EXCELLING STUDENTS K.C.S.E 2023 PREDICTION SERIES 1 EXAMS *(ALL SUBJECTS TESTED)*



EXCELLING STUDENTS K.C.S.E 2023 PREDICTION SERIES 1

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ORDER OF THE 14 SUBJECTS TESTED *(ALPHABETICALLY ARRANGED)*

1. **AGRICULTURE**
2. **BIOLOGY**
3. **BUSINESS STUDIES**
4. **CHEMISTRY**
5. **COMPUTER**
6. **C.R.E**
7. **ENGLISH**
8. **GEOGRAPHY**
9. **HISTORY**
10. **KISWAHILI**
11. **MATHS**
12. **PHYSCIS**

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NAME: ……..……

SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

443/1
AGRICULTURE
PAPER 1
FORM FOUR
2 HOURS

Instructions to candidates.

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

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

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

d) Answer all the questions in section **A** and **B**.

e) Answer **any two** questions in section **C**.

f) All answers should be written in the spaces 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 all the questions in English.

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Section	Question	Maximum Score	Candidate's Score
A	1 - 19	30	
B	20 – 23	20	
C	24 - 26	40	
	Total Score		

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SECTION A (30 MARKS)

1) State **two** causes of forking in carrots **(1mk)**

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2) Name **four** books of account kept by a farmer **(2mks)**

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3) Give the element whose deficiency in plants is characterized by the following

(a) Interveinal chlorosis of the leaves **(½mk)**

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(b) Blossom end rot in tomatoes ..... ($^1/_2$mk)

(c) Scorched edges of a leaf ..... **(½mk)**

4) Give **four** advantages of using grafting as a method of improving avocado fruits. **(2mks)**

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5 Give **four** reasons for using certified seeds for planting. **(2mks)**

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6) List **three** methods used to control weeds in pastures. **(1½mks)**

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7) State **two** reasons for conserving forage crops. **(1mk)**

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8) State **four** effects of high level of education and technology on agriculture **(2mks)**

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9) State **four** features that characterize subsistence farming **(2mks)**

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10) Name **three** aspects of light that affect agricultural production **($1^1/_2$mks)**

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11. Give **four** farming practices in agriculture that destroy soil structure **(2mks)**

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12. State **four** characteristics of clay soil **(2mks)**

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13. Give **three** reasons for erecting a shade over a nursery bed **($1\frac{1}{2}$mks)**

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14. State **three** characteristics of good root stock **($1\frac{1}{2}$mks)**

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15. Name **three** tertiary operations in land preparations **($1\frac{1}{2}$mks)**

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16. State **four** reasons for sub-soiling. **(2mks)**

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17. Give **four** importance of seed selection **(2mks)**

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18. Outline **four** factors that determine the time of planting **(2mks)**

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19. State **four** ways in which land reform can be implemented in Kenya **(2mks)**

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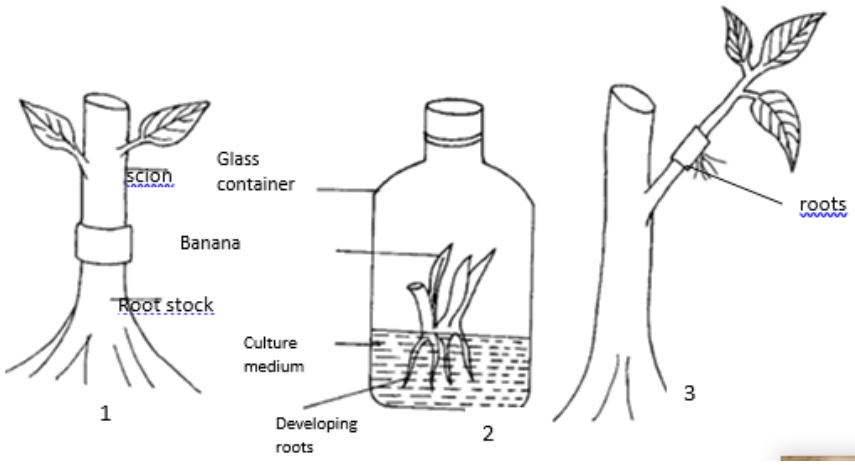
SECTION B (20 MARKS)

20. Study the methods of crop propagation illustrated below and answer the questions that follow



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a) Identify the methods of crop propagation illustrated above

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

2. ..... **(1mk)**

3. ..... **(1mk)**

b) Give one condition under which method (1) above is carried out. **(1mk)**

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c) State **two** disadvantages of using stem cuttings for planting. **(1mk)**

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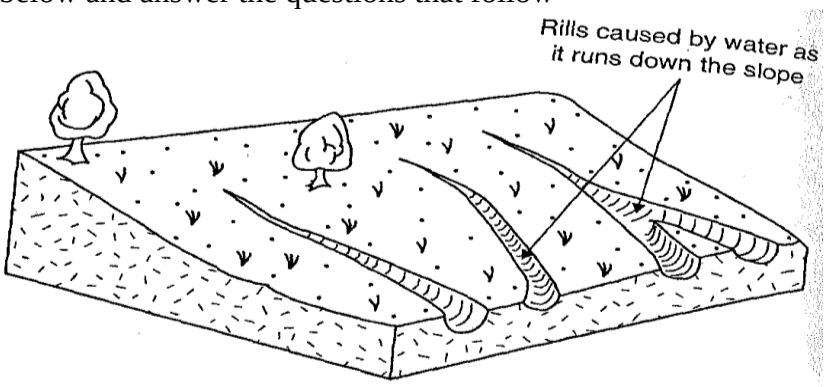
21. Study the diagram below and answer the questions that follow



a) Identify the diagram shown above **(1mk)**

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(b) Under what conditions would you expect the above diagram to occur **(2mks)**

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(c) State **two** ways of preventing the conditions shown in a above from occurring **(2mks)**

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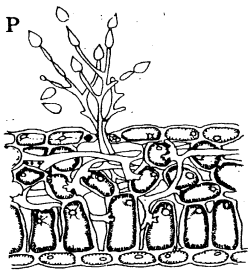
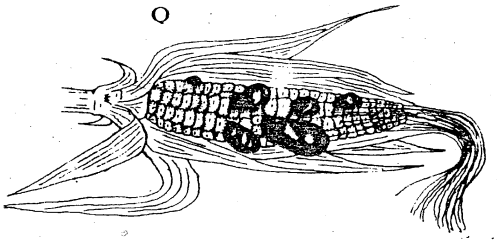
22. The diagrams below show symptoms of disease attack on some field crops.
Study them and answer the questions that follow.

P



Q



(a) Identify the pathogen causing symptoms shown in diagrams labeled P and Q. **(1mk)**

P –_____ **Q –**_____

(b) Give the name of the disease whose symptoms are indicated in diagrams P and Q. **(1mk)**

P - _____ **Q –** _____

(c) State **two** harmful effects of crop disease shown in diagram Q. **(2mks)**

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(d) Give **two** cultural control measures for infestation Q. **(1mk)**

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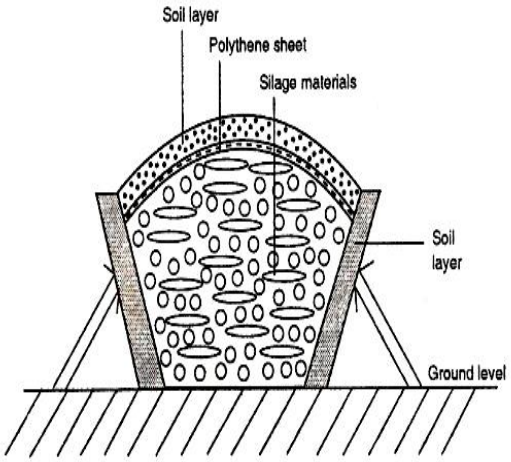
23. Below is a diagram of a clamp silo. Study it carefully and then answer the following questions.



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i)(a) What is the use of the soil layer at the sides? **(1mk)**

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(b) Why should the top of the silage material be arched or slopping? **(1mk)**

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c) Why is it necessary to check the temperature of the material throughout the ensiling process? **(1mk)**

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(d) How is high temperatures reduced in the silo during ensiling process? **(1mk)**

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(e) Give two reasons why molasses are added while making silage using Napier. **(1mk)**

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SECTION C (40 MARKS)

24.(a) State **four** major questions a farm manager needs to ask and answer while preparing a partial budget **(4mks)**

(b) Under what conditions is partial budget an appropriate tool for planning **(4mks)**

(c) A farmer has 160 ha of land, 60 ha of which is under wheat, 32 ha under maize, 12ha under fodder crops and the rest under pastures. She wishes to know whether replacing 12 ha of maize with irish potatoes the following year would be worthwhile. The fertilizer would have to be increased from 5 bags per ha for maize to 7 bags per ha for irish potatoes and an extra 100 man –days of casual labour per ha will be necessary as a result of the change. The average yield of maize and irish potatoes is 45 and 115 bags/ha respectively. The prices are Shs. 1400 per bag for maize and Ksh.1200 per bag for irish potatoes seed costs are Sh.2500 per ha for maize and Shs. 30,000 per ha for irish potatoes. Fertilizer costs are Shs.1300 per bag. Labour is paid at Shs. 150 per man-day.

Draw up a partial budget and indicate the effects of the change **(12mks)**

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25a) Explain **five** factors that influence soil productivity. **(10mks)**

b) Outline **five** factors that a farmer would consider before deciding on the type of irrigation in crop production. **(5mks)**

c) Describe the qualities of the mother plant that should be considered when selecting vegetative material for planting. **(5mks)**

26 a) Explain cultural measures used in the control of weeds in a field of Cereal crop. **(10mks)**

b) Explain **six** factors that can influence a well designed crop rotational program. **(6mks)**

c) Give four reasons why timely ploughing of the seedbed is important in crop production. **(4mks)**

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

443/2
AGRICULTURE
PAPER 2
FORM FOUR
2 HOURS

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c) This paper consists of **three** sections; **A, B** and **C**.
d) Answer all the questions in section **A** and **B**.
e) Answer **any two** questions in section **C**.
f) All answers should be written in the spaces provided.
g) This paper consists of 10 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 all the questions in English.

