view

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

SCHOOL: ……..…….

ADM NO: …….. SIGN: ……. DATE: ……..

HOMESCIENCE – (FOODS AND NUTRITION PRACTICAL)

PAPER 3

TIME: 1 ¾ HOURS

PLANNING SESSION: 30MINUTES

PRACTICAL TEST SESSION: 1 ¼ HOURS

Instructions to candidates

1. Read the test carefully.
2. Write your name on every sheet of paper.
3. Text books and recipes may be used during the planning sessions as reference.
4. You will be expected to keep to your order of work during the practical session.
5. You are only allowed to take away your reference materials at the end of the planning session.
6. You are not allowed to bring additional notes to the practical.

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a) The test

You and your sibling are at home during school holidays. Using the ingredients listed below, plan, prepare and present a two course breakfast for the two of you.

b) Ingredients

- Sweet potatoes/ Arrow roots
- Bread
- Margarine/Cooking oil/Fat
- Tomatoes/Lettuce
- Onions
- Eggs/Sausages
- Oranges/Pineapple/Ripe bananas
- Tea leaves/Cocoa/Drinking chocolate
- Milk
- Sugar
- Salt

c) PLANNING SESSION - 30MINUTES

For each task listed below, use separate sheets of paper and make duplicate copies using carbon paper then proceed as follows:

1) Identify the dishes and write down the recipes.
2) Make a list of equipment and materials you will require.
3) Write down your order of work.

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

314/1 –

I.R.E –

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							

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1. a) Explain the differences between Makkan and Madina Surahs **(7marks)**

b) State the benefits of translating the Quran into other languages **(7marks)**

c) Explain the circumstances that led to the revelation of suratul hujurat **(6marks)**

2. a) Describe the ways in which angel Jibril assisted Prophet Mohammad in his mission **(7marks)**

b) Give the reasons why the Quran was revealed in the Arabic **(6marks)**

c) State the teachings on interpersonal relationships between Muslims according to suratul Hujurat **(7marks)**

3.a) The prophet said "The strong man is not the good wrestler, the strong man is in fact the person who controls himself at the time of anger

In reference to the above Hadith explain in which ways Muslim can manage Anger (7marks)

b) Give reasons why Muslims should care for animals **(7marks)**

c) What are the characteristics of weak (dhaif) Hadith **(6 marks)**

4.a) Discuss The significance of tawba to a Muslim **(8marks)**

b) Outline the six achievements of imam Malik **(6marks)**

c) State six conditions that necessitate the performance of ghusl **(6 marks)**

5.a) Explain **five** differences between the Islamic Sharia and secular Laws **(10marks)**

b) List five punishments of crimes under hudud laws **(5marks)**

c) State the conditions to be fulfilled for one to be considered a mujtahid **(6marks)**

6.a) Explain the significance of divine guidance in the life of a muslim **(7marks)**

b) Give the meaning of the following attributes of Allah **(6marks)**

- Al hayyu
- As-Swamad
- Al qayyum
- Al quddus
- Al Razzaq
- Al Rahim

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c) State the different interpretations of the term Imamah (7marks)

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NAME: ……...……

SCHOOL: ……....……...…..

ADM NO: …….. SIGN: ……. DATE: ……..…

314/2

I.R.E

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							

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Q1. a) Explain the reasons for divorce in the society **(8mks)**

b) Give **six** reasons why abortion is prohibited in Islam **(6mks)**

c) Identify any six deeds that lead to piety and righteousness **(6mks)**

Q2. a) What is the significance of practicing honest in trade (**8mks)**

b) Explain the importance of Eddat **(6mks)**

c) State any **six** rights of a Muslim girl child **(6mks)**

3. a) Discuss any four factors that will prevent a heir from inheriting **(8mks)**

b) How does Islam empower women economically **(6mks)**

c) Describe any six ways through which Muslims can assist in the eradication of corruption in the society**(6mks)**

4. a) Discuss four differences between Hijra to Madina and Hijra to Abyssinia **(8mks)**

b) Identify any **six** allegations labelled against caliph Uthman **(6mks)**

c) Outline the achievements of the Ummayad Dynasty **(6mks)**

5. a) Outline the challenges faced by Muslims in the spread of Islam in East Africa in the period between 1700 and 1900 A.D. **(8mks)**

b) Discuss ways in which the Muslim city states on East African Coast facilitated the spread of Islam in the region **(7mks)**

c) Mention **five** economic activities practiced during the Jahiliyyah period **(5mks)**

6. a) Describe **six** lessons that a Muslim can learn from sheikh al Amin Mazrui **(6mks)**

b) Explain measures introduced by Hassan Al Banna to reform the Egyptian society **(7mks)**

c) State Imam Ghazal's views on children's education **(7mks)**

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JINA: ……

SHULE: ……....……...

NAMBARI YA USAJILI: …….. SAHIHI: ……. TAREHE: …….

102/1

KISWAHILI Karatasi ya 1

Muda: Saa 1 ¾

MAAGIZO

a) Andika jina lako na nambari yako ya mtihani katika nafasi ulizoachiwa hapo juu.
b) Tia sahihi yako kisha uandike tarehe ya mtihani katika nafasi ulizoachiwa hapo juu.
c) Andika insha mbili. Swali la **kwanza** ni la lazima.
d) Kisha chagua insha nyingine moja kutoka kwa hizo tatu zilizobakia.
e) Kila insha isipungue maneno 400.
f) Kila insha ina alama 20.
g) Kila insha lazima iandikwe kwa lugha ya Kiswahili

Kwa Matumizi ya Mtahini Pekee

Swali	Upeo	Alama
1	20	
2	20	
3	20	
4	20	
	Jumla 40	

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1. Wewe kama msimamizi wa mifumo ya elimu umealikwa na mwandishi wa habari ili kuhojiwa kuhusu changamoto zinazokumba mfumo mpya wa elimu ya umilisi. Andika mahojiano hayo.

2. Serikali za majimbo zitawafaa wananchi wote. Fafanua.

3. Mchagua nazi hupata koroma. Thibitisha ukweli wa methali hii.

4. Anza insha kwa maneno haya; Nilizinduka jimbi la kwanza na kujiandaa kwenda katika hafla…….

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

JINA: ……..……

SHULE: ……....……....

NAMBARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……..

102/ 2

KISWAHILI

Karatasi ya Pili

LUGHA

Muda: Saa 2 ½

Maagizo

a) Andika jina lako na nambari yako katika nafasi ulizoachiwa hapo juu.

b) Weka sahihi yako na tarehe ya mtihani katika nafasi ulizoachiwa hapo juu.

c) Jibu maswali yote

d) Majibu yote yaandikwe katika nafasi ulizoachiwa katika kijitabu cha maswali.

e) Majibu yote lazima yaandikwe kwa lugha ya Kiswahili

Kwa Matumizi Ya Mtahini Pekee:

Swali	Upeo	Alama
1	15	
2	15	
3	40	
4	10	
Jumla	80	

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1. **UFAHAMU**

Soma makala yafuatayo kisha utekeleze maagizo yafuatayo

Utotoni niliamini kwamba kusoma ndiko ufunguo wa kila kitu ulimwenguni kwa jinsi kunavyoonekana kuwatoa watu katika uzuzu, ukata na ugonjwa: na kuweka kwenye maisha bora ya mwangaza wa kujua kusoma na kuandika, utajiri wa kuweza kuvaa hata suti ya vipande vitatu, na kuwa na afya ya kuonekana kwa kitambi. Hizo ni zamani zile ambapo shule ya vidudu haikuwa sharti la mtoto kukubaliwa katika darasa la kwanza. Mtoto angelisha au kusaidia kwa kazi za nyumbani mpaka kufika umri labda wa miaka kumi kisha, kufumba na kufumbua, afisa wa serikali angeonekana akishauriana na mzazi wa mtoto. Matokeo yangekuwa mtoto huyo kuanza safari ndefu ya kila siku, apate asipate chakula.

Mimi kwa upande wangu sikujali maisha pata-nenda shule, kosa – bado – nenda – shule. Sikujali kero za baridi kali wala karaha za vua la asubuhi. Kuanzia utotoni *niliwahusudu* wenzangu waliokuwa wakirauka kiasi cha kufikiriwa kuwa walilala kwa shati na kaptula zao, au kwa blauzi na skati na kaptula zao. Nilipendezwa na yunifomu zao nikatamani na hata kuapa kwamba siku moja nitavaa kama wao na kutembea kwa maringo kama wao. Zaidi nilitamani kufika walikokuwa wakienda na kufanya walivyokuwa wakifanya huko.

Penye nia hapakosi njia. Nia yangu ilidhihirika pale nilipojiunga na darasa la kwanza. Darasa la kwanza lilinisoma kisogo baada ya siku mbili tu. Nalo la pili likanipungia mkono baada ya juma moja. Miaka mitano baadaye nilikutana na kiunzi cha kwanza kwenye mtihani wa kitaifa wa chumba cha saba uliokuwa kifungua mlango wa kuingilia kidato cha kwanza.

Baada ya miaka minne nilikutana na mlango funge mwingine ambapo nilibisha na ukanifungukia kwa *kutia fora* katika mtihani wa kiwango cha elimu ya upili. Katika miaka miwili iliyofuatia nilijiunga na shule maarufu ya kitaifa siku hizo.

Masomo hayakuendelea kuwa mteremko kwangu kwani uchechefu wa karo na masurufu ulimaanisha kuwa siku nyingi nilikuwa nje ya kuta za darasa letu. Hata ivyo *nilijifunga masombo.*Hatimaye nilifunguliwa milango ya kuingia ndaki.

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Baada ya kuhitimu kwa shahada ya kimsingi ya uzamili, kisha uzamifu au udaktari falsafa hatimaye, nilifanywa meneja kufikia leo. Hata nikiwa ukubwani bado ninazidi kusoma na kutafiti ili nisiote ukurutu wa akili.

Cheo na madaraka haya ya umeneja yamaanisha kila siku nivae suti kamili na shati nyeupe pe, ambayo shingoni imeambatanishwa na kipande maalumu cha kitambaa kinacholewalewa kifuani. Nijiangaliapo kiooni hujifananisha na mtu ambaye amejitia kitanzi shingoni.

Nina kitambi ambacho labda ni *taashira* ya utajiri. Hata hivyo ingawa mimi si tajiri mwenye sauti kubwa kiuchumi, ninaweza kujivunia elimu yangu iliyoniwezesha kujimudu kidogo maishani. Sasa nina shamba langu mwenyewe, nyumba yangu mwenyewe ambayo imejaa mali yangu mwenyewe. Nina redio yangu mwenyewe, rununu yangu mwenyewe na wanyama wangu mwenyewe.

Lakini mwenzangu ambaye zilimwishia ukingoni katika shule za nasari, hana elimu, pesa wala mahali pa kuzikiwa wakati mpira utakapomwia mwingi.

MASWALI

a) Eleza imani ya mwandishi kuhusu elimu. **(alama 3)**

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b) Taja dhiki zilizomkabili mwandishi alipokuwa shuleni **(alama 2)**

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c) Onyesha uhusiano uliopo kati ya elimu, kazi na ukwasi kwa mujibu wa habari hii. (alama 3)

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d) Ukirejelea makala haya, fafanua msemo, ‘elimu ni bahari haina kikomo’ **(alama 3)**

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e) Hatima ya wale ambao hawakupata elimu ni ipi? **(alama 2)**

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f. Badala ya maneno yafuatayo mwandishi angetumia msamiati gani? (alama 3)

i. Niliwahusudu……

ii. Ndaki……..…

iii. Taashira……..

2. UFUPISHO

Dhuluma kwa wanawake sio matokeo ya siasa baada ya uhuru, bali ni matokeo ya hali iliyokuwepo tangu enzi za mababu zetu; kabla ya ukoloni. Kubaguliwa na kudhulumiwa kwa wanawake kisiasa kunaoana na kunyonywa kwake kijamii kunakoshuhudiwa siku nenda miaka rudi.

Elimu ya jadi ilimwandaa mwanamke kuwa chombo kitiifu cha mwanamume. Mwanamke aliandaliwa katika unyago na katika mfumo mzima wa malezi kuwa chombo cha kutumikia mwanamume-kumstarehesha, kumfariji, kumlisha na kumzalia watoto. Mwanamke tangu jadi

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hakuruhusiwa kushiriki katika shughuli za kisiasa na utawala wala hakuna mtu aliyeamini kwamba mwanmke angeweza kushikilia wadhifa wowote wa uongozi.

Demokrasia ya jadi naihusudu sana; ambapo wazee walikaa chini ya mbuyu na kuamua mambo ya jumuiya. Mahakama ya kijiji ilikuwa aghalabu ni ya wazee na na wanaume peke yao. Hakukuwa na mwanamke aliyeshirikishwa, hata kama alikuwa ajuza. Sifa waliyokuwa nayo wanawake ni ile ya usihiri na uganga. Mwanamke yeyote ailiyezeeka alidhaniwa kuwa bingwa wa uchawi, ulozi na ushirikina. Kwa hivyo, wanawake ndio waliokuwa washirikina wakubwa, maana fursa ya kupata elimu pana zaidi hawakuwa nayo. Si ajabu kuwa mwanamke alipojitokeza na kusema jambo la busara, alipuuzwa na pengine kutukanwa hadharani.

Kwa bahati nzuri, kumezuka mwamko uliotuingiza katika enzi mpya. Vita vya wanawake vya kujihami na kujiendeleza katika ulimwengu unaotawaliwa na wanaume vimetapakaa kote katika kila sehemu ya dunia. Wanawake wengi wamekiuka misingi na miziz ya utamanduni na kung'oa asasi za kijamii na itikadi ambazo daima zimeendelea kumyanyasa na kumuumbua utu mwanamke tangu jadi. Watetezi wa haki za wanawake zamani walilaumu suala la serikali za mataifa mwaka hadi mwaka. Huku masuala ya wanawake ya kijamii, utu na utamaduni yakishangiliwa kupitishwa, watetezi wameeleza wasiwasi wao ikiwa kupitishwa kwa maazimio kutasaidia kuleta maendeleo ya haraka kwa wanawake kimataifa au katika nchi moja. Fauka ya hayo, baadhi ya wachunguzi wanaonelea kuwa maazimio mengi hayadokezi hatua za kufikiwa haki za wanawake.