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Section	Question	Maximum Score	Candidate's Score
A	1 - 21	30	
B	22 - 25	20	
C	28	60	
	Total Score		

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SECTION A (30MARKS)

Answer all the questions in this section in the spaces provided

1. What is a notifiable disease **(½ mk)**

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2. List **four** routes through which disease causing organism enter the animals body **(2mks)**

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3. Outline **two** ways through which proper feeding contributes to disease control **(1mk)**

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4. State **four** characteristics of an effective acaricide **(2mks)**

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5. Give the adaptive features of gizzard which enables it to digest easily **(1½mks)**

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6. State **two** reasons which make teeth clipping an important management practice in pig production **(1mk)**

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7. (a) List **three** types of lubrication systems in a tractor **(1½mks)**

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(b) Give **four** functions of lubrication system **(2mks)**

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8. State **three** pre-desposing factors to coccidiosis disease in livestock farms **(1½mks)**

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9. Indicate the functions of each of the following parts of cooling system of an engine

Temperature gauge **(½mk)**

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Water jackets **(½mk)**

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Radiator **(½mk)**

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10. State **three** qualities of a good livestock ration **(1½mk)**

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11.(a) Give **two** causes of soft shells in eggs. **(1mk)**

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(b) How should the feeding of bees be supplemented during a dry season? **(½mk)**

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12. State **four** reasons for keeping livestock healthy. **(2mks)**

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13. State **four** disadvantages of inbreeding in livestock. **(2mks)**

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14. Outline **four** benefits of steaming-up in livestock. **(2mks)**

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15. Name **four** reasons for castrating male calves. **(2mks)**

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16. Outline **four** uses of solar energy in a farm. **(2mks)**

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17. State **two** reasons why calves should be housed in individual pens **(1mk)**

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18 Give **four** conditions that reduce the quality of eggs for incubation **(2Mks)**

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19. Mention **four** symptoms of milk fever in dairy cows. **(2Mks)**

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20. State **four** causes of infertility in dairy cattle **(2Mks)**

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21. Outline **three** reasons why farm structures should be maintained **(1½Mks)**

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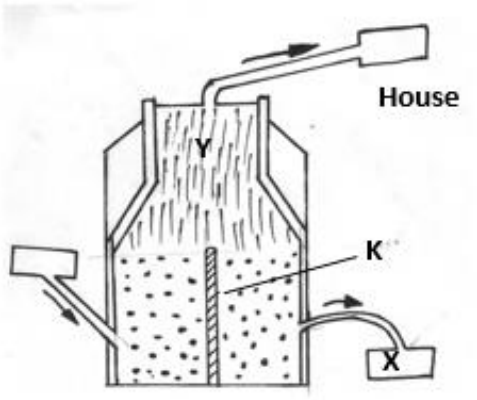
SECTION B (20 MARKS)

22. Study the biogas digester plant illustrated below and answer the questions that follow



(a) Give the name and use of the material in the part marked X **(2mks)**

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(b) State the major function of part marked K above **(1mk)**

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(c) Give the major component in the place marked Y on the diagram **(1mk)**

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(d) Outline the disadvantages of using the power source in the set up above **(1mk)**

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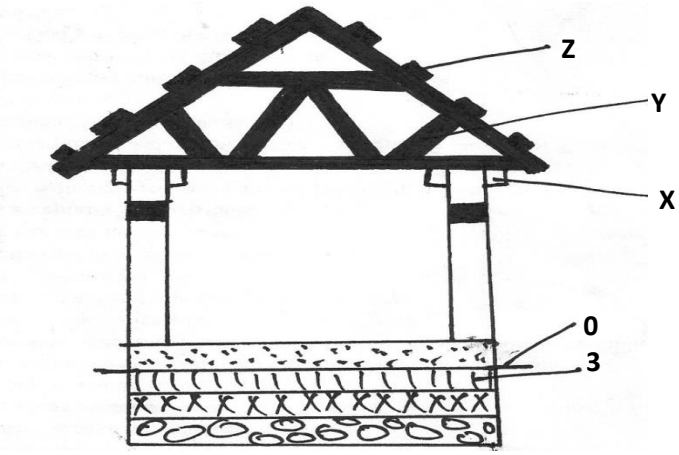
23. Study the farm structure below and answer the questions that follow



(a) Name the parts marked Z,Y and X on the structure **(1½mks)**

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(b) Give the ratio of the materials for making labeled 3 above **(1mk)**

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(c) State **two** functions of material placed in part marked O above **(1mk)**

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(d) Name **one** example of the tools that can be used on the part labeled Y above **(½mk)**

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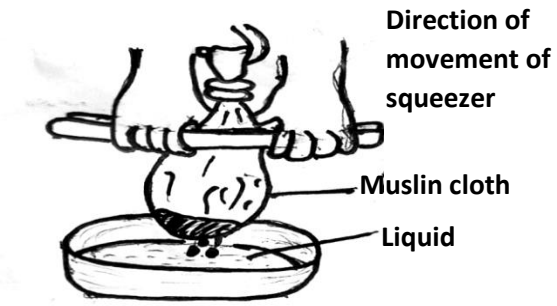
24. Study the method of livestock production preparation below and answer the questions that follow



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(a) Identify the method of extraction illustrated **(½ mk)**

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(b) Name **two** alternative methods of obtaining the product other than the one illustrated above **(1mk)**

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(c) Give **two** factors that determine the quality of the product **(1mk)**

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25.A farmer wants to prepare a ration for layers containing 18% DCP using maize germ 20% DCP and wheat bran 10% DCP.

(a) Calculate using pearson's square method the amount of each feed-stuff needed in order to prepare 100kg of feed **(4mks)**

(b) Name **one** other method the farmer can use to compute the ratio (1mk)

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SECTION C (40MARKS)

26.(a) State and explain **ten** materials and equipment used during milking. **(10Mks)**

(b) Explain **four** advantages of rearing birds through a battery cage system. **(10mks)**

27. Discuss foot and mouth disease under the following sub-headings.

a) i) Animal affected. **(2mks)**

ii) Methods of transmission. **(2mks)**

iii) Symptoms of attack. **(4mks)**

iv) Control measures. **(2mks)**

b) Outline general control measures of livestock parasites. **(10mks)**

28.(a) Give the differences between a petrol and a diesel engine **(10mks)**

(b) Describe the daily maintenance of a tractor **(10mks)**

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

231/1
BIOLOGY
(THEORY)
Paper1
Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

- Write your name and Index Number and the Name of your school in the spaces provided above.
- Sign and write the date of examination into each space provided above
- Answer ALL the questions in the spaces provided.

1. State the functions of the following points of a light microscope.

(a) Diaphragm **(1mk)**

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(b) Condenser **(1mk)**

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2. State the functions of the following organelles.

(a) Nucleolus **(1mk)**

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(b) Ribosomes **(1mk)**

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3. The reaction represented by the equation below occurs in the body.

Hydrogen peroxide $\xrightarrow{\text{Enzyme Y}}$ Oxygen + Water

(a) Name enzyme Y. **(1mk)**

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(b) Name an organ in the body where the reaction occurs. **(1mk)**

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(c) What is the significance of the reaction **(1mk)**

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4.(a) Name two disorders in man that occur through gene substitution **(2mks)**

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(b) Give two advantages of polyploidy in plants. **(2mks)**

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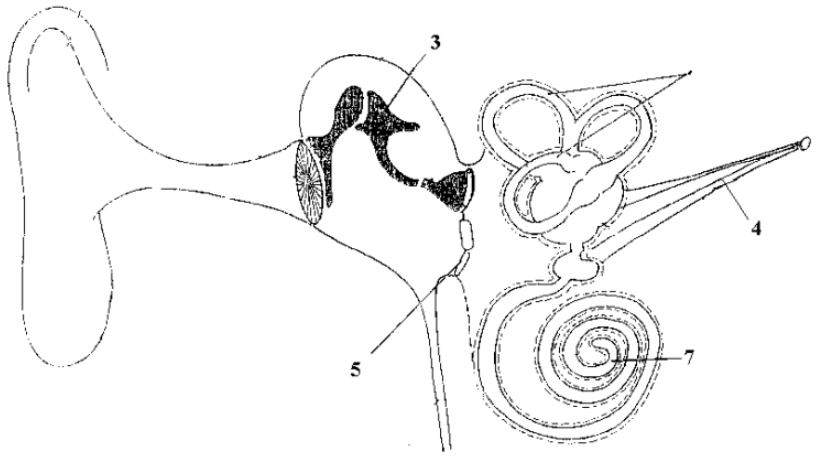
5.The diagram below shows the human ear.



a). Name the structures labeled 3, 4 **(2mks)**

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

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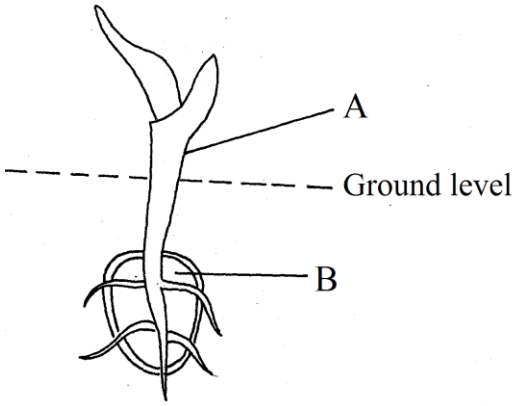
6. The diagram below represents a maize seedling



(a)(i) Name the type of germination exhibited by maize. **(1mk)**

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(ii) Give a reason for your answer in (a) (i) above. **(1mk)**

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(b) State the functions of the parts labelled A and B. **(2mks)**

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7. (a) Explain how the following factors control population.

(i) Predation **(1mk)**

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(ii) Competition **(1mk)**

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(iii) Parasitism **(1mk)**

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(b) A cat was used to control the population of rats.

(i) What term is used to refer to this method. **(1mk)**

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(ii) State one advantage of using the method you named in (i) above. **(1mk)**

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8. State the role played by the following substance in digestion.

(i) Hydrochloric acid **(2mks)**

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(ii) Bile salts **(2mks)**

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9. The chemical equation below represent a reaction that occurs in cels.

$2C_{51}H_{98}O_6 + 145O_2 \longrightarrow 102CO_2 + 98H_2O$

(i) Calculate the respiratory quotient (RQ) **(2mks)**

(ii) Identify the substrate used in the reaction. **(1mk)**

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(iii) Give two reasons why the substrate you have identified in 9. (ii) above is not the not the main respiratory substrate. **(2mks)**

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10. Explain what happens in humans when the concentration of glucose in the blood decreases below normal level. **(4mks)**

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11. State two adaptations of the alveolus to its functions. **(2mks)**

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12.(a) Explain the role of oxygen in Active transport **(1mk)**

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(b) Name two processes that depend on Active transport in animals **(2mks)**

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13. Name support tissues in plants thickened with:

(a) Cellulose **(1mk)**

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(b) Lignin **(1mk)**

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14. Give the survival value of the following tropic responses

a). Geotropism **(1mk)**

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b). Haptotropism **(1mk)**

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c). Chemotropism **(1mk)**

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15.(a) What are Analogous structures? **(1mk)**

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(b) Give two examples of Homologous structures **(2mks)**

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16. State three limitations of fossil records as an evidence of organic evolution **(3mks)**

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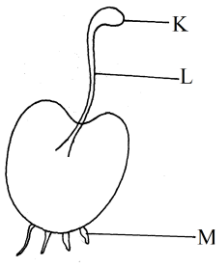
17. Study the diagram below and answer questions that follow



(a) State the division the organism belongs **(1mk)**

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(b) Name the parts labelled K and L **(1mk)**

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(c) What is the function of the part labelled M. **(1mk)**

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18. Explain the role of the following hormones in reproduction.