Maazimio mengine yanazungumzia juu ya kuondolewa kwa ubaguzi dhidi ya wanawake, kushiriki kwao katika uendelezaji wa amani ya kimataifa na ushirikiano wa kimataifa, majukumu yao katika jamii, mfuko wa Umoja wa Mataifa wa wanawake (Unifem) na kuimarisha hadhi ya wanawake katika sekretariati ya Umoja wa Mataifa miongoni mwa shughuli nyingine katika mkabala huu.

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Wanawake wameonyesha vipaji vyao katika nyanja mbalimbali za maisha; siasa, uchumi, utawala na kadhalika. Wanawake wamejikakamua na kudhihirisha kuwa wao pia wana jukumu muhimu la kutekeleza ili kuyaongoza maisha yao naya watu wengi. Wadumishaji wa dhuluma za kijinsia hawana budi kusalimu amri na kuukubali ukweli huu, wapende wasipende. Mtazamo juu ya haki sawa unatokana na kukubaliwa na kuondolewa kwa aina zote za ubaya dhidi ya wanwake wanojitolea mhanga kutetea hadhi yao pamoja naya wanyonge wengine. Wao huonekana kama waasi, wapinga mila na watovu wa utii.

MASWALI

a) Bila kubadilisha maana asilia, fupisha aya tatu za kwanza. (Maneno 45-55) (Alama 6)

Matayarisho

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Jibu.

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b) Kwa kurejelea aya tatu za mwisho, pambanua hoja muhimu zinazoguziwa na mwandishi.

(Maneno 60-65)

(Alama 9)

Matayarisho

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Jibu

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3. <u>MATUMIZI YA LUGHA (Alama 40)</u>

a) Tofautisha Irabu /u/ na /o/ **(Alama 2)**

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……..

b) Tunga sentensi ili kubaini matumizi ya neno vi<u>baya</u> katika sentensi kama;

kielezi na kivumishi (Alama 2)

kielezi

……
……..

Kivumishi

……
……..

c) Yakinisha sentensi ifuatayo.

Nisipomwona sitamlipa pesa zake. **(Alama 1)**

……
……..

d) Tumia kivumishi cha ‘a’ unganifu katika sentensi ukitumia nomino katika ngeli ya A-WA. **(Alama 2)**

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……..

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e) Tunga sentensi ili kutofautisha vitenzi vifuatavyo.

i) ni **(Alama 1)**

……

……..

ii) yamekuwa **(Alama 1)**

……

……..

f) Tunga sentensi ili kubaini; **(Alama 2)**

kivumishi cha idadi jumla

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……..

kivumishi cha idadi kamili

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g) Toa maana mbili ya sentensi hii

Nionyeshe vile nitakavyobeba. **(Alama 2)**

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h) Kanusha sentensi ifuatayo kwa njia mbili .

Wachezaji walikuwa wanafanya mazoezi. (**Alama 2)**

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i) Andika katika usemi wa taarifa.

"Tutakwenda kanisani kesho kutwa." Kame alisema. (Alama 2)

……

……

……..

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j) Changanua sentensi hii kwa kutumia kielezo jedwali. **(Alama 4)**

"Mshale huu mrefu umevunjika mara mbili

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k) Tunga sentensi mbili tofauti ili kudhihirisha matumizi ya 'mshazari' **(Alama 2)**

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l) Unganisha sentensi hii kwa kutumia kirejeshi 'O' Kucha zake ni ndefu. Kucha zimekatwa.

(Alama 1)

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m) Eleza matumizi ya 'Ki' katika sentensi

Ukirusha kipira kitapotea **(Alama 3)**

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n) Tunga sentensi ukitumia vitenzi vifuatavyo katika kauli zilizoonyeshwa. (Alama 2)

i) La (kutendeshana).

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ii) Pa (kutendesha).

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o) Andika neno lenye kiyeyusho. **(Alama 2)**

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p) Andika kwa wingi

Mtoto yuyu huyu ndiye aliyeiba nguo yangu. **(Alama 1)**

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q) Unda sentensi yenye vijenzi vifuatavyo vya kisarufi.

Kiwakilishi + kivumishi + kitenzi + kielezi **(Alama 1)**

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……..

r) Akifisha sentensi ifuatayo ;

Bw. Juma alimwambia bibi yake nitakutuza ukiendelea kutenda mazuri. **(Alama 2)**

……

……

……..

s. Tunga sentensi mbili ili kuonyesha tofauti kati ya maneno yafuatayo; **(alama 2)**

i. kua

……

……..

ii. kuwa

……

……

……..

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t. Tunga sentensi moja yenye virai viuatavyo. **(alama 2)**

RN (nomino, kivumishi kielezi), RT (kitenzi, nomino)

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u. Andika katika udogo. Kitabu cha mtu huyo kimeletwa na mwanafunzi wake. **(alama 1)**

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……..

4. <u>ISIMU JAMII (ALAMA 10)</u>

a) Ndada, mbona umerara sana na kecho akuna kazi.

i) Mzungumzaji ana tatizo gani? **(Alama 2)**

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……

……

……..

ii) Tatizo hili limesababishwa na nini? **(Alama 1)**

……

……

……..

b) Watu wanapozungumza huenda wakafanya makosa ya sarufi na ya kimatamshi hapa na pale, na hata hutumia msamiati vibaya.

Eleza sababu saba za kufanywa makosa haya **(Alama 7)**

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JINA: ……..

SHULE: ……..……

NAMBARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……..

102/3

KISWAHILI

KARATASI YA 3

FASIHI

MUDA: SAA 2 ½

MAAGIZO

*Jibu maswali manne **pekee**.*

*Swali la **kwanza** ni la **lazima***

Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki yaani; Riwaya Hadithi fupi,Tamthilia na Ushairi.

*Usijibu maswali **mawili** kutoka **sehemu moja**.*

Majibu yote yaandikwe kwa lugha ya Kiswahili

Kwa Matumizi ya Mtahini Pekee

Swali	Upeo	Alama
1	20	
	20	
	20	
	20	
	Jumla	

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SEHEMU A : FASIHI SIMULIZI

1. LAZIMA (ALAMA 20)

a. Jadili sifa zozote nne za mtambaji bora. **(alama 4)**

b. Fafanua hasara zozote nne za miviga. **(alama 4)**

c. Jadili hatua tano zinazofuatwa wakati wa utafiti. **(alama 5)**

d. Tofautisha istilahi zifuatazo za Fasihi Simulizi. **(alama 3)**

i. Matambiko

ii. pembezi

iii. Misimu

e. Eleza sifa nne za maapizo. **(alama 4)**

SEHEMU B: RIWAYA

ASSUMPTA MATEI: *CHOZI LA HERI*

Jibu swali la 2 au la 3

2. Mwandishi amejadili kwa kina maudhui ya mapuuza. Thibitisha . **(alama 20)**

Au

3. Maisha yangu yalijaa shubiri tangu utotoni.

i. Eleza muktadha wa maneno haya. **(alama 4)**

ii. Fafanua mbinu mbili za lugha zilizotumika katika dondoo hili. **(alama 4)**

iii. Jadili jinsi mwandishi amesawiri suala la ukatili. **(alama 12)**

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SEHEMU C: HADITHI FUPI

Chokocho na Kayanda(Wah)*Tumbo Lisiloshiba na Hadithi Nyingine*

Jibu swali la 4 au la 5

4. Jadili maudhui yaliyoonyeshwa kwenye mabano kutoka hadithi zifuatazo. **(alama 20)**

i. Tumbo Lisiloshiba (utabaka)

ii. Masharti ya Kisasa (Unyumba)

iii. Mkubwa (Ufisadi)

iv. Mwalimu Mstaafu (Elimu)

au

5. Tulipokutana Tena

i. Jadili istilahi za lugha zinazojitokeza katika kifungu hiki. **(alama 4)**

'Bogoa gani huyo?' Kazu alibadilisha toni ya sauti na mng'aro wa sura yake. Alikuwa tayari kajaa huzuni ingawa hadithi yenyewe alikuwa haifahamu vizuri. Usoni pake ulisimama unyeti na juu ya ngozi ya uso wake huruma zilijitokeza. Ndivyo alivyo Kazu kila siku. Anaweza kubadilika mara moja kama uso wa mtoto mchanga.

ii. Jadili umuhimu wa Bi Sinai katika hadithi hii. **(alama 8)**

iii. 'Jijini ni kuzuri. Kuna majumba makubwa, utapanda magari mazuri mazuri ya marafiki zetu, utakula vyakula vitamu na kupewa nguo za fahari. Utapelekwa shule kusoma na kuandika.' Kwa Bogoa , maneno haya ya babake ni kinaya. Thibitisha kwa hoja nane. **(alama 8)**

SEHEMU D: TAMTHILIA

KIGOGO PAULINE KEA

Jibu swali la 6 au la 7

6. i. Jadili dhamira ya mwandishi wa Tamthilia ya Kigogo. (alama 10)

ii. Fafanua jinsi Ujenzi wa jamii mpya umeshughulikiwa na mwandishi. (alama 10)

au

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7. Kutia kwa kulia na kutoa kwa kushoto.

i. Eleza muktadha wa maneno haya. **(alama 4)**

ii. Fafanua mbinu ya lugha iliyotumika. **(alama 2)**

iii. Fafanua sifa nne za msemaji wa maneno haya. **(alama 4)**

iv. Jadili mbinu hasi za uongozi katika Tamthilia. **(alama 10)**

SEHEMU E: USHAIRI (Alama 20)

8. SOMA SHAIRI KISHA UJIBU MASWALI.

1. Sidhani ni kichekesho, kesho kuwepo sidhani
Vilivyoko ni vitisho, viwewe na visirani
Mimi kupe kwenye josho, la sumu iso imani
Kesho yangu imeshaliwa.

2. Kesho yangu imeshaliwa, isibaki hata kitwa
Kwamba hai nitakuwa, kesho na kesho kutwa
Hilo haliwezi kuwa, na wakati limepitwa
Na i wapi kesho yangu?

3. Sikwambii mtondoo, au ni mtondogoo
Ajapowika jogoo, kesho sipo ng'oo
Hata simu za "haloo", hazinipati "haloo"
Nitaituhumu kesho.

4. Kesho nitaituhumu, kwa sababu ya hasama
Hasama ya mahasimu, waliolishana njama
Kutaka kunihujumu, wanizulie nakama
Itokapi yangu kesho?

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5. Wa kwanza huyu Ukimwi, daima aniotea
Kwa dawa huyu hazimwi, haachi kuturingia
Amekuwa kama zimwi, mtu lisilomjua
Ati nipangie kesho?!

6. Nipange yangu matanga, au kujenga nyumba?
Nipange kung'oa nanga, au shairi kuimba?
Nipangeni cha kupanga, biashara za mtumba?
Kesho si ukoo wangu.

7. Ukimwi nduguze wako, Ebola na Malaria
Kichomi na sekeneko, mno wajifaragua
Maadamu wangaliko, vipi kesho kuwazia?
Kesho si ndu yangu mwandani.

8. Mimi napangia leo, maana kesho sijui
Usafiri nifanyao, kwenye vyombo anuwai
Una mikasa kibao, majanga ya kila nui
Salama yangu i wapi?

9. I wapi salama yangu, huku wapo wa kijicho
Ngaa nipatapo changu, waingiwa mpekecho
Kunipikia majungu, nikikosa changu hicho
Waso nitakia kesho!

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10. Kesho wasonitakia, watele kama siafu
Majambazi nasinzia, tapeli na wazinifu
Roho yangu wapania, kunipeleka kwa ufu
Nipewe jina "Hayati"

MASWALI

a. Ujumbe wa shairi hili unakatisha tamaa. Thibitisha. **(4)**

b. Hili ni shairi la aina gani? **(1)**

c. Andika ubeti wa nne kwa lugha nathari. **(4).**

d.. Eleza mbinu nne za lugha zilizotumiwa. **(4)**

e. Andika bahari kwa kuzingatia vigezo; **(2).**

Mizani

Vina

f. Onyesho jinsi mshairi alivyotumia idhini yake ya kishairi. **(2).**

g. Taja; **(3)**

Toni

Nafsi - neni

Nafsi- nenewa.

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SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

121/1
MATHEMATICS -
Paper 1
ALT A - $2\frac{1}{2}$hours

Instructions to Candidates

(a) Write your name and index number in the spaces provided below
(b) Sign and write the date of examination in the spaces provided above.
(c) The paper consists of **TWO** sections: **Section I** and **Section II**.
(d) Answer **ALL** questions in **Section I** and **ONLY** five from **Section II**.
(e) All answers and working must be written on the question paper in the spaces provided below each question.
(f) Show all the steps in your calculations, giving your answers at each stage in the spaces below each question
(f) Marks may be given for correct working even if the answer is wrong.
(g) Non – programmable silent calculators and KNEC Mathematical tables may be used except where stated otherwise.
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Section I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total

GRAND TOTAL

17	18	19	20	21	22	23	24	Total

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SECTION 1 (50 MARKS)

Answer all the questions in the space provided below each question

1. Evaluate without using mathematical tables or calculator $\frac{-12\div4-6\times3+5\times2}{8+(-5)\div2\times(-4)}$ **(3marks)**

2. A three-digit number is such that twice the hundreds digit is more than the tens digit by 2.the unit digit is thrice the hundred digit. When the digits are reversed, the number is increased by 594.Find the number**.** **(4marks)**

3. Simplify $\frac{x+4}{x-4}-\frac{5x+20}{x^2-16}$ **(3marks)**

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4. The mass of maize flour to the nearest 10 grams is 8. 67kg.Determine the percentage error in this measurement. **(3marks)**

5. Without using a calculator, solve for x in the equation $0.5^{x} \times 0.125^{1-x} = 32$. **(3marks)**

6. The velocity V m/s of a particle in motion is given by $V = 3t^2 - 2t + 5$.Calculate the distance travelled by the particle between t= 2 seconds and t = 6 seconds. **(3 marks)**

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7. Given that, the coordinates of two points P and Q are $(2, \quad 3, \quad 5)$ and $(6, \quad k-1, \quad 15)$ respectively and that their position vectors are parallel, Calculate the value of $|\boldsymbol{PQ}|$**. (4marks)**

8. A dealer sells a mobile phone at a profit of 25%. The customer sells it to a friend at ksh 60,000, making a profit of 20 %. Find the cost prize of the mobile phone**.** **(3 marks)**

9. A wall clock that gains 20 seconds after every hour was set to read the correct time on Tuesday at 03 25. Determine the time the wall clock will read on Thursday 03 25 h. (**3 marks)**

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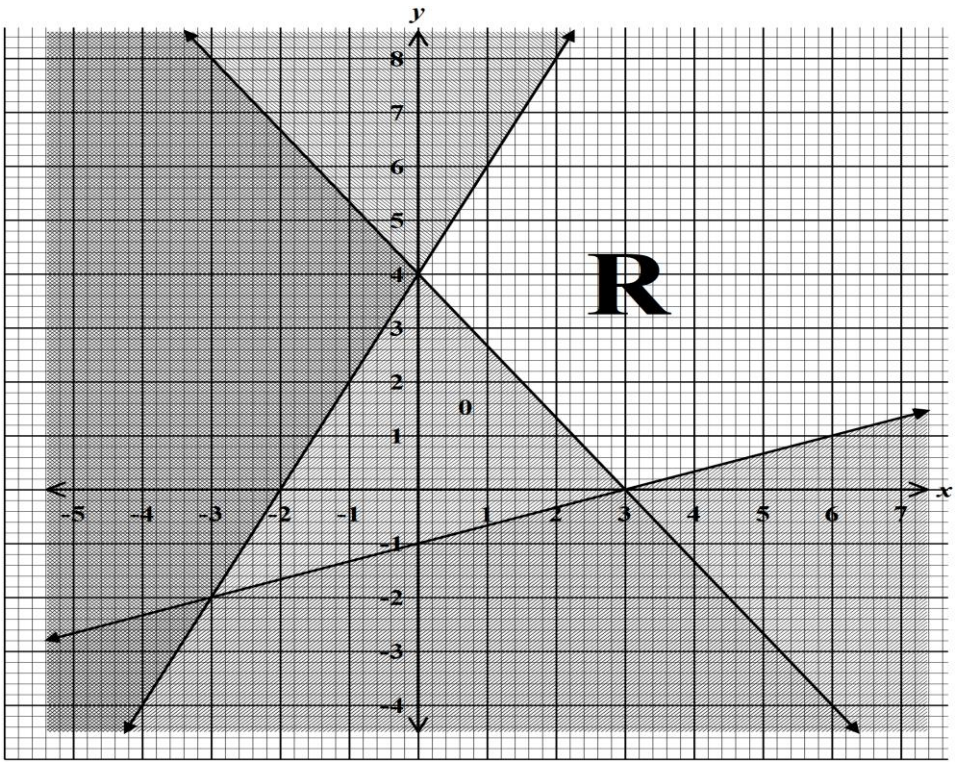
10. A cylinder of radius 15 cm and height 24 cm is filled with water. A solid hemisphere of radius 7cm is submerged into the cylinder and removed. Find the change in height of water level in the cylinder. **(4 marks)**

11. The average rate of depreciation in value of a laptop is 10% per annum. After three complete years its value was ksh 35,000. Determine its value at the start of the three-year period. **(3marks)**

12. If $3x + 2y : 7x - y = 3:2, calculate\ the\ ratio\ x:y$ **(3marks)**

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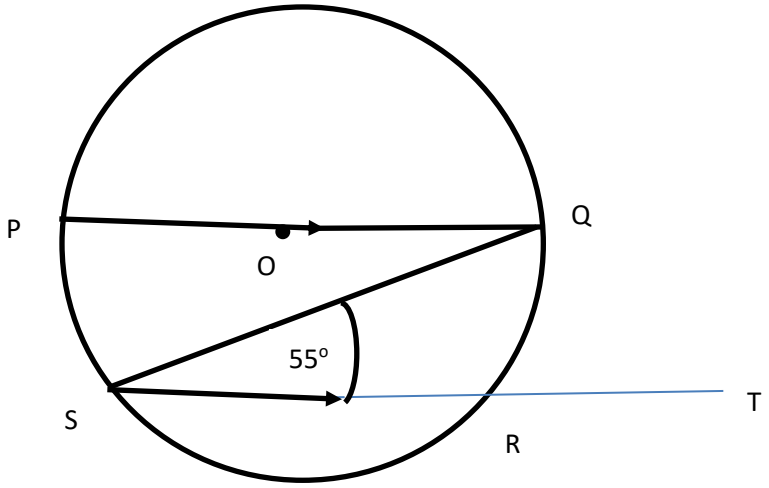
13. State the inequalities that satisfy the region defined by R. (3marks)



14. Solve for θ in the equation $\frac{\sin(2\theta+30)^\circ}{\cos(3\theta-40)^\circ} = tan45^\circ$ **(3marks)**

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15. The figure below shows a circle PQRS Centre O with SR produced to T.PQ//SR and $\angle QSR = 55°$.Calculate the size of$\angle QRT$**.** **(3 marks)**



16. The scale of a map is 1: 200.Calculate the actual area of a triangular coffee field whose sides are 6cm, 8cm and 10cm on the map. **(3 marks)**

SECTION 11 (50 MARKS)

*Answer **only** five questions from this section.*

17. A tower is on a bearing of 030^{o} from a point P and a distance of 100m.From P, the angle of elevation of the top of the tower is 15^{o} and the angle of depression of the foot of the tower is 1^{o}.

a). Calculate the height of the tower. **(4 marks)**

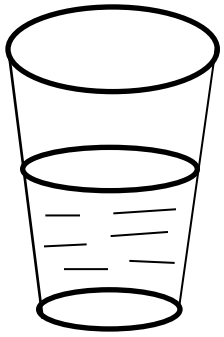
b). A point Q is on the same horizontal plane as point P. The tower is on a bearing of 330^{o}from Q and a distance of 70 m. Calculate:

i) The distance from P to Q**.** **(3 marks)**

ii) The bearing of P from Q. **(3 marks)**

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18.a) The diagram below shows a bucket in the shape of a frustum of a cone with diameters 36 cm and 24 cm and a vertical height of 28 cm. The bucket contains water such that the diameter of the water surface is 30cm. Calculate the volume of the bucket. (6 marks)



b) If the bucket above has a hole and 1.1 cm^3 of water leaks out every 5 seconds and collects in a cylindrical can of base radius and height 10 cm and 25 cm respectively. Calculate how long it takes to fill the cylindrical can. **(4 marks)**

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19. A piece of wire, 18 cm long is cut into two parts. The first part is bent to form the four sides of a rectangle having length x cm and breath 1 cm.

a). State two expressions in terms of x only for the perimeter of the square and the rectangle.

(2 marks)

b).If the sum of the areas of the square and the rectangle is A cm^2, show that $A = 16 - 3x + \frac{x^2}{4}$

(2 marks)

C). If $A = 8cm^2$, Solve the equation in (b) above for x, hence find the possible dimensions of the two pieces of wire**.** **(6 marks)**

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20. The distance between two towns P and Q is 300 km. A bus started at P at 10.30 am and travelled towards town Q at 80 km/h. After 45 minutes a car started at Q and travelled to town P at x km/h. The car met the bus after 1hour 20 minutes.

a) Determine the value of x**.** **(3 marks)**

b) Find the distance from P where the car met the bus. **(2 marks)**

c) At what time did the car meet the bus? **(2 marks)**

d) If t a shuttle started at P, 1hour after the car left Q for P. Calculate the speed to the nearest km/h at which the shuttle should be driven in order to arrive at Q at the same time with the bus**.** **(3 marks)**

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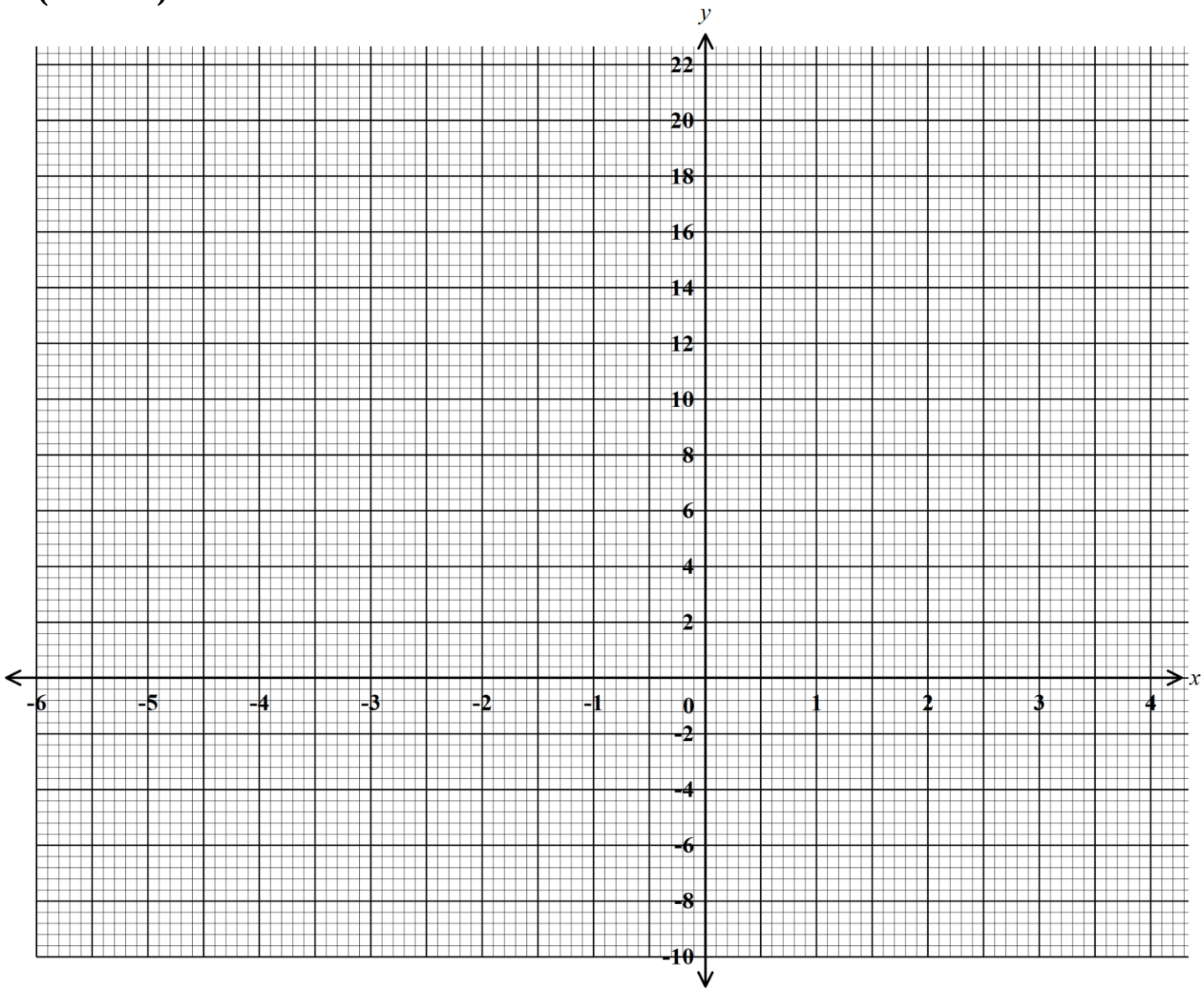
21.a) Complete the table of values for the equation $y = x^2 + 3x - 6$, given that $-6 \leq x \leq 4$.

(2marks)

x	-6	-5	-4	-3	-2	-1	0	1	2	3	4
y	12						-6				22

b) Using a scale of 1cm to represent 2 units in both axes, draw the graph of $y = x^2 + 3x - 6$.

(3 marks)



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c) Using the graph drawn above Solve the equation

i) $x^2 + 3x - 6 = 0$ **(2 marks)**

(ii) $x^2 + 3x - 2 = 0$ **(3 marks)**

22. A Business man is paid a commission of 5% on sales of goods worth over ksh 100,000. He is paid a monthly salary of ksh 15,000 but 2% of his total earning is remitted as tax. In a certain month he sold goods worthy khs 500,000.

a) Calculate his monthly net earnings that month. **(5marks)**

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b) The following month, his monthly salary increased by 20%. His commission was increased to 10% but on goods worth over ksh 200,000. If his total earnings that month was ksh 64,800, Calculate the money received from the sale of goods. **(5marks)**

23. The coordinates of two points A and B are (2, -3) and (-4, 5) and R is the mid-point of AB.

a) Determine the coordinates of R. **(2 marks)**

b) Find the equation of a straight line joining A and B, expressing it in the form $y = mx + c$ where m and c are constants. **(3 marks)**

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c) The straight line L_1 *which is a* perpendicular bisector of AB meets the X-axis at T. Find the coordinates of T**.** **(3 marks)**

d) If the straight line L_1 is parallel to a line that passes through the point (-1, 6) and (a, 8), find a. **(2 marks)**

24. Two inlet taps P and Q opened at the same time can fill a tank in $2\frac{1}{2}$ h. The two taps were opened together at the same time and after 1 hour 10 minutes tap Q was closed and P continued alone and filled the tank after a further 4 hours. Find:

a) The fraction of the tank filled by both taps for 1 hour. **(1 marks)**

b) The fraction of the tank filled by tap P after Q was closed. **(2 marks)**

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c) The time which each tap working alone would have taken to fill the tank. **(7 marks)**

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ADM NO: …….. SIGN: ……. DATE: ……..…

121/2

MATHEMATICS

PAPER 2

2 ½ HOURS

Instructions to candidates

- *Write your name, index number and class in the spaces provided above.*
- *The paper contains **two** sections: Section I and Section II.*
- *Answer **all** the questions in Section I and **only five** questions from Section II*
- *All answers and working must be written on the question paper in the spaces provided below each question.*
- *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*
- *Non – programmable silent electronic calculators and KNEC Mathematical tables may be used, except where stated otherwise.*

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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 1 (50 MARKS)

Answer all questions in this section.