(a) Progesterone **(2mks)**

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(b) Oestrogen **(2mks)**

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19. State two factors that hinder self-pollination and fertilization. **(2mks)**

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20.A mango tree is known as mangifera Indica

(a) Identify two mistakes made in the writing of the name **(2mks)**

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(b) What is the scientific naming called? **(1mk)**

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21. State three methods that could be used to determine the diet of wild animals in an ecosystem **(3mks)**

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22. State two ways in which chloroplasts are adapted for photosynthesis **(2mks)**

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23. Name joints formed between the:

(a) Humerus and scapula **(1mk)**

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(b) Cranial bones **(1mk)**

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24. State the role of the following chemicals in a test for non-reducing sugar.

(i) Hydrochloric acid **(1mk)**

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(ii) Sodium hydrogen carbonate **(1mk)**

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25. Name two chemical compounds that are protein in nature that regulate metabolicactivities in the body **(2mks)**

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26. State three environmental factors that increase the rate of transpiration. **(3mks)**

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27. Carbon (II) oxide is a respiratory poison. Explain **(3mks)**

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NAME: ……..……

SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

231/2
BIOLOGY
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *Write **your name** and **index number** in the spaces provided.*
- *Answer **all** the questions in Section **A** in the spaces provided.*
- *In section **B** answer questions **6** (compulsory) and either question **7** or **8** in the spaces provided*

For Examiner's Use Only:

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
	1		
	2		
	3		
	4		
	5		
	6		
	7		
	8		
	TOTAL	80	

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1. In tomatoes hairy stem are produced;

a) By a dominant gen 'H' and hairless (smooth) stem by its recessive allele 'h'. Using a punnet square, work out the outcome between two heterozygous hairy stemmed plants. (**4mks)**

b) State the phenotypic ratio of the products **(lmk)**

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c) What will be the genotypes if the smooth variety is crossed with one of its parents? **(lmk)**

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d) State **two** ways in which. Genetics can be used in the field of Agriculture. **(2mks)**

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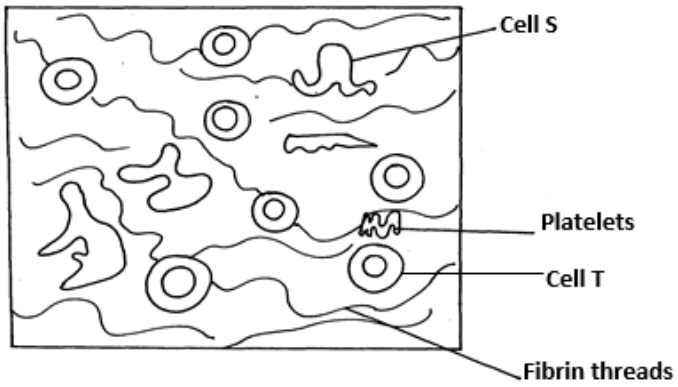
2. The diagram below represents a blood dotting formed in the body of a mammal



a. Name the cell labelled S and T. **(2mks)**

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b. State the function of the cell labelled S in the body of a mammal. **(lmk)**

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c. Describe how fibrin are formed. **(3mks)**

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d. Give **two** adaptations of cell labelled T to its functions. **(2mks)**

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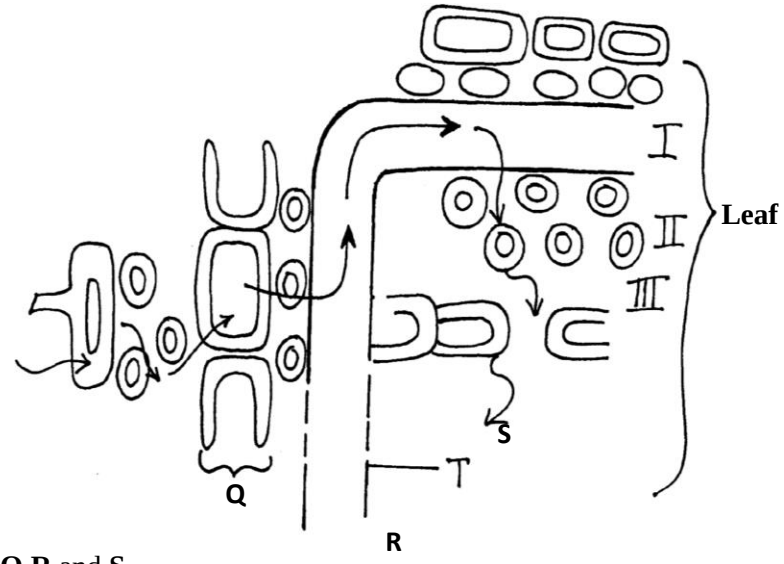
3. The diagram below represents a scheme diagram of movement of water from soil through leaves of a flowering plant into the atmosphere.



a. (i) Name parts labelled **Q R** and **S**. **(3mks)**

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(ii) How is structure labelled **R** adapted to its functions. **(2mks)**

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b. On the diagram draw alternative site for water loss through the leaf. **(lmk)**

c. Identify process (iii). **(lmk)**

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d. How is structure T adapted to its function? **(lmk)**

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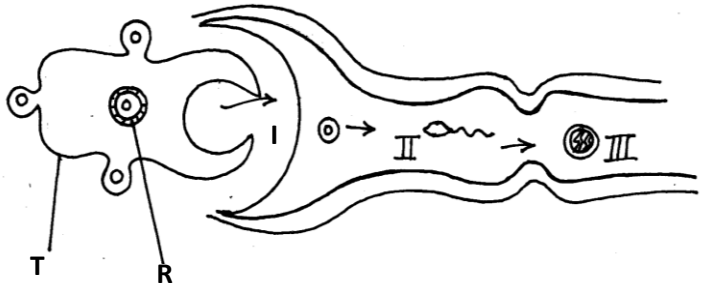
4. The diagram below shows some of the processes that take place in female reproductive system.



a. Name process labelled **I**_____ **_(lmk)**

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b. Name the structure labelled **T** and **R**. **(2mks)**

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c. Identify hormones responsible for the formation of structuresT and R. **(2mks)**

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d. Explain what leads to processes at II. **(3mks)**

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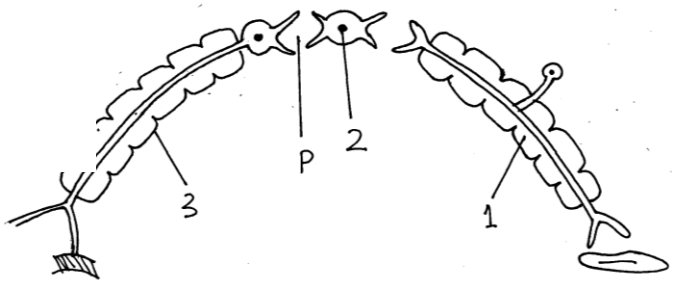
5. The diagram below shows three different types of neurones a long a reflex arc



a. Identify the neuron labelled 1, 2 and 3 **(3mks)**

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b. Using arrows show the direction of impulse transmission on the diagram. **(lmk)**

c. Name the part of the spinal cord where the cell bodies of neurone 2 and 3 are located. **(lmk)**

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d. Describe the transmission impulse across the part labelled P. **(3mks)**

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6. During germination and growth of a cereal, the dry weight of endosperm, the embryo and the total dry weight were determined at two day intervals. The results are shown in the table below.

Time after planting	Dry weight of endosperm (mg)	Dry weight of embryo (mg)	Total dry weight
0	43	2	45
2	40	2	42
4	33	7	40
6	20	17	37
8	10	25	35
10	6	33	39

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a. Using the same axes, draw graphs of dry weight of endosperm, embryo and the total dry weight against time. **(7mks)**

b. What was the total dry weight on day 5 **(lmk)**

c. Account for;

i. Decrease in dry weight of endosperm from day 0 to 10. **(2mks)**

ii. Increase in dry weight of embryo from day 0-10. **(2mks)**

iii. Decrease in total weight from day 0 to 8. **(lmk)**

iv. Increase in total dry weight after day 8. **(lmk)**

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d. State **two** factors within the seed and two outside the seed that cause dormancy.

i. Within seed. **(2mks)**

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ii. Outside the seed. **(2mks)**

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e. Give **two** characteristics of meristematic cells. **(2mks)**

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7. Discuss the various evidences which show that organic evolution has taken place. **(20mks)**

8. a) State any **three** differences between monosaccharides and polysaccharides. **(3mks)**

b) Explain the biological functions of lipids to living organisms. **(8mks)**

c) Describe the laboratory test for proteins using biurets test. **(2mks)**

d) Describe the role of the following in mammalian digestive system.

i. Pepsin **(2mks)**

ii. Bile **(2mks)**

iii. Hydrochloric acid - **(2mks)**

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NAME: ……..……..

SCHOOL: ……

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

231/3
BIOLOGY
PAPER 3(PRACTICAL)
TIME: 1 ¾ HOURS

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

BIOLOGY 231/3
PAPER THREE

INSTRUCTIONS TO CANDIDATE

1. Write your name and admission number in the spaces provided above.
2. Sign and write date of examination in spaces provided.
3. Answer all questions in the spaces provided in the question paper
4. You are not allowed to start working with the apparatus for the first 15 minutes of the 1 & ¾ hours allowed for this paper. This time is to enable you to read the question paper and make sure you have all the chemicals and apparatus that you may need.

For Examiners Use Only

Section	Question	Maximum score	Candidates score
	1	15	
	2	15	
	3	10	
	TOTAL SCORE	40	

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1. You are provided with three solutions K, M3 & M4. M3 is the same as M4 except that M4 is boiled. You are also provided with 2 visking tubing, piece of thread, two beakers, 6 test tubes in a rack, thermometer, test tube holder and the following solutions; iodine, sodium hydroxide, copper(II) sulphate and Benedict's.

(a) Tie one end of the visking tubing tightly using a thread. Put 10ml of solution K and 1 ml of solution M3 into the visking tubing. Tie the other end of the visking tubing. Place the visking tubing in a beaker half filled with iodine solution. Take a second visking tubing and repeat the same using M4. Place the beakers containing the visking tubing in a water bath maintained between $(35 - 38)^0$C. Allow the set-ups to stand for 30minutes. Then after 30 minutes remove the visking tubings and test their contents and those of the beakers.

SAMPLE 1 (K + M3) **(6 MARKS)**

CONTENTS IN	TEST	OBSERVATION	CONCLUSION
	Iodine test		
	Benedict's test		
	Biuret's test		
	Iodine test		
	Benedict's test		
	Biuret's test		

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SAMPLE 2 (K + M4) **(6MARKS)**

CONTENTS IN	TEST	OBSERVATION	CONCLUSION
	Iodine test		
	Benedict's test		
	Biuret's test		
	Iodine test		
	Benedict's test		
	Biuret's test		

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(b) Account for the results in:

(i) Table 1 **(1mk)**

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(ii) Table 2 **(2mks)**

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2. You have been provided with specimen labelled X. The specimen and the photograph of Y are obtained from the same animal. Use them to answer the question that follow.