1. Solve for x in the equation $2\text{Sin}^2x - 1 = \text{Cos}^2x + \text{Sin}x$ for $0^0 \leq x \leq 360^0$ **(3marks)**

2. (a) Expand $\left(1 + \frac{3}{x}\right)^5$ up to the fifth term **(2marks)**

(b)Hence use your expansion to evaluate the value of $(2.5)^5$ to 3 d.p. **(2 marks)**

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3. Complete the table below for $y = 8 - 2x - x^2$ for $-4 \leq x \leq 2$.

x	-4	-3	-2	-1	0	1	2
y							

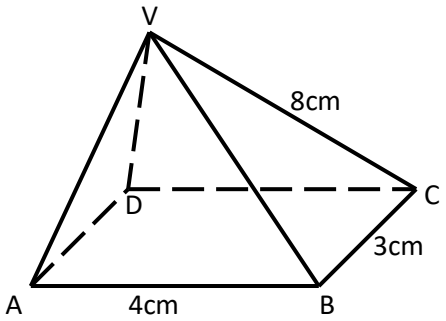
Hence use trapezium rule with six strips to find the area of the region bounded by the curve and the x- axis. **(3marks)**

4. Make p the subject of the formula **(3 marks)**

$$e = \sqrt{\frac{p - 3u}{y - 3xp}}$$

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5. The figure below shows a rectangular based right pyramid. Find the angle between the planes ABCD and ABV. **(3marks)**



6. An object A of area $10cm^2$ is mapped onto its image B of area $60cm^2$ by a transformation whose matrix is given by P= $\begin{Bmatrix} x & 4 \\ 3 & x+3 \end{Bmatrix}$. Find the possible values of *x*. **(3 marks)**

7. Find the value of x in the equation

$\log_{10} 5 - 2 + \log_{10}(2x+10) = \log_{10}(x-4)$ **(3marks)**

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8. The data below shows marks obtained by 10 students in a test.

71, 55, 69, 45, 65, 57, 71, 82, 55, 50. Calculate the standard deviation using an assumed mean of 60. **(3marks)**

9. Evaluate by rationalizing the denominator and leaving your answer in surd form. **(3marks)**

$$\frac{\sqrt{8}}{1+Cos45^0}$$

10. The position vectors fof points A and B are $5i+4j-6k$ and $2i-2j$ respectively. A point X divides AB in the ratio -3: 5. Find the coordinates of X. **(3marks)**

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11. A closed box has a square base of side x metres and its height h metres. The total surface area of the box is $24m^2$.

(a) Find the expression of h in terms of x.

(b) Hence find the value of x that would make the volume of the box maximum. **(4 marks)**

12. M varies directly as D and as the cube of V. Calculate the percentage change in M when V is increased by 10% and D is reduced by 10%. **(3marks)**

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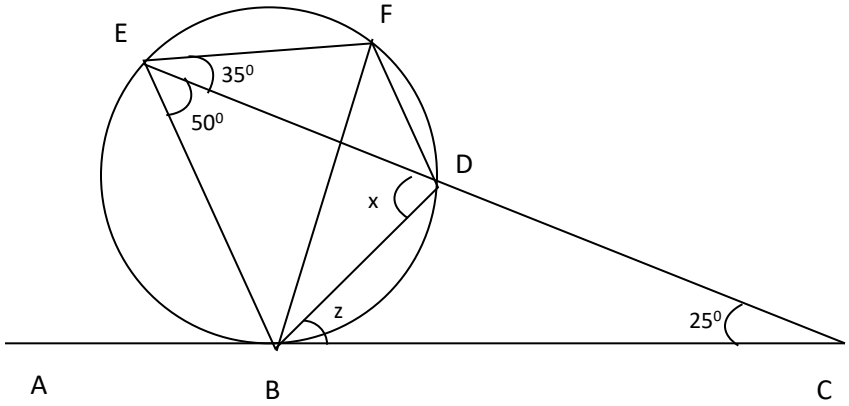
13. Find the value of t if the gradient of the graphs of the functions $y = x^2 - x^3$ and $y = x - tx^2$ are equal at $x = \frac{1}{3}$. **(3marks)**

14. The image of a point A, under the transformation represented by the matrix $T = \begin{pmatrix} 1 & -1 \\ 0 & 2 \end{pmatrix}$ is A' (-2, 4)Find the coordinates of A **(3marks)**

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15. In the figure below, ABC is a tangent at B and CDE is a straight line.

$\angle BED = 50^0, \angle DEF = 35^0$ and $\angle ECB = 25^0$



Calculate the values of x and z. **(2marks)**

16. The equation of a circle is given by $4x^2 + 4y^2 - 8x + 2y - 7 = 0$

Determine the coordinates of the centre of the circle. **(3marks)**

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SECTION II (50 MARKS)

*Answer **only five** questions from this section*

17. (a) Using a ruler and a pair of compasses only construct triangle ABC in whichAB = 6cm, BC = 5.5cm and angle ABC = 60^0. Measure AC. **(3marks)**

(b) On the same side of AB as C, determine the locus of a point P such that angle APB = 60^0 **(2marks)**

(c) Construct the locus of R such that AR = 3cm **(1mark)**

(d) Identify the region T such that AR≥ 3cm and angleAPB≥ $60^0$by shading the unwanted part. **(2marks)**

(e) Determine point Q such that area of AQB is half the area of ABC and that Angle AQB = 60^0. (2marks)

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18. A sequence is formed by adding corresponding terms of an AP and GP. The first, second and third terms of the sequence formed are 14, 34 and 78 respectively.

(a) Given that the common ratio of the GP is 3;

(i) Find the first term of the AP and GP and the common difference of the AP. **(2marks)**

(ii) Find the sixth term and the sum of the first six terms of the sequence. **(3marks)**

(b) The second and third terms of a geometric progression are 24 and 12(x + 1) respectively. Find the whole number value of x and hence the first term given the sum of the first three terms of the progression is 76. **(5marks)**

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19. Income tax rate are as shown below.

Income (k£ p.a)	**Rate (Ksh per £)**
1- 4200	2
4201 - 8000	3
8001 - 12600	5
12601 – 16800	6
16801 and above	7

Omari pays Sh. 4000 as P.A.Y.E per month. He has a monthly house allowance of Ksh. 10800 and is entitled to a personal relief of Ksh. 1,100 per month. Determine;

(i) his gross tax p.a in Ksh **(2marks)**

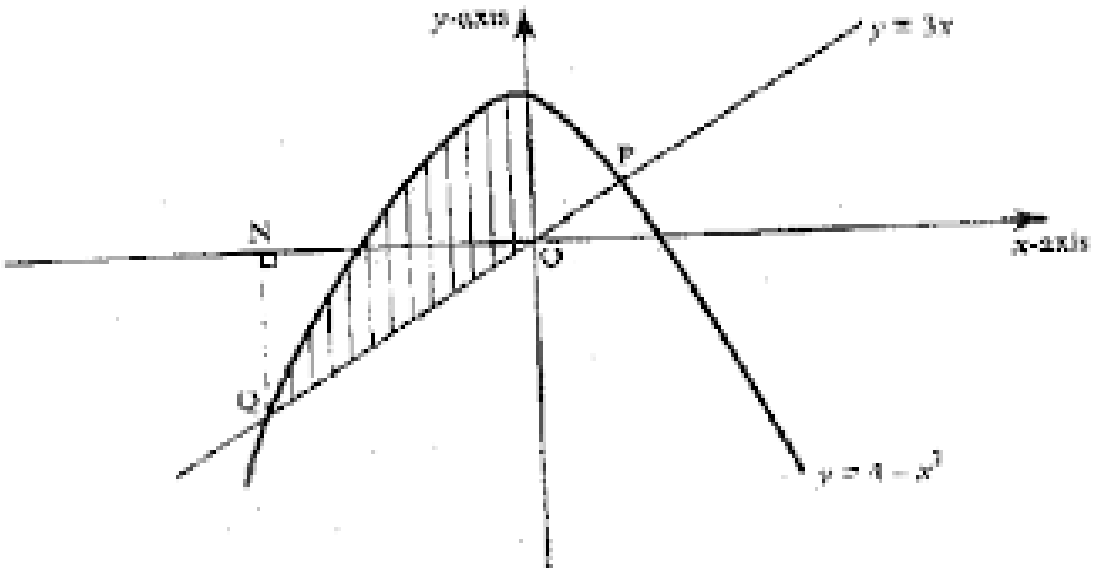
(ii) his taxable income in k£ p.a **(4marks)**

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(iii) his basic salary in Ksh. p.m **(2marks)**

(iv) his net salary per month **(2marks)**

20. The diagram below shows a sketch of the line y = 3x and the curve $y = 4 - x^2$ intersecting at point P and Q.



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(a) Find the co-ordinates of P and Q **(4marks)**

(b) Given that QN is perpendicular to the x-axis at N, calculate

(i) the area bounded by the curve $y = 4 - x^2$, the x-axis and line QN. **(2marks)**

(ii) the area of the shaded region that lies below the x - axis **(2marks)**

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(iii)the area of the region enclosed by the curve $y = 4 - x^2$, the line y = 3x and the y-axis **(2marks)**

21. The positions of two towns A and B are (50^0N, 45^0W) and (50^0N, K^0W) respectively. It takes a plane 5 hours to travel from A to B at an average speed of 800knots. The same plane takes $1\frac{1}{2}$ hours to travel from B to another town C at the same average speed. Given that C is to the north of B, calculate to the nearest degree,

(a) The value of K **(4marks)**

(b) The latitude of C **(3marks)**

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(c) If the plane started from A at 9.00am and flew to C through B, find the local time at C when the plane arrived there. **(3marks)**

22. (a) Complete the table below for the equation $y = x^3 + 2x^2$ to 2 d.p **(2marks)**

X	-3	-2.5	-2	-1.5	-1	-0.5	0	0.5	1	1.5
$2x^2$	18	12.5	8	4.5	2		0		1	4.5
X^3	-27		-8		-1		0		1	
y	-9		0		1		0		2	

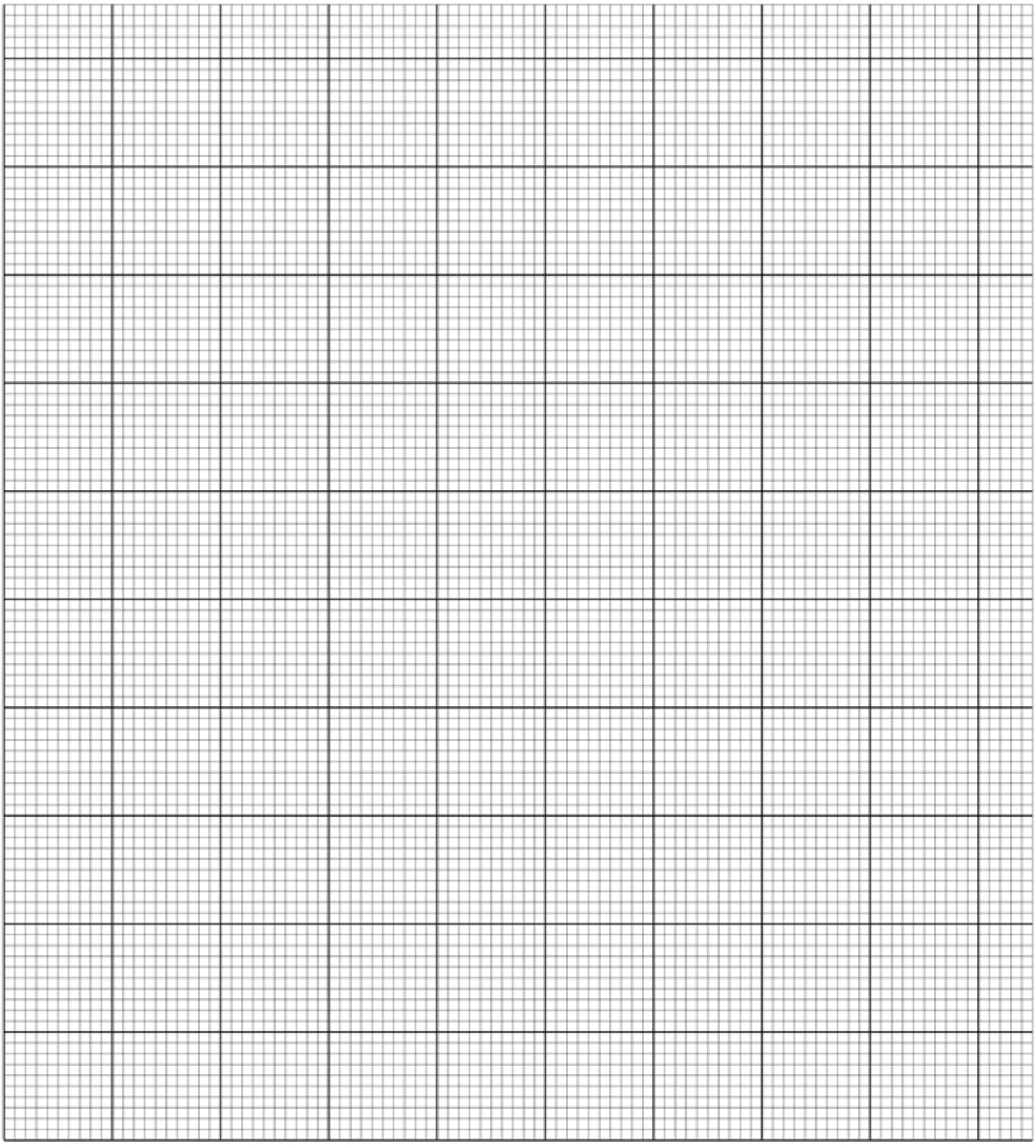
(b) On the grid provided, draw the graph of $y = x^3 + 2x^2$ for $-3 \leq x \leq 1.5$. Take a scale of 2cm to represent 1 unit on the x- axis and 1cm to represent 1unit on the y – axis. **(3marks)**

(c) Use your graph to solve

(i) $x^3 + 2x^2 = 0$ **(2marks)**

(ii) $x^3 + 2x^2 - x - 2 = 0$ **(3marks)**

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23. The table below shows the marks obtained by 47 students in a mathematics test.

Marks	31 – 35	36 – 40	41 – 45	46 – 50	51 – 55	56 - 60
No. of candidates	4	6	12	15	8	2

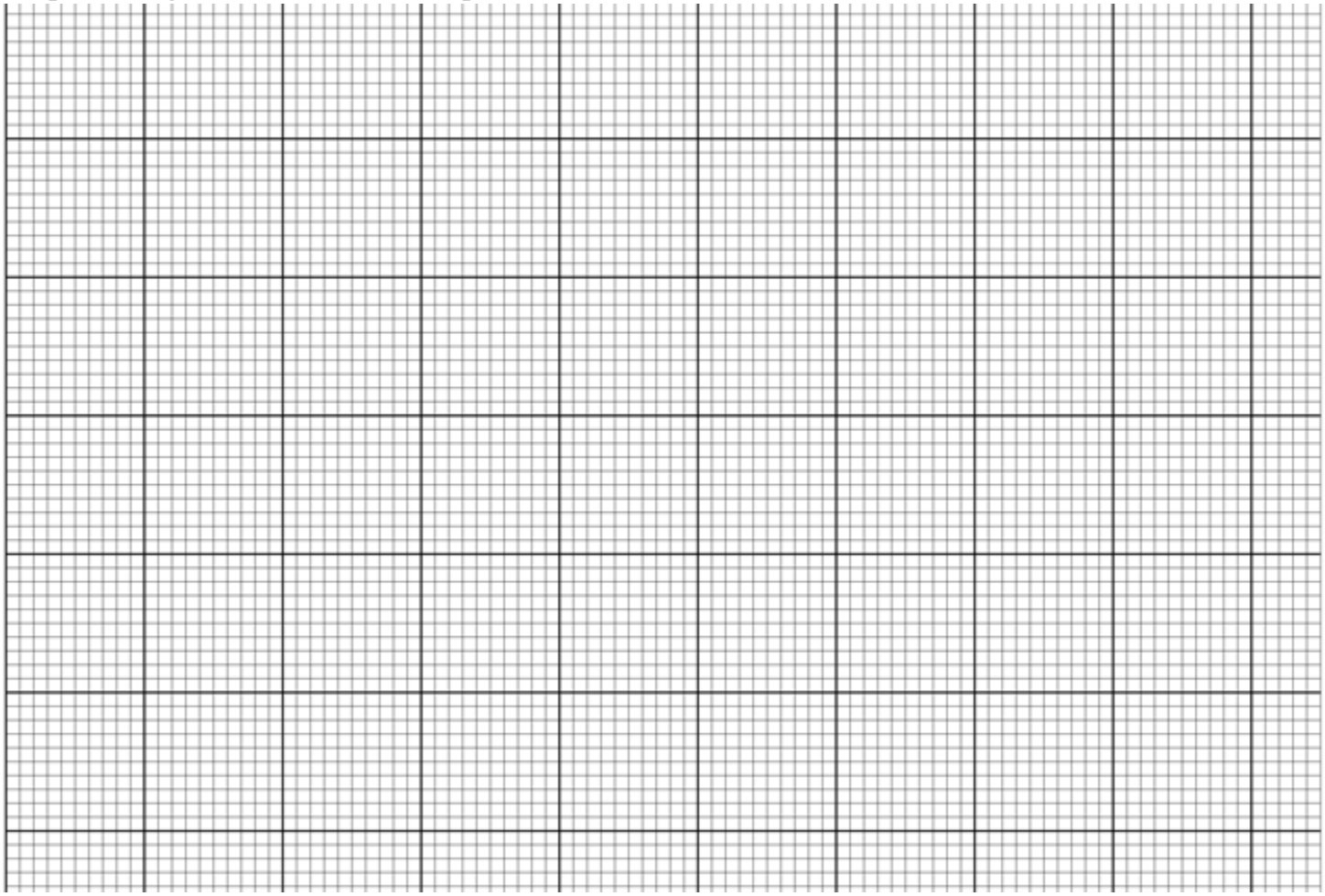
(a) On the grid provided, draw a cumulative frequency curve. **(3marks)**

(b) Use your graph to estimate

(i) The median **(2marks)**

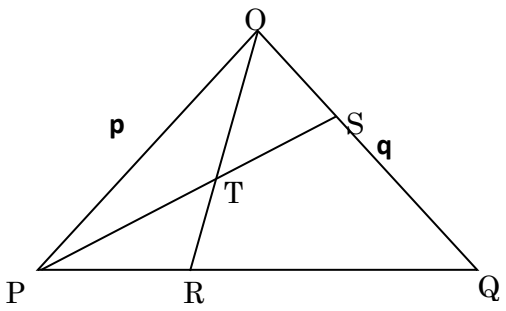
(ii) The semi interquartile range **(2marks)**

(c) In order to pass the test a candidate had to score more than 40 marks. Calculate the percentage of candidates who passed. **(3marks**)



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24. In the triangle OPQ below, **OP** = **p** and **OQ** = **q**. R is a point on PQ such that PR: RQ = 1 : 3 and 5OS = 2 OQ. PS intersects OR at T.



(a) Express in term of **p** and **q**

(i) **OS** **(1mark)**

(ii) **PQ** **(1mark)**

(iii) **OR** **(2mark)**

(b)Given that **OT**= h**OR** and **PT** = k**PS**. Determine the values of h and k. **(6marks)**

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ADM NO: …….. SIGN: ……. DATE: ……...……

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PHYSICS

PAPER 1

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- This paper consists of two sections A and B
- Answer ***ALL*** the questions in sections A and B in the spaces provided.
- All workings must be clearly shown. Mathematical tables and silent electronic calculators may be used

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SECTION	Questions	Maximum Score	Candidate's Score
A	1-13	25	
B	14	11	
	15	15	
	16	14	
	17	15	
	TOTAL SCORES	80	

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SECTION A (25 MARKS)

Answer ALL the questions in this section in the spaces provided

1. (a) Draw a diagram to represent a scale of a micrometer screw gauge of thimble scale 50 divisions and reading 3.68mm **(2mks)**

(b) Determine the actual reading if the micrometer screw gauge above has a zero error of 0.03mm. **(1mk)**

2. **Figure 1** shows a bimetallic strip made of brass and iron. A marble is placed at end **A** of the bimetallic strip as shown below:-

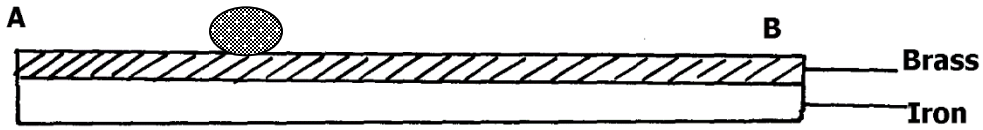


Fig.1

State and explain what will be observed when the bimetallic strip is strongly cooled **(2mks)**

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3. State why braking systems use liquid and not gases. **(lmk)**

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4. **Figure 2** shows the level of mercury and water in a beaker.

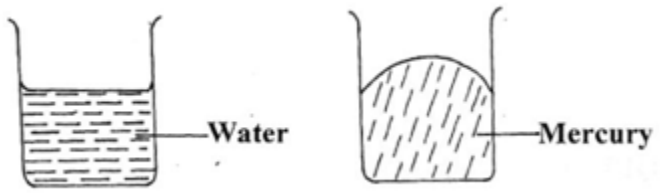


Fig. 2

Explain the difference in the shape of the meniscus **(1mk)**

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5. Mercury –in-glass barometer shows a height of 70 cm. What height would be shown in the barometer at the same place if water density **$1.0 \times 10^3 kg/m^3$** is used.
(**Density of mercury = $13600 kgm^{-3}$**) **(2mks)**

6. Sea water of density **$1.04\ g/cm^3$** is being pumped into a tank through a pipe of uniform cross-sectional area of $3.142cm^2$. If the speed of water in the pipe is 5 m/s, determine the volume flux in S.I units **(2mks)**

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7. **Figure 3** shows a uniform rod AB which is 40cm long. It has a mass of 2kg and pivoted at C. If 2N is acting at point B, and 30N force is passed through a frictionless pulley.

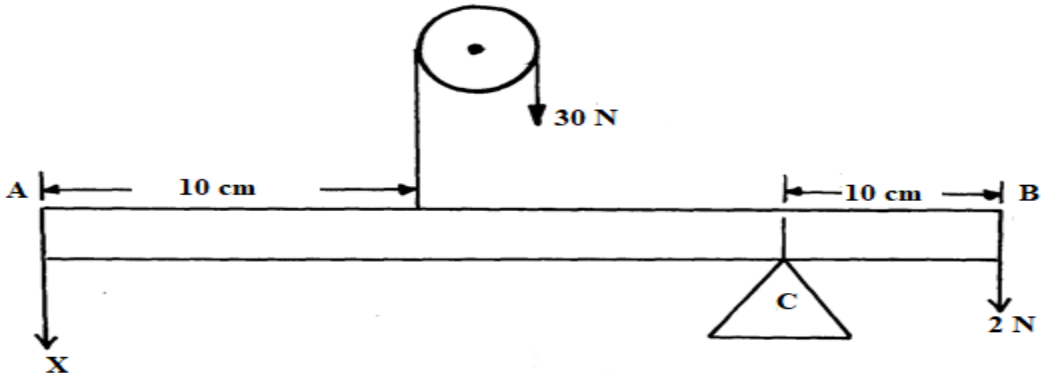
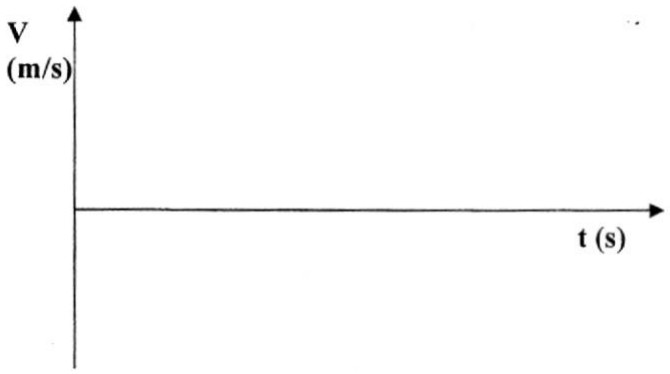


Fig. 3

Find the force (x) acting at end A **(3mks)**

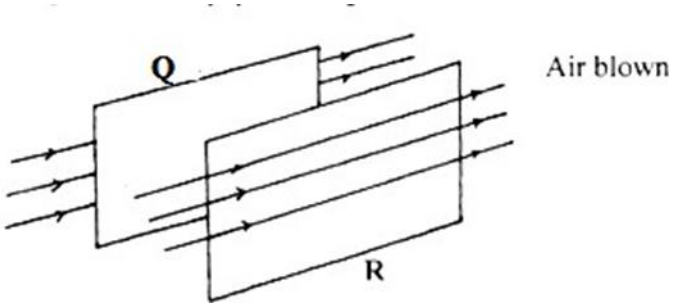
8. Sketch on the axis provided below a velocity - time graph of a motion of a stone thrown vertically upward from the edge of a platform and eventually the stone lands without bouncing on the ground below the platform. **(1mk)**



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9. **Figure 4** shows two light sheets of paper arranged as shown.

Fig 4



State what is observed if strong air is blown at the same time behind paper Q and in front of paper R as shown **(1mk)**

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10. A glass stopper is weighed in air then immersed wholly in water and reweighed. The readings obtained are 2.5N in air and 2.0N in water. Given that the density of water is 1000kg/m, calculate the density of the stopper. **(3mks)**

11. State two physical quantities that remain constant while pure ice is being converted to water. **(2mks)**

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12. State the reason why thermal conductivity of a metal increases with the increase in the cross-section area of the conductor? **(1mk)**

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13. State any two characteristics of an ideal gas. **(2mks)**

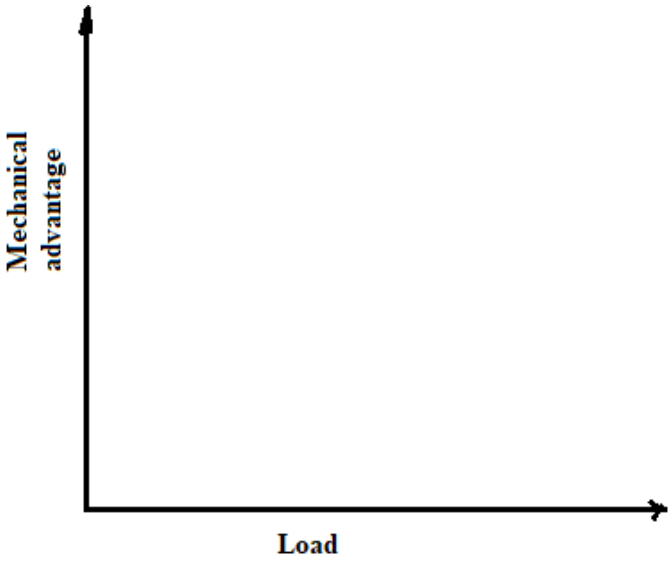
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14. On the grid provided, sketch a graph of mechanical advantage against load for a pulley system used to lift a load. **(1mk)**



SECTION B (55 MARKS)

Answer all the questions in this section.

15. (a)Explain why a gas exerts increased pressure when it is compressed into a small space. (2mk)

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(b) State the law that relates the volume of a gas to the temperature of the gas. **(lmk)**

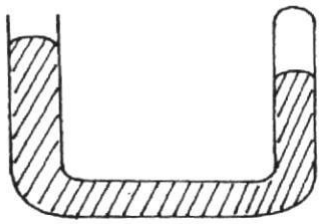
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(c) A balloon is filled with air to a volume of 200 cm^3 at a temperature of 293K. Determine volume when the temperature rises to 353K at the same pressure. **(3mks)**

(d) To verify Boyle's law a set-up consisting of a U-tube was made as shown in the figure 8 below. The tube contains mercury with air in the sealed end.