PHOTOGRAPH Y



a) Giving two reasons identify Y.

(i) Identity **(1mk)**

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(ii) Reasons **(2mks)**

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b) Give two adaptations of the specimen labelled X **(2mks)**

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c) State two observable differences between X and Y **(2mks)**

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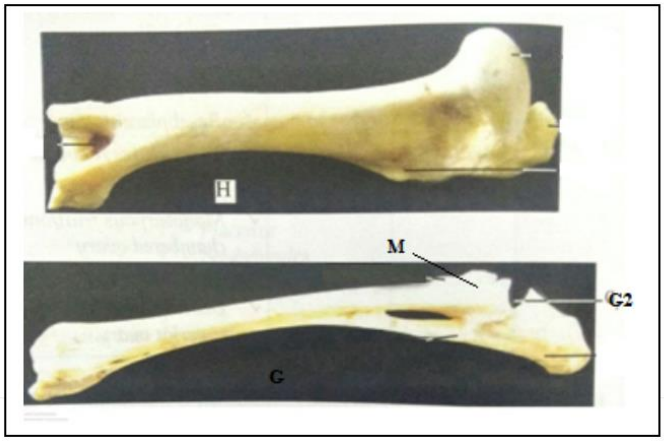
d) Make a drawing showing the anterior view of X and label all the parts **(4mks)**

e) The photograph below shows bones from another animal



(i) Which part of the body was H obtained from **(1mk)**

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(ii) Identify G2 **(1mk)**

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(iii) With a reason name the type of joint at the proximal end of specimen H **(2mks)**

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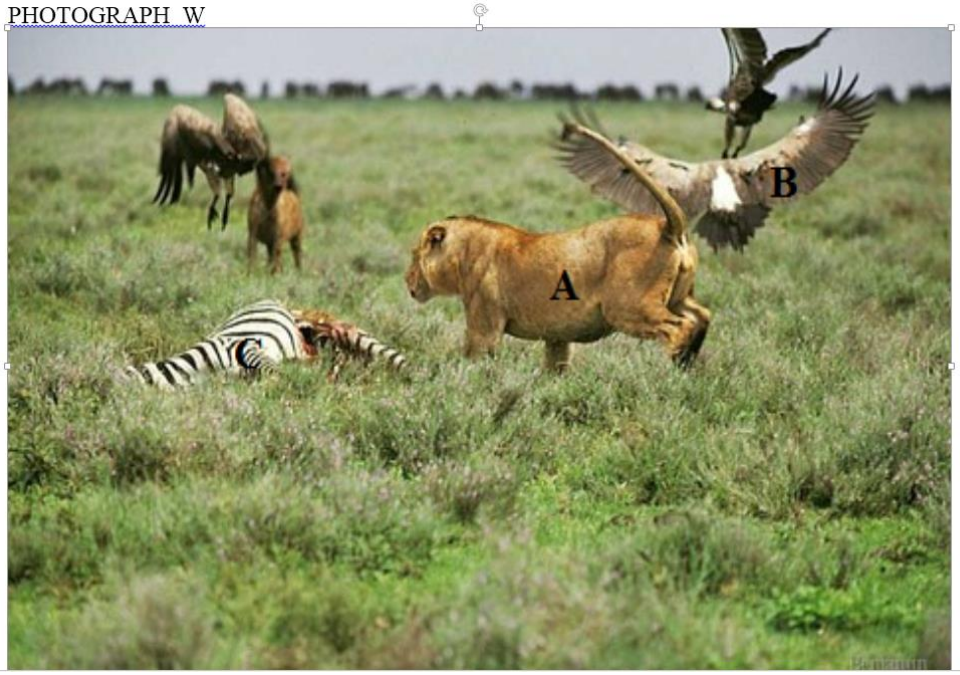
3. Study the photographs below and answer the questions that follow

PHOTOGRAPH W



PHOTOGRAPH M



a)Name the type of relationship in:

(i) Photograph W **(1mk)**

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(ii) Photograph M **(1mk)**

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b) Explain your answer in a(ii) above **(2mks)**

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c) What is the importance of the relationship taking place in the photograph W **(1mk)**

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d) Using observable feature only explain two ways in which the flower is adapted for the activity taking place in photograph M **(2mks)**

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e).(i) Give the biological term used to refer to the phenomenon captured in photograph W between organisms A and B towards C **(1mk)**

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(ii) State two implications of the phenomenon mentioned in d(i) above **(2mks)**

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THIS IS THE LAST PRINTED PAGE!

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NAME: ……..……

SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

565/1
BUSINESS STUDIES
PAPER 1
FORM FOUR

Instructions

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

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

c) Answer all the questions.

d) All answers should be written in the spaces provided in this booklet.

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

f) Candidates should answer all the questions in English.

For Examiner's Use Only

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

Question	14	15	16	17	18	19	20	21	22	23	24	25
marks												

Total marks

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

1. Identify the rewards of the following factors of production. **(4Mks)**

Factor	Reward
(a) Limestone	……..
(b) Teacher	……..
(c) Exchange of goods	……..
(d) Landlords	……..

2. Outline **four** circumstances under which a firm would be located near the market for its pproduct. **(4Mks)**

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3. State **four** unethical practices that traders should avoid in product promotion. **(4Mks)**

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4. Nundu and Thuku bought a building for Kshs 12,000,000. The building was insured for 8,000,000 against the risk of fire. Later the building was partially destroyed by fire to a tune of Kshs 6,000,000.

(a) State the amount of compensation likely to be paid by the insurance company. **(3Mks)**

(b) Give a reason for your answer. **(1Mk)**

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5. Outline **three** reasons why a seller may prefer cash with order (C.W.O) Policy in his operation. **(3Mks)**

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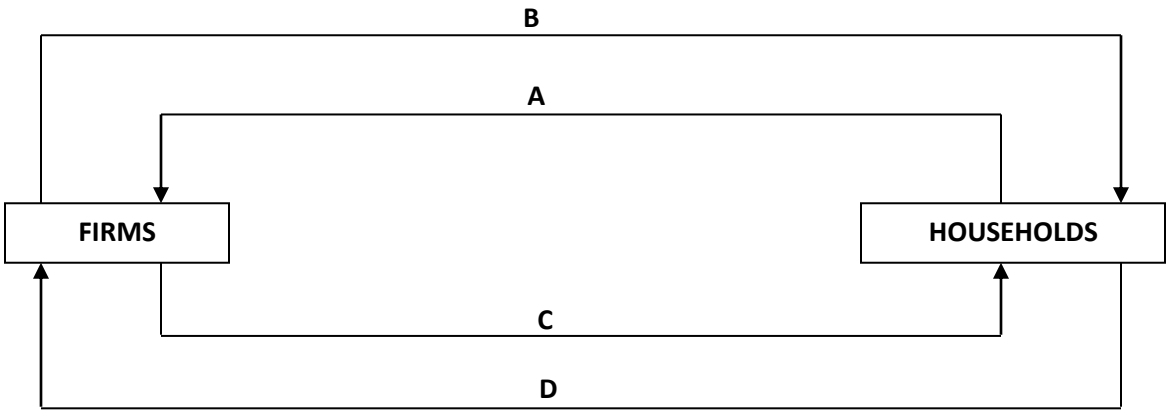
6. Study the diagram below and answer questions that follow.



(i) What does this diagram represent? **(1Mk)**

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(ii) Identify what letters A,B,C and D represent.

A…….. **(1Mk)**

B…….. **(1Mk)**

C…… **(1Mk)**

D……. **(1Mk)**

7. The final capital for Mundu's business for the year ended 30th June 2022 was Kshs90, 000. During the trading period he made a loss of Kshs5000 and the additional investment of Kshs46, 000 and drawings of Kshs5, 100. Calculate the initial capital. **(4Mks)**

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8. The per capita income in a country X was £350 in January 2020. At the end of the year the per capita income had increased to £420. State **four** reasons why the standards of living of the people in the country X may not have risen during the year. **(4Mks)**

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9. Highlight **four** reasons why motorbikes have replaced bicycles as the choice for transport. **(4mks)**

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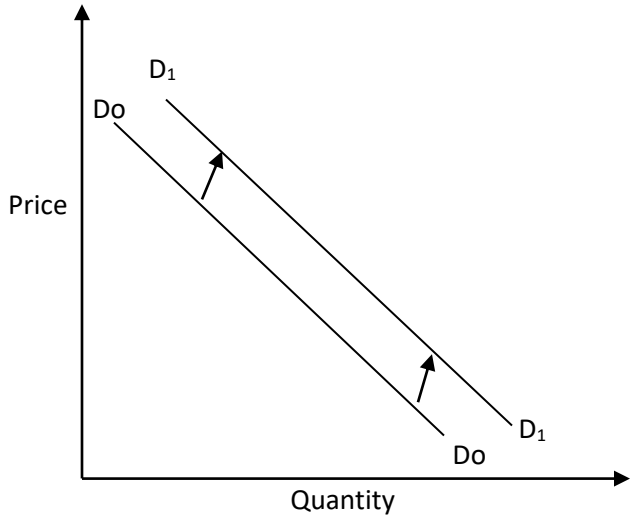
10. The diagram below shows a demand curve DoDo and D_ID_I. Highlight **four** factors to account for the above shift. **(4Mks)**



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11. A business opportunity exists where there is a gap to be filled in the market. State **four** situations that may create a gap. **(4Mks)**

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12. State **four** factors that may limit an individual's ability to satisfy his basic human wants. **(4mks)**

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13. The following details relate to Kango Traders as at 31. 12. 22

	Shs.
Sales	300,000
Stock (1/1/23)	45,000
Stock (31/12/23)	35,000
General expenses	25,000
Capital	400,000
Margin	25%

Calculate;

(a) Purchases **(2Mks)**

(b) Net profit **(1Mk)**

(c) Rate of turnover **(1Mk)**

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(d) Rate of return on capital **(1Mk)**

14. State **three** reasons why people hold money. **(3Mks)**

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15. Name **four** features that distinguish economic growth from economic development. **(4Mks)**

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16. Outline **four** circumstances under which partnership may be dissolved. **(4Mks)**

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17. As a banker to the government state **four** services that the central Bank renders to the government. **(4Mks)**

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18. The following transaction relate to Mawo traders. Indicate the accounts to be debited and credited **(4Mks)**

Transactions	Account to be debited	Account to be credited
(a) Withdraw cash from the bank for office use.		
(b) Bought goods on credit		
(c) Took shs 500,000 from the cash till to pay his son's dowry		
(d) Converted his lorry into business motor vehicle.		

19. Highlight **four** circumstances under which a manufacturer would not require substantial warehousing. **(4Mks)**

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20. State **four** uses of an invoice to a seller of goods. **(4Mks)**

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21. Outline **four** errors which do not affect the agreement of a trial balance. **(4Mks)**

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22. Match the accounts below with the appropriate types of ledger where they are kept. **(4Mks)**

(a) Returns inwards ……

(b) Drawings ……..

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(c) Bank ……

(d) Discount received ……

23. Enter the following transactions is the two-column cash book of Katundu traders given below. **(4Mks)**

2021

Feb 10- Paid a creditor Shs.7, 500 by cheque

20- Received Shs.5, 000 in cash from Muthiani a debtor

25- Deposited Shs.12, 500 into a bank

28- Paid wages Shs.2, 400 in cash

24. Mula and Museba have each taken life assurance cover. State **four** reasons why Mula is to payhigher premiums than Museba. **(4Mks)**

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25. State **four** limitations of using mobile phone in communication. **(4Mks)**

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NAME: ……..……

SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

565/2
BUSINESS STUDIES
PAPER 2
FORM FOUR
TIME: $2^{1}/_{2}$ HOURS

Instructions

a) *This paper consists of **six** questions.*

b) *Answer any **five** questions*

c) *Answers should be written in the booklet provided.*

d) *All questions carry equal marks.*

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

f) ***Candidates should answer all the questions in English.***

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1. a) Explain **five** benefits of division of labour to an organization. **(10 mks)**

b) With the aid of a diagram, explain the effect of an increase in the supply of a commodity while its demand remains constant. **(10mks)**

2 a) Explain **five** ways in which central bank of Kenya may control the supply of money in the country **10mks)**

b) Explain **five** characteristics of property insurance. **(10mks)**

3 a) Highlight any **five** merits of direct tax. **(10mks)**

b) Explain the differences between a public company and a public corporation **(10mks)**

4a) Explain **five** features of oligopoly. **(10mks)**

b) Kenya is experiencing a general increase in prices of commodities. Explain any **five** causes of this trend. **(10mks)**

5a) On July 2022, Ufanisi Traders had cash in hand sh 3,500 and cash at bank shs. 140,000. The following transactions took place during the month

July 2: Cash sales sh 42, 000 was paid direct into the bank.
July 3: Received a cheque of sh 15000 from Kariuki in full settlement of his debt.
July 8: Bought goods by cheque sh 26000.
July 13; Paid Wanjiku by cheque sh 24000 after deducting 5% cash discount.
July 17; Withdrew sh. 40,000 from bank for office use.
July 22; Bought office furniture by cheque sh. 50,000
July 27; Received a cheque for sh 9000 from Waweru after deducting a 5% cash discount.
July 30; Banked all the money except sh. 7000Required:

Prepare a Three-Colum cash book and balance it off. **(10mks)**

b) Explain **five** factors that would influence the choice of office layout to be adopted by a firm. **(10mks)**

6a) The following information related to Rashid Traders for the year ended 31st May 2019. **(10mks)**

	Shs.
Purchases	150,000
Opening stock	40,000
Closing stock	10,000
Margin	40%
Total expenses	5,000
Capital	100,000

Calculate:

a) The mark-up **(1mk)**
b) Cost of goods sold **(2mks)**
c) Gross profit **(2mks)**
d) Sales **(2mks)**
e) Net profit **(1mk)**
f) Rate of return on capital **(2mks)**

b) Explain five challenges facing the transport industry in Kenya today **(10mks)**

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NAME: ……..……

SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

233/1
CHEMISTRY
PAPER 1
THEORY
FORM 4
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Write your **name** and **index number** in the spaces provided above**.**
- **Sign and write the date of examination in the spaces provided above.**
- Answer **ALL** the questions in the spaces provided.
- **Mathematical tables and electronic calculators may be used.**
- All working **MUST** be clearly shown where necessary**.**

FOR EXAMINERS USE ONLY

Questions	Maximum Score	Candidate's Score
1 – 28	**80**	

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1. a) A hydrocarbon consists of 92.3% carbon. Its molecular mass is 26. Calculate it's Molecular formula. **(2mks)**

b) Draw the structure of the hydrocarbon. **(1mk)**

2. a) Explain why melting point of chlorine gas is greater than that of Argon. **(lmk)**

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b) Using dot(•) and cross (×) to represent electrons draw a diagram to show bonding in carbon (iv) oxide. **(lmk)**

c) In terms of structure and bonding. Explain why Graphite is used as a lubricant. **(1mk)**

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3.a) What is observed when a few drops of phenolphthalein indicator is added to a solution whose pH value is 3.0? **(lmk)**

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b) Write an equation for the reaction between Lead (ii) oxide and dilute Nitric acid. **(lmk)**

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4. State and explain the observation that would be made when zinc powder is heated with copper (II) oxide.**(2mks)**

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5. Why is it dangerous to run a motor car engine in a closed garage? **(2mks)**

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6. 2 grams of sodium hydroxide is added to 30 cm3 of IM sulphuric (VI) acid. What volume of 0. 1M potassium hydroxide solution will be needed to neutralize the excess acid. (Na23,016,H1) **(3mks)**

7. An aqueous solution of hydrogen chloride gas reacts with manganese (IV) oxide to form chlorine gas while a solution of hydrogen chloride gas in methylbenzene does not react with manganese (iv) oxide. Explain **(2mks)**

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8. A small piece of potassium Manganate (VII) was placed in a glass of water and was left standing for 6 hrs without shaking. State and explain the observations made. **(2mks)**

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9. Magnessium reacts with both dilute and concentrated sulphuric (VI) acid. Write a balanced equation for the two reactions**.** **(2mks)**

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10. The table below gives the atomic numbers of elements **W, X, Y** and **Z**.

Element	W	X	y	Z
Atomic number	14	17	16	19

a) Name the type of bonding that exists in the compound formed when **X** and **Z** reacts. **(1mk)**

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b) Select the letter representing the strongest reducing agent. Give a reason for your answer. **(2mks)**

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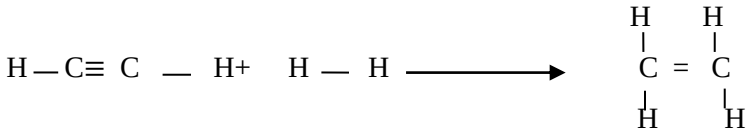
11. Ethyne reacts with hydrogen as shown below



Use the bond energies below to calculate the enthalpy changes for the above reaction. **(3mks)**

BOND	ENERGY
H-H	435
C-H	413
C ≡ C	835
C=C	611

12.a) Explain the role of common salt in defrosting ice on roads in ice cold countries. **(1mk)**

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b) Explain why the long term effects of use of common salt is costly to motorists. **(1mk)**

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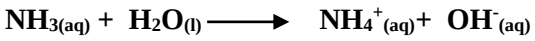
13. Given the equation below



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Identify the species that acts as;

i) A base. Explain **(1mk)**

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ii) An acid. **(½mk)**

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14.a) State Grahams law of diffusion**.** **(1mk)**

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b) The rate of diffusion of sulphur(IV)oxide gas through a porous material is 40cm3s $^{-1}$.
Calculate the rate of diffusion of carbon(IV)oxide gas through the same porous material *(S=32,O=16,C=12)* **(2mks)**

15. Describe how a solid sample of lead(II) chloride can be prepared using the following reagents : dilute nitric acid, dilute hydrochloric acid and lead carbonate **(3mks)**

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16. The production of ammonia is given by the equation

$$3H2\,(g) + N_2(g) \rightleftharpoons 2NH_3\,(g);\ \Delta H\text{=-ve}$$

(i) State and explain the effect of addition of dilute hydrochloride acid on equilibrium. **(2mks)**

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(ii) Explain the effect of increase in temperature on the yield of ammonia. **(2mks)**

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17. $Cr_2O_7^{2-} + 14\ H^+(aq) + 6Fe^{2+} \longrightarrow Cr_2^{3+} + 7H_2O(l) + 6Fe^{3+}$.

The above equation show a redox reaction

(a) Calculate the oxidation state of chromium in $Cr_2O_7^{2-}$ **(2mks)**

(b) What is the role of H^+ in the above reaction. **(1mk)**

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18. a) Define the standard heat of formation. **(1mk)**

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b) Draw energy cycle diagram to show how the standard heat of formation of ethanol (C_2H_5OH) can be determined from standard heats of combustion of its elements. **(2mks)**

c) Given that $\Delta H_C(C) = -393 kJmole^{-1}$, $\Delta H_C(H_2) = -286 kJmole^{-1}$ and $\Delta H_C(C_2H_5OH) = -1368 kJmole^{-1}$. Calculate the enthalpy of formation of C_2H_5OH. **(2mks)**

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19. 3.78g of a hydrated salt of iron (II) sulphate, $FeSO_4$, in H_2O were heated until all the water of crystallization was driven off. The anhydrous salt left had a mass of 1.52g. Determine the formula of the hydrated salt. (Fe = 56, S = 32, H = 1, O = 16) **(3mks)**

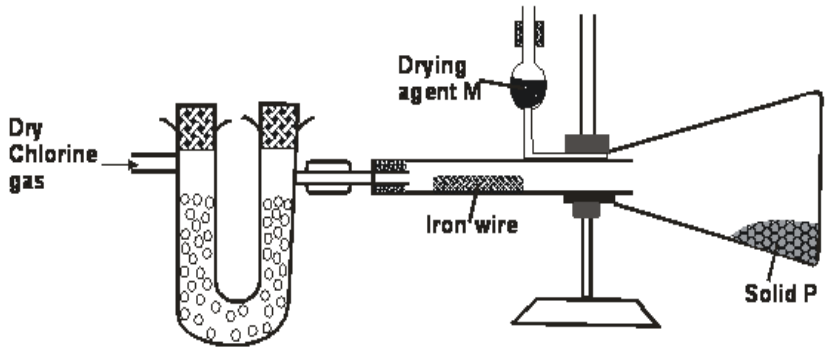
20. A steady current of 0.2 Amperes was passed through molten silver bromide for 80 minutes.

a) Calculate the quantity of electricity that passed through the set up. **(1mk)**

b) Calculate the mass of product deposited at the cathode. (1F = 96500C; Ag = 108, Br = 80) **(2mks)**

c) If a sample of cobalt has an activity of 1000 counts per minute, determine the time it would take for its activity to decrease to 62.50 if the half-life of the element is 30 minutes. **(2mks)**

21. The apparatus set up below was used to prepare an anhydrous solid P



a) Write an equation for formation of solid P **(1mk)**

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b) Suppose the gas used in the set up was dry hydrogen chloride gas; what would be the product obtained after the reaction? Give a reason for your answer. **(1mk)**

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22. Aluminium is obtained from the ore with the formula $Al_2O_3.2H_2O$. The ore is first heated and refined to obtain pure aluminium oxide (Al_2O_3). The oxide is then electrolysed to get Aluminium and oxygen gas using carbon anodes and carbon as cathode.

a) Give the common name of the ore from where aluminium is extracted from. **(½mk)**

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b) What would be the importance of heating the ore first before refining it? **(1mk)**