(i) Explain what is observed when more mercury is added. **(2mks)**

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(ii) Suggest a method used to maintain the temperature of air constant in the experiment. **(lmk)**

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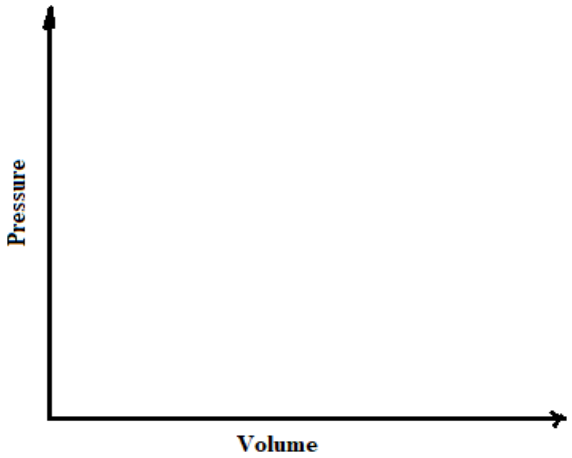
e) (i) Explain why Boyle's law would not hold for gases such as methane. **(lmk)**

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(ii) Sketch the graph of pressure against volume for an ideal gas. **(1mk)**



16. a) A lead shot of mass 40 g is tied to a string of length 70cm. It is swung vertically at 5 revolutions per second. Determine;

(i) Periodic time, **(2mks)**

(ii) Angular velocity **(2mks)**

(iii) Linear velocity **(2mks)**

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(iv) Maximum tension in the string. **(2mks)**

(b) The graph **figure 5** shows displacement –time graph of **an object** in motion.



Fig. 5

(i) Determine the instanteous velocities at **t = 1second** and at **t = 4 seconds** **(4mks)**

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(ii) Use the results in **(b)(i)** above to determine the acceleration of the body **(3mks)**

17. a) State the Archimedes's principle. **(1mk)**

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(b) You are provided with the following apparatus;

- A spring balance
- A small piece of metal
- Eureka can
- A beam balance
- A string
- A beaker
- A retort stand
- Some water.

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With the aid of a well labeled diagram, describe an experiment you would perform in the laboratory using the above apparatus to verify Archimedes's principle for a totally immersed body. **(7mks)**

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(c) A simple hydrometer has a cylindrical cross-sectional area of 2.0 cm^2 and a mass of 15 g. What length of the hydrometer is immersed when it floats on water of density 1.0 g/cm^3? **(3mks)**

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(d) **Figure 6** shows a balloon which is filled with hot air to a volume of 200 m^3. The weight of the balloon and its contents is 2200N.

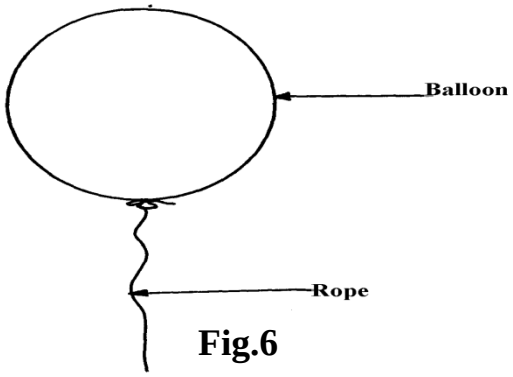


Fig.6

(i) Determine the upthrust on the balloon (density of air 0.0012g/cm^3) **(3mks)**

18. (a) State two ways in which freezing point of ice can be lowered. **(2mks)**

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(b) **Figure 6** illustrates an experiment in which electrical energy is used to determine specific latent heat of fusion.

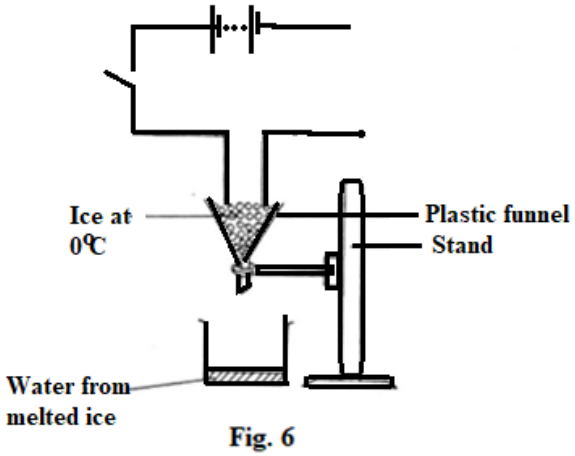


Fig. 6

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(i) Complete the circuit to show connection of the essential circuit components. **(2mks)**

(ii) Describe how the experiment can be used to determine the latent heat of' fusion of ice. **(3mks)**

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(c) A block of metal of mass 150g at 100°C is dropped into a logged calorimeter of heat capacity $40Jk^{-1}$ containing 100g of water at 25°C. The temperature of the resulting mixture is 34°C. (Specific heat capacity of water = 4200J/KgK)

Determine;-

(i) Heat gained by calorimeter **(2mks)**

(ii) Heat gained by water **(2mks)**

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(iii) Heat lost by the metal block **(2mks)**

(iv) Specific heat capacity of the metal block **(2mks)**

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ADM NO: …….. SIGN: ……. DATE: ……...……

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PHYSICS

PHYSICS PAPER 2

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- This paper consists of two sections A and B
- Answer ***ALL*** the questions in sections A and B in the spaces provided.
- All workings must be clearly shown. Mathematical tables and silent electronic calculators may be used.

Take h= 6.63 x 10^{-34} Js

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SECTION	Questions	Maximum Score	Candidate's Score
A	1-11	25	
B	12	09	
	13	05	
	14	15	
	15	14	
	16	12	
	TOTAL SCORES	80	

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SECTION A: 25 MARKS

Answer all questions in this section

1. **Figure 1** shows two mirrors inclined at an angle of 30° to each other. A ray of light is incident on one mirror as shown

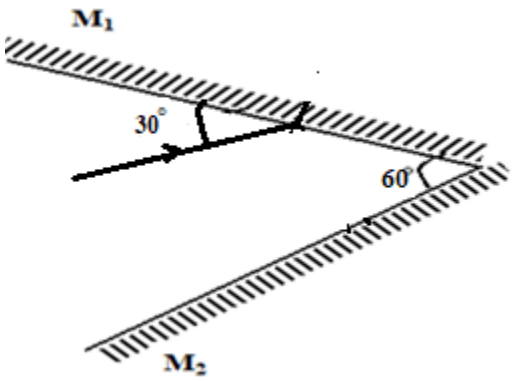


Fig. 1

Sketch the path of the ray to show its reflection on the two mirrors **(2mks)**

2. **Figure 2** below shows two pith balls A and B hanging from nylon threads and brought close to negatively charged rod. Pith ball A is uncharged while B is charged.

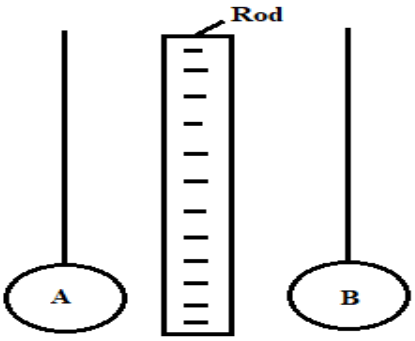


Fig. 2

It is observed that both pith balls A and B are attracted to the charged rod.

i) State the charge on B **(1mk)**

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ii) Explain the reason why pith ball A is attracted **(1mk)**

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iii) Show the charge distribution on the pith balls **(1mk)**

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3. **Figure 3** shows the path of a ray of light CB passing from glass to air.

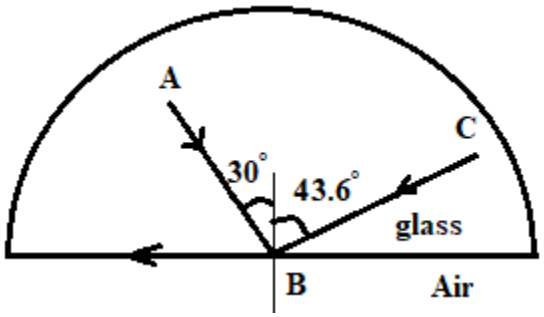


Fig. 3

Complete the diagram to show the path of the ray of light AB after it emerges from the glass showing the angle calculated. **(3mks)**

4. **Figure 4** shows water waves moving towards barrier.



Fig. 4

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i)State the property of wave under investigation. **(1mk)**

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ii) Show the emergence of the reflected wave after passing the opening **(1mk)**

iii) State why passing of light through narrow opening is a very rare phenomenon **(1mk)**

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5. **Figure 5** shows an object in front of a concave mirror and its image.

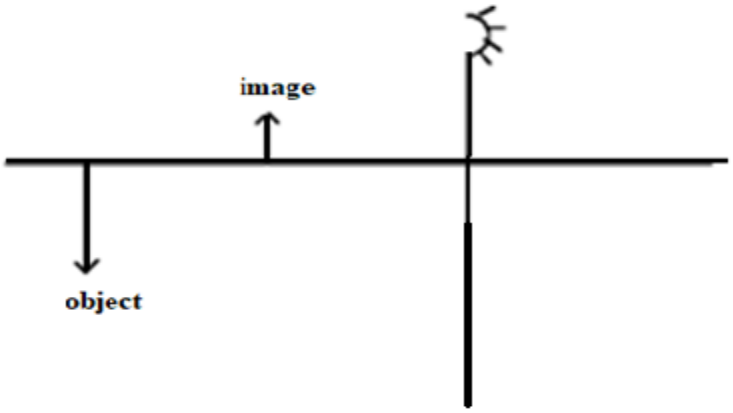


Fig. 5

Locate position of its principal focus and label it as F **(2mks)**

6. **Figure 6** shows a trace obtained from a CRO with the time base switched on.

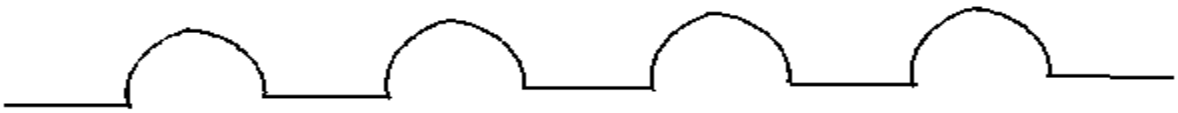


Fig. 6

Draw a circuit diagram that can be used to produce the wave above **(2mks)**

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7. A boy opened up a used-up dry cell and found the following:

i) The zinc casing was 'eaten away'

ii) The cell was watery

Name the cell defect **(1 mk)**

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8. State two uses of microwaves **(2mks)**

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9. **Figure 7** shows a wave profile.

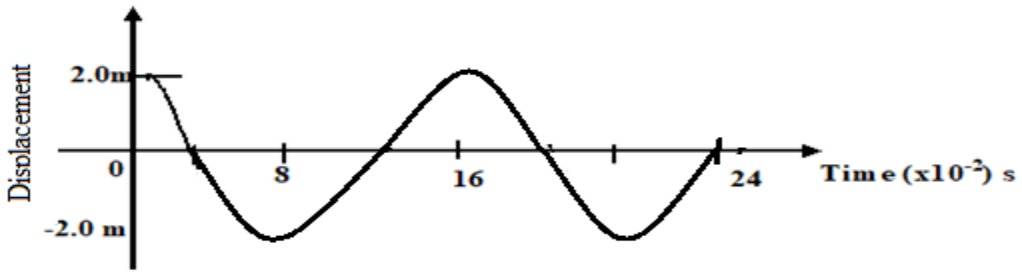


Fig. 7

Determine the frequency of the wave **(3mks)**

10. Below is a nuclear reaction.

$$^{232}_{90}A \xrightarrow{K} {}^{228}_{88}B \xrightarrow{\gamma\text{ - radiation}} {}^{x}_{y}C$$

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i) Identify radiation **K** **(1mk)**

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ii) Determine the value of **X** and **Y** **(1mk)**

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11. **Figure 8** shows a bar of soft iron placed near a magnet.



Fig. 8

On the same diagram, sketch the magnetic field pattern due to the set up **(2mks)**

SECTION B. (55 MARKS)

Answer all questions in this section

12. a) **Figure 9** shows an object, a screen and light sources X, Y and Z.

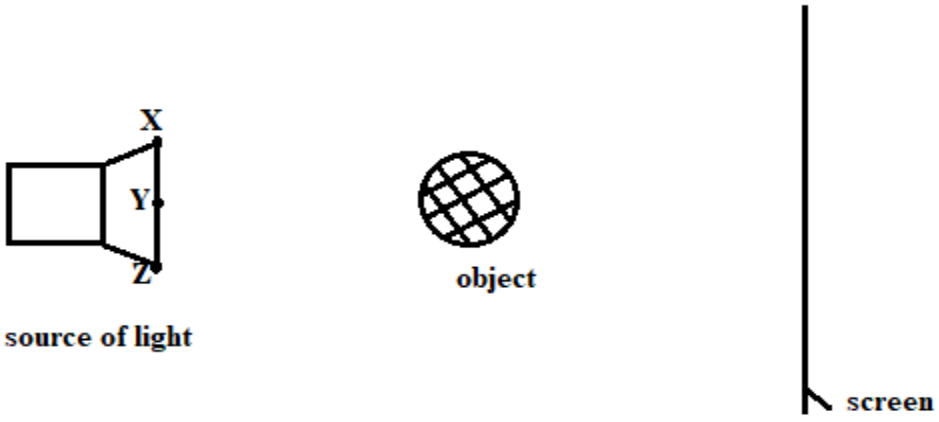


Fig. 9

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i)Complete the diagram to show the formation of a shadow **(2mks)**

ii) State one property of the object that makes it possible for its shadow to be formed **(1mk)**

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iii) Explain why it is impossible to obtain a sharp edged shadow of the object **(1mk)**

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b) (i) The length of a pinhole camera is 20cm. Determine the height of a sloppy building 300m away from a pinhole camera which forms an image 2.5cm high on the screen of the camera. **(3mks)**

(ii) A student decided to use a nail to make the hole of the camera mentioned above. State two possible characteristics of the image formed **(2mks)**

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13. Figure 10 shows an X-ray tube.