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c) The refined ore has to be dissolved in cryolite first before electrolysis. Why is this necessary? **(1mk)**

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d) Why are the carbon anodes replaced every now and then in the cell for electrolysing aluminium oxide? **(1mk)**

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23. Use the cell representation below to answer the questions that follow

$V(s) / V^{3+}(aq) // Fe^{2+}(aq) / Fe(s)$

i. Write the equation for the cell reaction **(1mk)**

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ii. If the E.M.F of the cell is 0.30 volts and the E^{θ} value for $V^{3+}aq / V(s)$ is -0.74V, calculate the E^{θ} of $Fe^{2+}(aq)/ Fe(s)$ **(2mks)**

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24. When $50cm^3$ 1M potassium hydroxide was reacted with $50cm^3$ of 1M hydrochloric acid, the temperature rose by 8^0C. When the same volume of Potassium hydroxide was reacted with $50cm^3$ of 1M Pentanoic acid, the temperature rose by 3^0C.

i) Give reasons for the above difference in temperature. **(2mks)**

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ii) Write an equation to show dissociation of pentanoic acid? **(1mk)**

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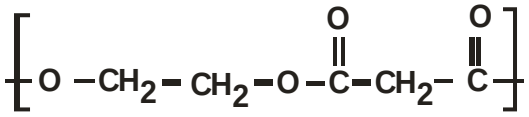
25. The following is structural formula of polyester.



a) Draw the structural formula and name the alkanoic acid and alkanol that react to form the polymer.**(2mks)**

b) Give **one** use of polyester. **(1mk)**

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26. A heavy metal P was dissolved in dilute nitric acid to form a solution of compound $P(NO_3)_2$. Portions of the resulting solution were treated as follows:

a) To the first portion a solution of dilute hydrochloric acid is added, where a white precipitate (S) is formed, which dissolves on warming.

b) The second portion is treated with two drops of 2M Sodium hydroxide solution where a white precipitate T is formed. The white precipitate dissolved in excess sodium hydroxide to form a colourless solution.

c) A solution of potassium iodide is added to the third portion where a yellow precipitate (U) is formed.

d) When the resulting solution is evaporated to dryness and heated strongly a yellow solid (V) is formed and a brown gas (W) and a colourless gas (X) are formed.

i. Identify the substances P, S, T, U, V, W. **(3mks)**

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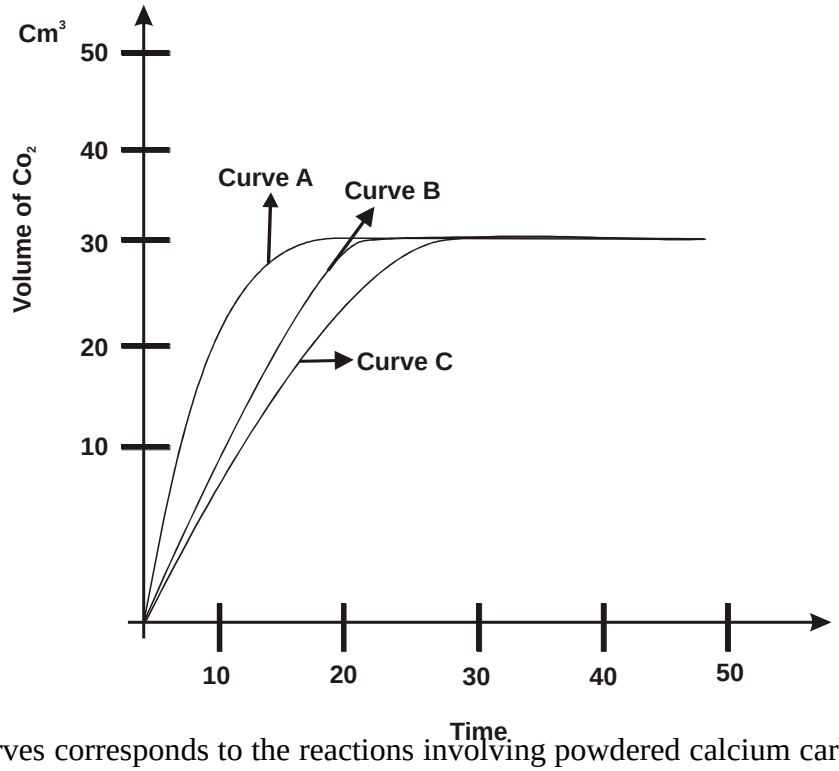
27. The graphs below were drawn when 15g of marble chips in different physical states were reacted with $50cm^3$ of 2M Hydrochloric acid. They are drawn by measuring the volume of carbon (iv) oxide produced with time.



a) Which curves corresponds to the reactions involving powdered calcium carbonate and large sized marble chips with the dilute acid?

(i) Powdered calcium carbonate **(½mk)**

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(ii) Large sized calcium carbonate **(½ mk)**

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b) All the graphs eventually flatten out at the same level but at different time. Why do the graphs flatten out at the same level? **(1mk)**

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c) Why is curve A very steep at any given point compared to the other curves. **(1mk)**

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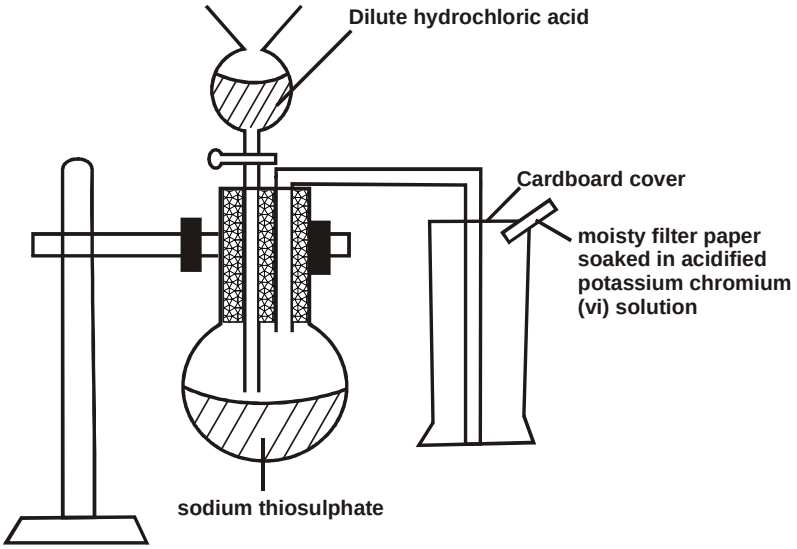
28. Sodium thiosulphate was reacted with dilute hydrochloric acid in a round bottomed flask as shown below. The gas evolved was collected by downward delivery in a gas jar.



a) Write an equation to show the reaction going on in the reaction in vessel. **(1mk)**

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b) State the observation noted on the filter paper. Give a reason for your answer. **(1mk)**

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c) Give a reason why the filter paper soaked in the acidified potassium chromium (VI) is used at the top of the flask **(1mk)**

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SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

233/2

CHEMISTRY

PAPER 2

(THEORY)

FORM 4

TIME: 2 HOURS

INSTRUCTIONS:

- Write your name and index number in spaces provided above.
- Answer **ALL** the questions in the spaces provided.
- Mathematical tables and silent electronic calculators may be used.
- All working must be clearly shown where necessary.

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Question	Maximum Score	Candidates score
1	13	
2	15	
3	11	
4	10	
5	10	
6	10	
7	11	
TOTAL SCORE	**80**	

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1.The grid below represents the periodic table. Study it and answer the questions that follow. The letters do not represent the actual symbols of elements.

E									**F**
G	**D**				**K**		**N**		
			W		**T**			**M**	
R	**Q**						**Y**		

a) i) Which letter represents an element that is least reactive? **(1mk)**

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ii) Why are elements D and Q referred to alkali earth metals? **(1mk)**

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b) How does the atomic radius of W and T compare? Explain. **(2mks)**

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c) Select **two** letters representing elements that would react most explosively. **(2mks)**

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d) Write the equation showing how Y forms its ion. **(1mk)**

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e) Write the formula of:-

i) Chloride of D. **(½mk)**

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ii) Nitrate of W. **(½mk)**

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f) What type of bonding exists between;

i) G and N. **(½mk)**

.....

.....

ii) K and Y. **(½mk)**

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g) Explain why melting point of Y is higher than N. **(1mk)**

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h) The 1st, 2nd and 3rd ionization energies (in KJ/mol) of elements G and R are given below.

Element	1st I.E	2nd I.E	3rd I.E
G	520	7,300	9,500
R	420	3,100	4,800

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

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ii) Apart from the decrease in energy levels, explain the big difference between 1st and 2nd ionization energies. **(1mk)**

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iii) Calculate the amount of energy in KJ/mol for the process. **(1mk)**

$$R_{(g)} \longrightarrow R^{3+}_{(g)} + 3e^-$$

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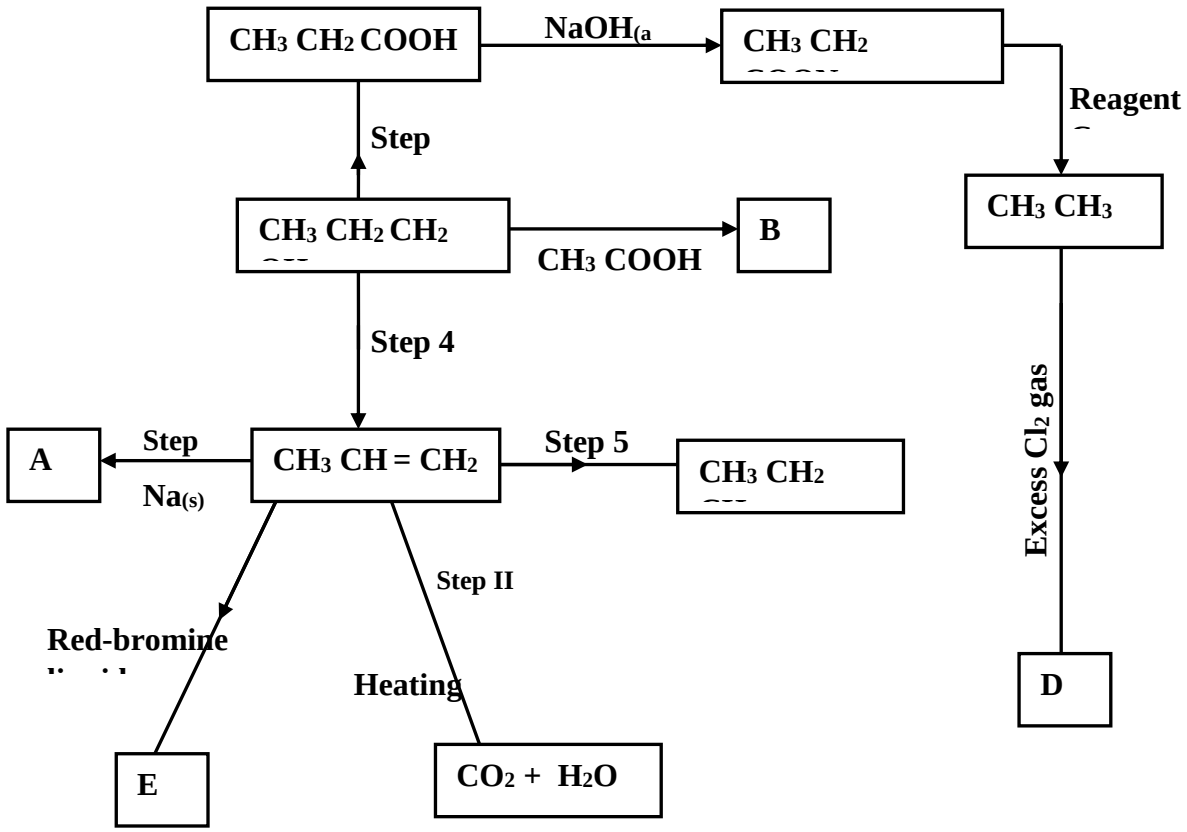
2.I. The scheme below shows some organic reactions. Study it carefully and answer the questions that follow.



a) Write the formula of compounds. **(2mks)**

i) B

.....

ii) A

.....

b) Name the type of reaction, reagent and conditions for the reactions of the following steps.

i) Step 1: **(2mks)**

Type**……**

Reagent

……

ii) Step 4: **(2mks)**

Type**……**

Reagent

……

iii) Step 5: **(2mks)**

Type**……**

Reagent

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c) Name reagent C.