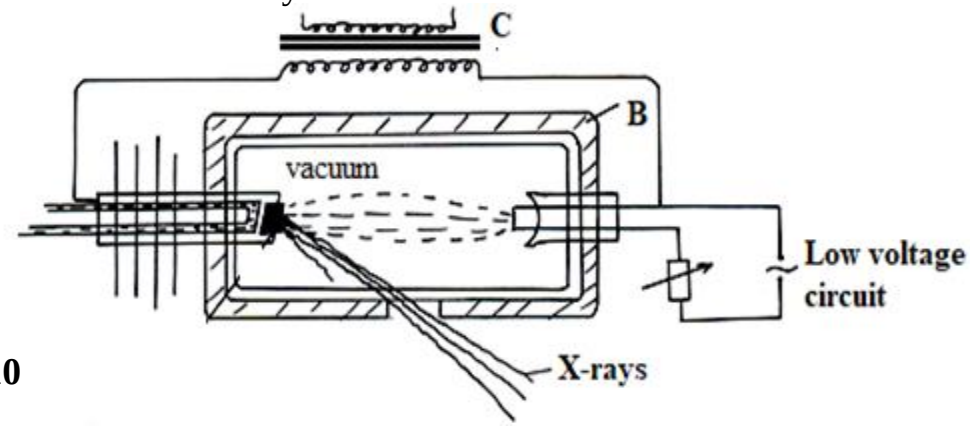


Fig. 10

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i)Explain the use of part labelled B and C **(2mks)**

B:

……..

……..

C:

……..

……..

ii) Explain how the X-rays are produced. **(2mks)**

……..

……

……

……

iii) Why is it necessary to maintain a vacuum inside the tube? **(1mk)**

……..

……

……..

14. a) What is meant by the term electromotive force of a cell? **(1mk)**

……..

……

……..

b) Battery of e.m.f. 12 V supplies a current of 10 A flows through it for 5 minutes. Determine the amount of electrical energy produced. **(2mks)**

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c) **Figure 11** shows a graph of resistance against reciprocal of current. Use it to answer the questions that follow.

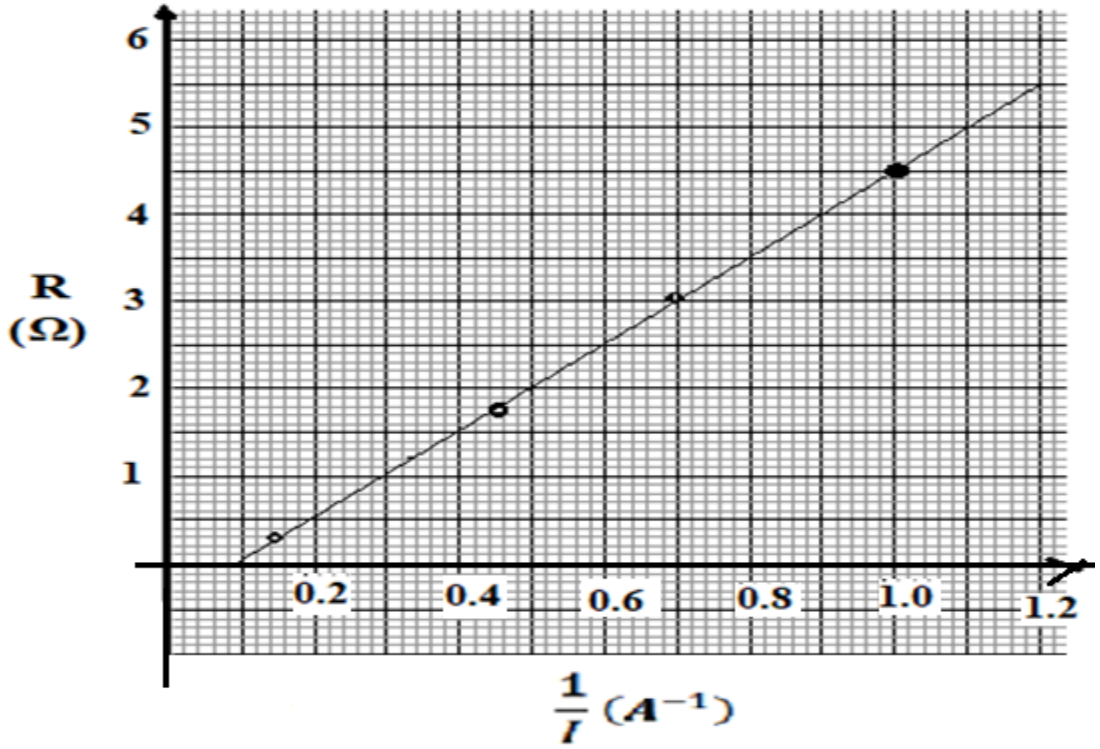


Fig. 11

i) Find the internal resistance, r. **(2mks)**

ii) Determine the e.m.f, E of the cell. **(2mks)**

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iii) Draw a circuit diagram to show the set-up used to generate the above graph **(2mks)**

d) i) Draw a circuit diagram to show how a 12V battery may be used to operate efficiently 3 headlamp bulbs each marked 6V, 24W. **(2mks)**

ii) Calculate the current supplied by the battery in (d) above. **(2mks)**

iii) Calculate the total effective resistance of the bulbs in (i) above. **(2mks)**

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15. a) State what is meant by the term electromagnetic induction. **(1mk)**

……

……

……

(b) **Figure 12** shows a simple electric generator

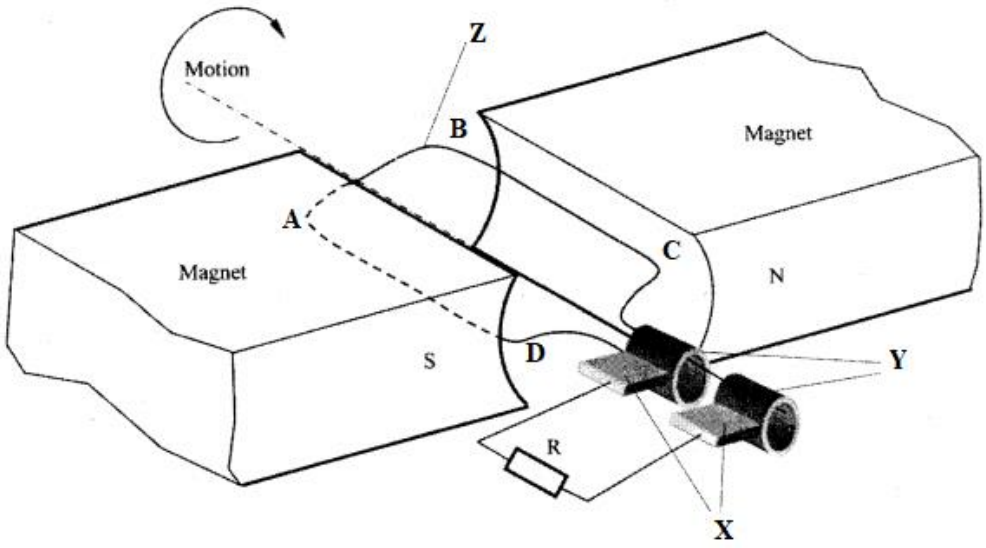


Fig. 12

i)Name the parts labelled **X, Y and Z.** **(3mks)**

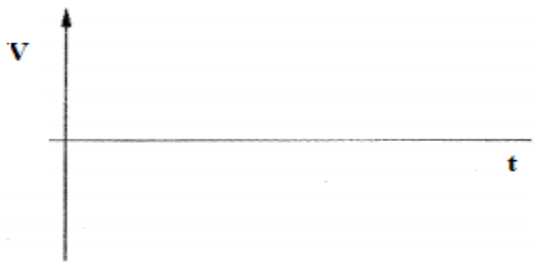
X: ……

Y: ……

Z: ……

ii) Show the direction of induced current along **BC** **(1mk)**

iii) Sketch on the axes provided, a graph to show how the magnitude of the potential difference across R, changes with the time t for one rotation of the coil when it starts from horizontal position **(1mk)**



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iv) State the effect of using a magnet with curved poles as shown in the diagram **(2mks)**

……..

……

……..

……..

(c) In a transformer, the ratio of primary turns to the secondary turns is 2:20. A current of 500 mA flows through a 400 ohms resistor in the secondary circuit. Assuming that the transformer is 100% efficient, determine:

i) the secondary voltage **(2mks)**

ii) the primary voltage **(2mk)**

iii) the primary current. **(2mks)**

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16. I. **Figure 13** shows a graph of photoelectric current against frequency. Use it to answer questions that follow.

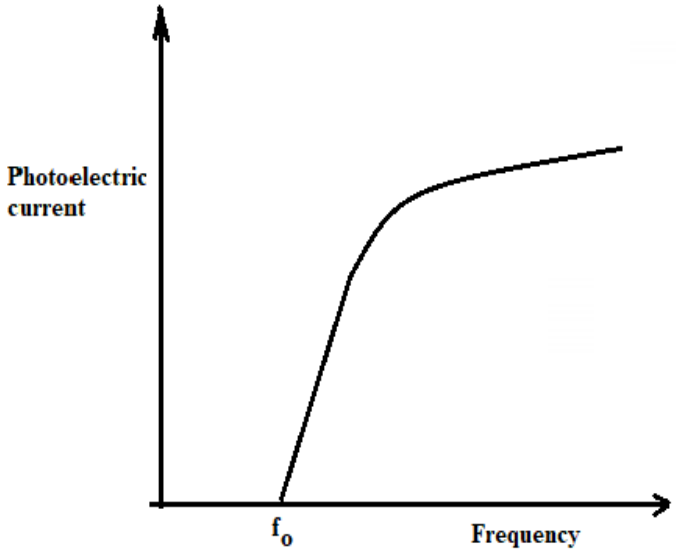


Fig. 13

a) What does the term **fo** stand for in the graph above? **(2mks)**

……..

……..

b) Explain what the graph shows in terms of photoelectric emission. **(2mks)**

……..

……

……

……

……

II. The work function of a metal is 6.4×10^{-19} J.

a) Explain what is meant by the term work function (1mk)

……..

……

……

……

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b) Light with a frequency of 1.2×10^{15} Hz is shone onto the metal surface. Find out whether or not the photons of this light will cause the photoelectric effect to take place. **(3mks)**

c) The light source is now replaced with a light source which produces light with a frequency of 1.5×10^{15} Hz. The photons from this source contain more energy than is required to release electrons.

i) Determine the extra energy available after the electron has been released. **(3mks)**

ii) What is the extra energy calculated above converted to? **(1mk)**

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TOP K.C.S.E PREDICTION SERIES 3 2022 DECEMBER

NAME: ……...

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ADM NO: …….. SIGN: ……. DATE: ……..

232/3
PHYSICS
(PRACTICAL)
PAPER 3
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

a) Write your name, admission number and date in the spaces provided above,

*b) Answer **ALL** the questions in the spaces provided in the question paper.*

*c) 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.*

d) This paper consists of 9 printed pages. Check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

FOR EXAMINER'S USE ONLY

Question 1	d	e	f	g	i	j	k	TOTAL
Maximum score	5	5	3	2	3	1	1	
Candidate's score								

Question 2	a	d	e	f	g	h(i)	h(ii)	h(iii)
Maximum score	1	4	5	3	3	1	1	2
Candidate's score								

TOTAL

GRAND

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QUESTION ONE

This question consists of two parts A and B; attempt both parts.

PART A

You are provided with the following:

- Two metre-rules.
- A stopwatch.
- A half metre rule.
- Two retort stands, two bosses and two clamps.
- Some sewing thread.
- A pendulum ball.

Proceed as follows:

(a) Clamp one metre rule horizontally on the two stands so that it is on a vertical plane. Suspend the second metre rule so that it balances on one point as shown in figure 1 below. Note the balance point as the centre of gravity of the metre rule. Let this be point A.

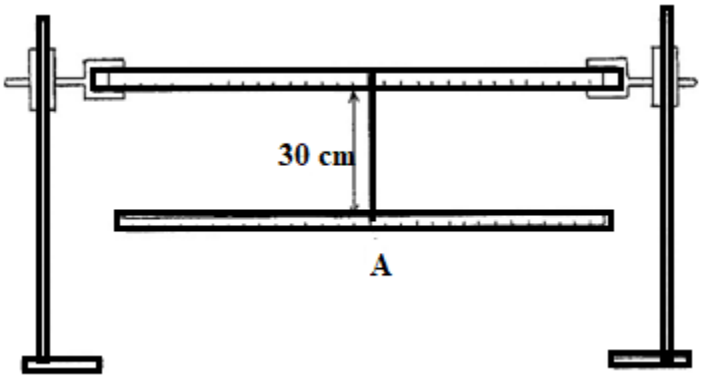


Fig.1

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(b) Set the length of the string on which the metre rule is suspended to be 30cm. Tie a second support to the metre rule a distance D from the string. Let the point of support be point B

(c) Suspend the pendulum ball with a string a distance L from B and set the length of the string to 20cm. See **figure 2** below.

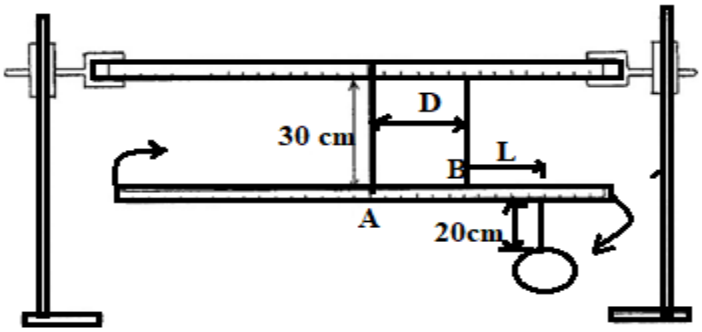


Fig.2

Starting with a distance D = 15cm, and distance L = 25 cm. displace the hanging metre rule on a horizontal plane and record the time taken for it to make 20 complete oscillations on table 1.