.....

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d) Draw and name the structural formula of D. **(2mks)**

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e) Name the structure E. **(1mk)**

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f) Give **one** property of compound B. **(1mk)**

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II. Polymers and fibres are either synthetic or natural.

i) Give **two** examples of synthetic fibres and polymers. **(1mk)**

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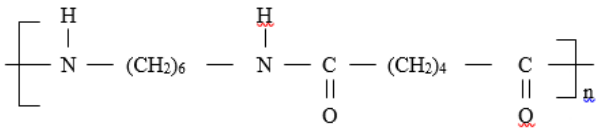
ii) A polymer is formed whose formula is;



Draw the structural formula of the monomers. **(2mks)**

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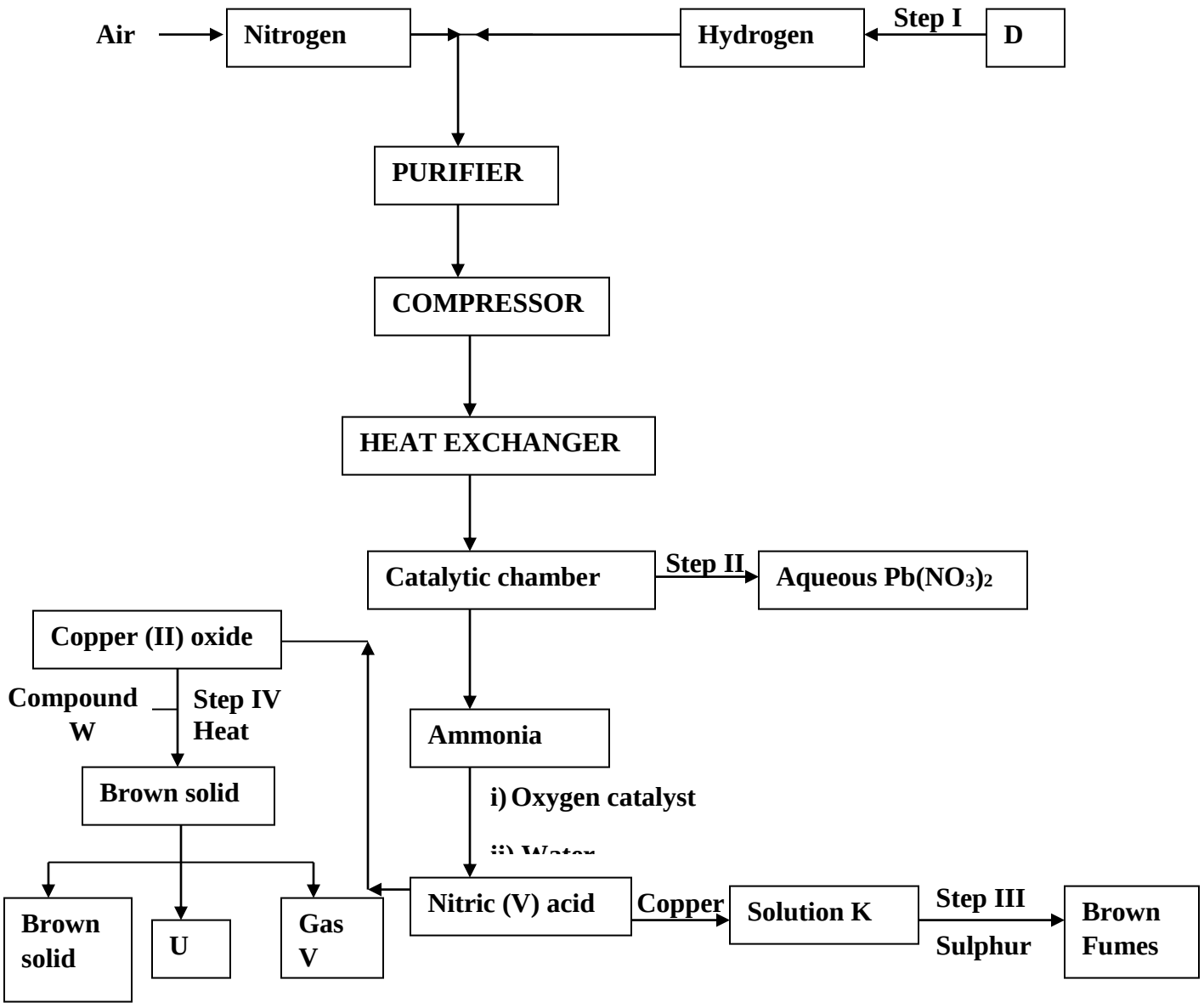
3.Study the scheme below and answer the questions that follow.



a) Name the impurities removed by the purifier. **(2mks)**

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b) What is the work of the heat exchanger? **(1mk)**

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c) Write down the chemical equation for the reaction taking place where Nitric (V) acid is formed. **(1mk)**

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d) Name;

i) Compound W. **(1mk)**

……

ii) Substance U. **(1mk)**

……

iii) Gas V. **(1mk)**

……

e) Write down the formula of compound P. **(1mk)**

……

f) Other than manufacture of ammonia write down **one** other use of Nitrogen. **(1mk)**

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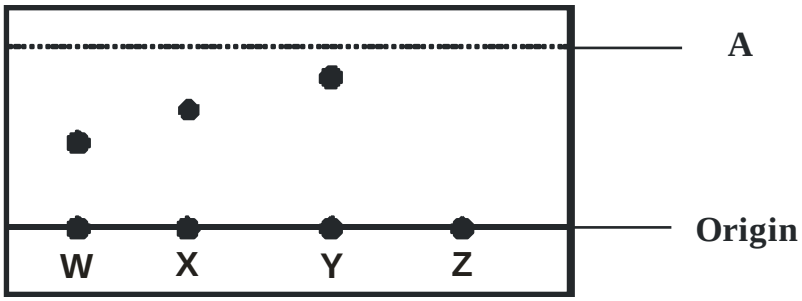
g) Calculate the mass of Nitrogen in 6.6g of Ammonium Sulphate. (H = 1, S = 32, O = 16). **(2mks)**

4. The diagram below represents a paper chromatogram of pure substances W, X, Y and Z.



a) Name A. **(1mk)**

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b) Explain why substance Y moves faster from origin than X. **(1mk)**

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c) Explain the observation made on substance Z in the chromatogram. **(1mk)**

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d) The relationship between pressure and volume of a fixed mass of a gas was studied at 25°C. The data was recorded as shown in table below.

Volume (dm^3)	0.5	1	2	3
Pressure (atmosphere)	6	3	1.5	1
Product of volume and pressure				

i) Complete the table by calculating the products of volume and pressure. **(2mks)**

ii) Using the data comment on the relationship between volume and pressure of fixed mass of gas at constant temperature. **(1mk)**

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e) Use the information below to answer the questions that follow.

$C_{(s)} + O_{2(g)} \longrightarrow CO_{2(g)}$ **$\Delta H_1 = -393.5$ Kj/mol^{-1}**

$H_{2(g)} + ½\ O_{2\ (g)} \longrightarrow H_2O_{(g)}$ **$\Delta H_2 = -285.8$ Kj/mol^{-1}**

$C_2H_5OH_{\ (l)} + 3O_{2(g)} \longrightarrow 2CO_{2(g)} + 3H_2O_{(l)}$ **$\Delta H_3 = -1370$ Kj/mol^{-1}**

i) Define the term heat of formation. **(1mk)**

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ii) Calculate the heat of formation of ethanol. **(3mks)**

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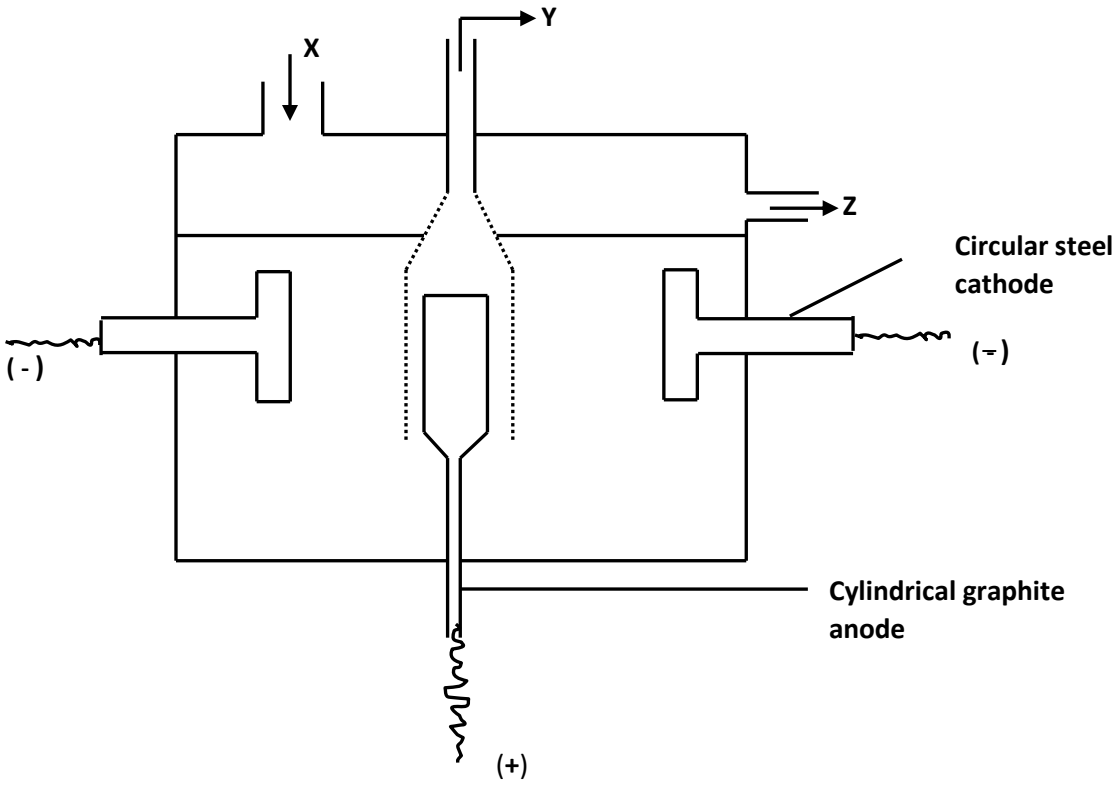
5.a) Sodium is extracted in the Downcell shown below.