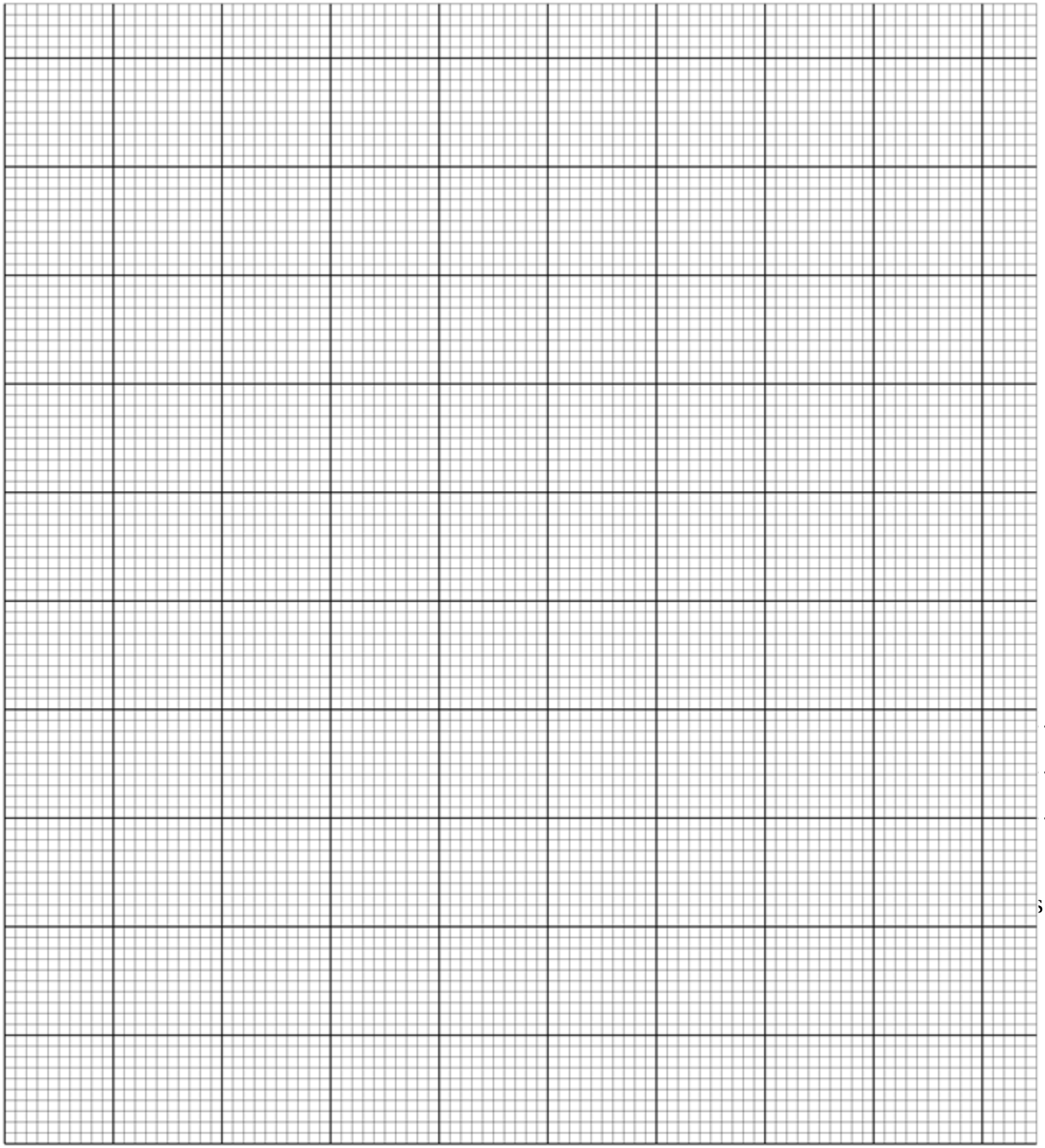
(d) Repeat part (c) above for other values of D and complete the **table 1** below. **(5mks)**

Table 1

D (cm)	**Time for 20 oscillations (s)**	**Periodic time (T) (s)**	**T^2 (s^2)**
15			
20			
25			
30			
35			
40			

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e) On the grid provided, plot a graph of D (cm) against T^2 (S^2). **(5mks)**



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You are provided with the following:

- A metre rule (use one used in part A).
- A piece of knitting thread.
- A rectangular stiff paper labelled M.
- One l00g mass.
- A funnel.
- A pendulum ball (use one used in Part A).
- A stopwatch (use one used in Part A).

Proceed as follows:

(h) Tie the pendulum ball tightly with the knitting thread and after passing the other end of the thread through the funnel and the marker (marked M) as shown in figure 3 below, tie it to a l00g mass. Push the marker to be about 1cm from the funnel after adjusting the length of the thread from the funnel to the pendulum ball to be 30cm.

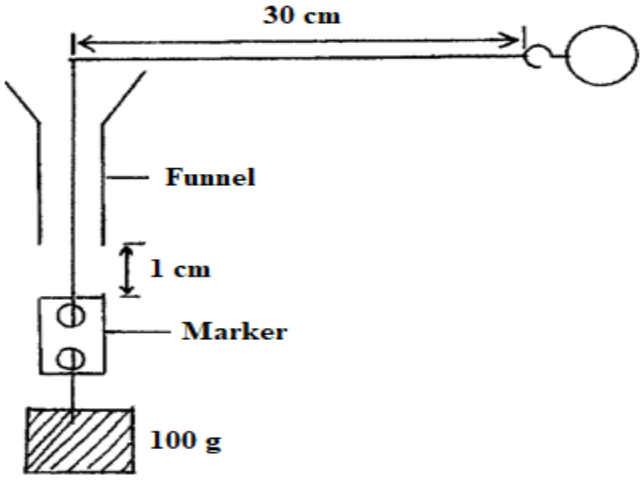


Fig. 3

i) Hold the funnel vertically. Swing the pendulum ball around so that it moves in a constant horizontal circle with a uniform circular motion. The marker should be just below the funnel but not touching it. Measure the time taken by the Pendulum ball to make 10 complete revolutions and repeat this 3 times and complete the table below. **(3mks)**

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Table 2

Trial	Time for 10 revolutions (S)	Periodic time T (S)
1.		
2.		
3.		

j) Find average T.

T= _____ **(1mk)**

k) Given that W = $2\pi/T$ where W is the angular velocity of the pendulum ball, determine W. **(1mk)**

2.**PART A**

You are provided with the following apparatus

- A metre rule
- A log of plasticine
- Bi convex lens
- A candle
- A lens holder
- Across wire mounted on a cardboard
- A white screen

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(a) Determine the average focal length, f of the lens using a distanceobject.

f=… ..... (1mk)

b) Set up the apparatus as shown.

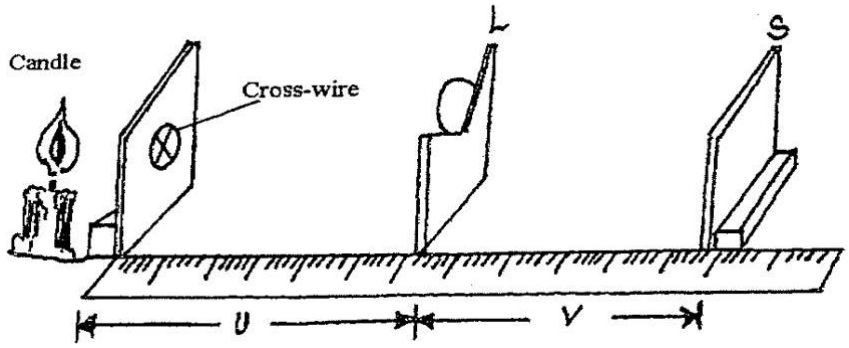


Fig. 4

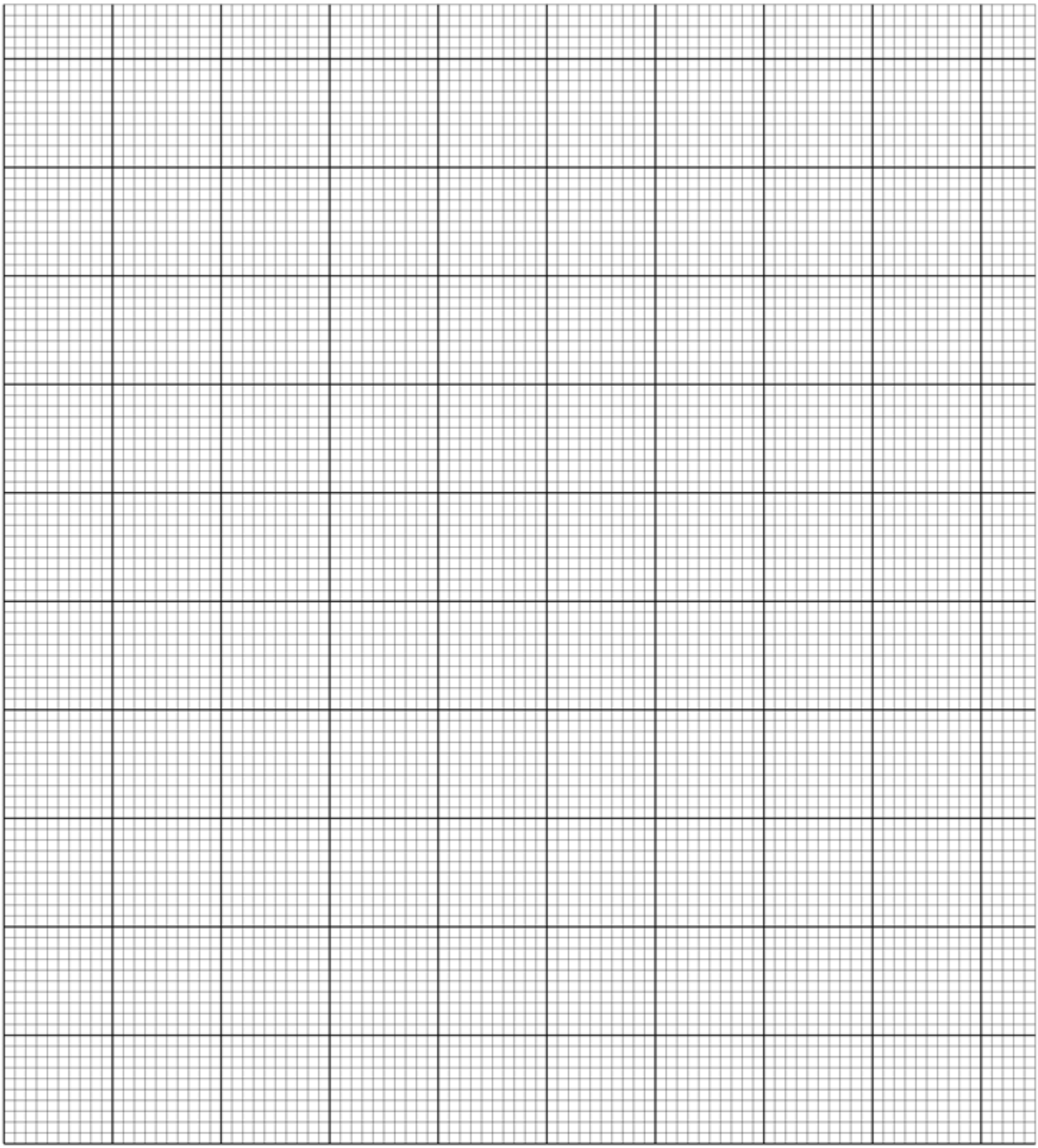
(c) Starting with u=30cm, vary the position of the screen S until a sharp image of the cross wire is observed on the screen. Measure and record the value of the image distance v.

(d) Repeat the experiment above for other values of u35cm, 40cm, 50cm, and 55cm and fill the table below **(4mks)**

U (cm)	**30**	**35**	**40**	**45**	**50**	**55**
V(cm)						
$m = v/u$						

e) Plot a graph of M against v. **(4mks)**

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f) Determine the slope of the graph. **(3mks)**

g) The equation of the graph is given by $m = \frac{v}{f} - 1$. Use the graph to obtain the value of f. **(3mk)**

PART B

You are provided with the following apparatus.

-2 new dry cells size D

-A cell holder.

- One 100cm resistance wire mounted on millimeter scale.
- 1 switch

-1 Voltmeter 0 - 3V.

- 1 Ammeter 0— 1A,
- 8 connecting wires (4 with at least 1 crocodile clip).
- Resistor wire mounted on cardboard.

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(h) Connect the circuit as shown below in **figure 5**

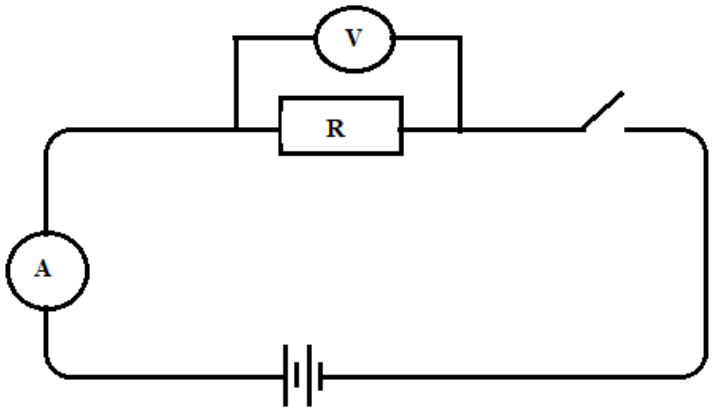


Fig 5

Record the reading of

(i) Ammeter, I=…….. **(1mk)**

(ii) Voltmeter, V=……..V **(1mk)**

(iii) Given that $K = V/I$, find K **(3mks)**

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