i) Name Y. **(1mk)**

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ii) Down's cell must operate at high temperature of about 600°C. Explain. **(2mks)**

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iii) Explain why anode is made of graphite instead of steel though it's a better conductor. **(1mk)**

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iv) State the purpose of steel diaphragm. **(1mk)**

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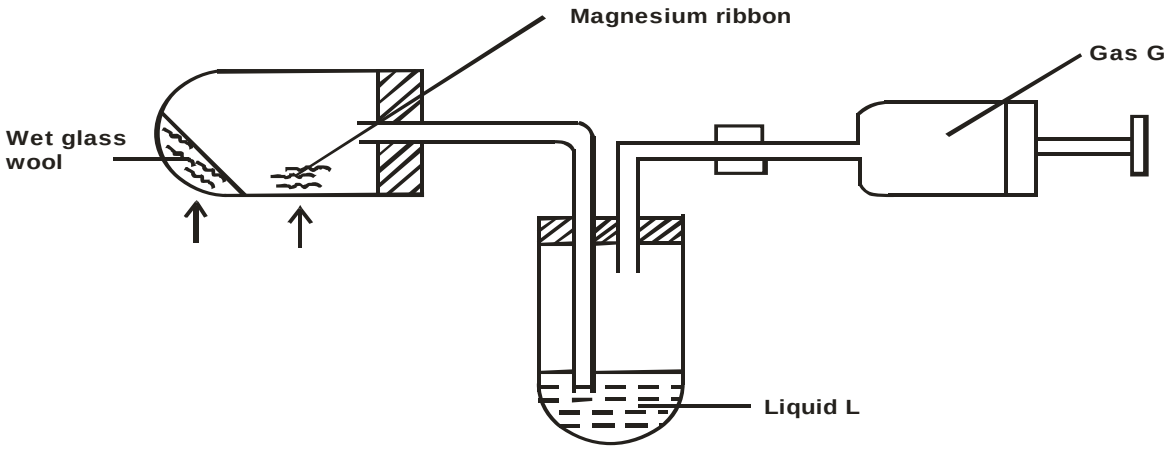
b) The set up below was used to prepare and collect dry sample of gas G. During the experiment, cleaned magnesium ribbon was strongly heated before heating the wet glass wool.



i) Why was the magnesium ribbon cleaned before it was used? **(1mk)**

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ii) State the observations that would be noted in the reaction tube. **(1mk)**

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iii) Name;

a) Gas G. **(1mk)**

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b) Suitable liquid L. **(1mk)**

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iv) Write equation of reaction in the reaction tube. (1 mark)

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6.I) Study the standard electrode potential below and answer the questions that follow.
The letters are not the actual symbols of the elements.

$M^{2+}_{(aq)} + 2e^- \longrightarrow M_{(s)}$ $E^\theta = -0.76V$

$N^{2+}_{(aq)} + 2e^- \longrightarrow N_{(s)}$ $E^\theta = -2.37V$

$2P^+ + 2e^- \longrightarrow 2P_{(s)}$ $E^\theta = +0.80V$

$R^{2+} + 2e^- \longrightarrow R_{(s)}$ $E^\theta = -0.14V$

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a) The standard electrode potential of Fe^{2+} is -0.44 volts. Select the element which would be best to protect iron from rusting. **(1mk)**

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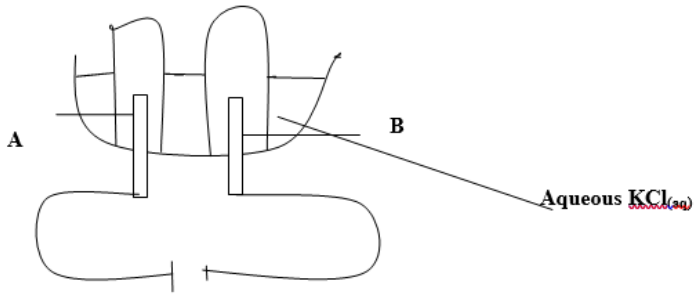
b) i) Calculate the E^{θ} value for cell represented as $M_{(s)} / M^{2+}_{(aq)} // P^{+}_{(aq)} + P_{(s)}$. **(2mks)**

ii) Draw the electrochemical cell represented in b(i) above. **(2mks)**

II) The diagram below represents an experiment by a student using electrodes A and B.



a) Name the products at the electrodes. **(1mk)**

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b) Write equation of reaction at each electrode. **(1mk)**

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III) During purification of copper by electrolysis, 1.48g of copper was deposited when a current was passed through aqueous copper (II) sulphate for 2½ hours. Calculate the amount of current that was passed. Cu = 63.5 and 1 Faraday = 96500C. **(3mks)**

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7.a) Define the term solubility. **(1mk)**

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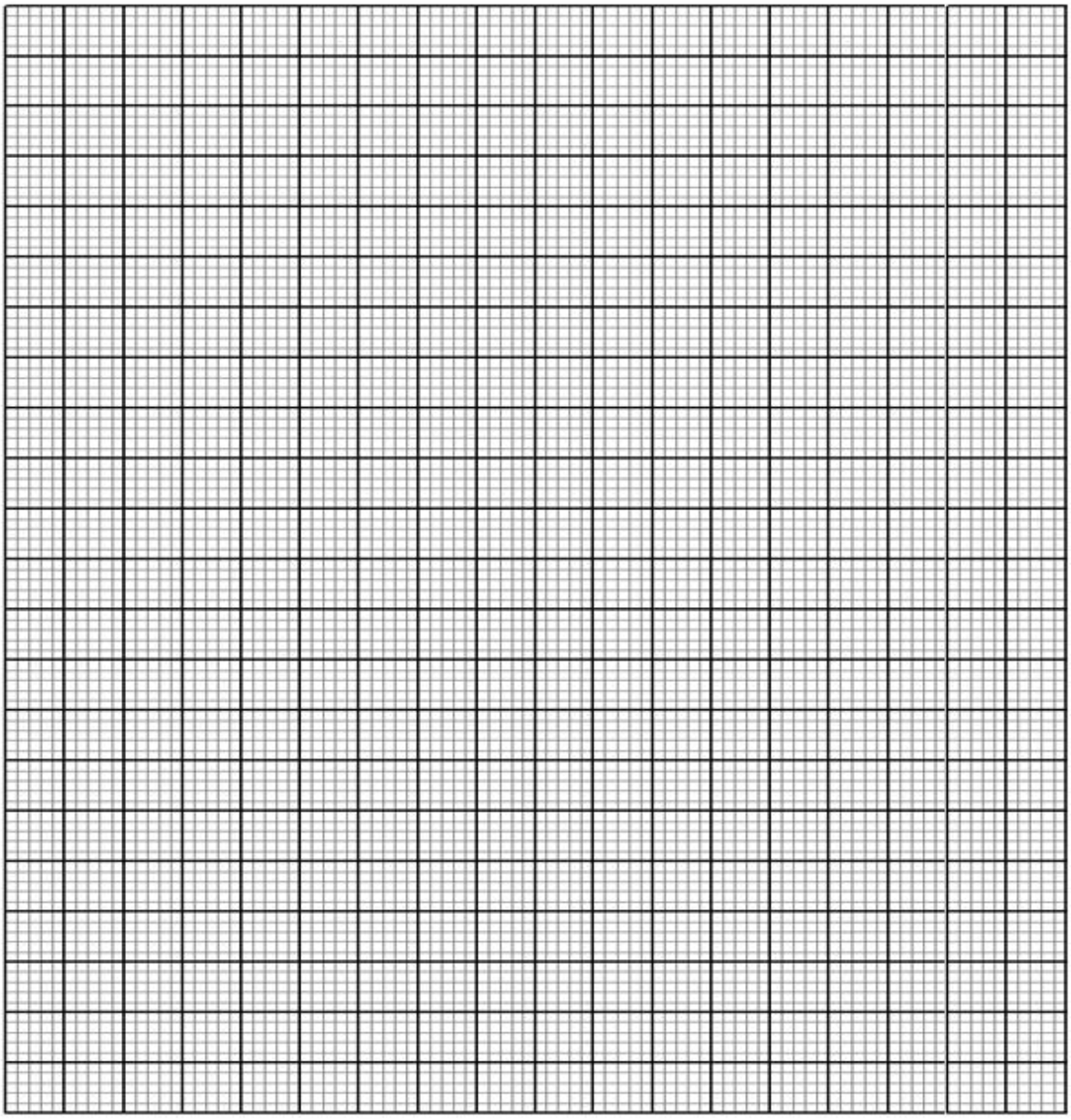
b) Study the table below and answer the questions that follow.

Temp ^oC	0	8	20	40	60	80
Solubility in g/100g of the H_2O	254	225	140	80	25	10

i) Plot a graph of solubility in g/100g of water of copper (II) sulphate against temperature. **(4mks)**



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ii) From the graph,

a) How does the solubility of Copper (II) sulphate vary with temperature? **(1mk)**

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b) Determine solubility of Copper (II) sulphate in g/100g water at 35°C. **(1mk)**

iii) If 30g of Copper (II) sulphate are dissolved in 100g of water at 30°C, is the resulting solution saturated, supersaturated or unsaturated. **(1mk)**

iv) A saturated solution of copper (II) sulphate is cooled from 70°C to 20°C.

a) Should the mass of copper (II) sulphate be reduced or increased for the solution to remain saturated.**(1mk)**

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b) Determine the mass in (iv) (a) above. **(2mks)**

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NAME: ……..…….

SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

233/3
CHEMISTRY
(PRACTICAL)
PAPER 3
TIME: $2^{1}/4$ HOURS

FORM FOUR

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

INSTRUCTIONS TO CANDIDATES

1.Write your name, admission number in the space provided.

2.Answer all the questions in the spaces provided

3.All working must be clearly shown where necessary.

4.You are not allowed to start working with the apparatus for the first 15 minutes. This time is to enable you read the question paper and make sure you have all the requirements.

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

FOR EXAMINERS USE ONLY

QUESTION	MARKS	CANDIDATES SCORE
1	24	
2	6	
3	10	
TOTAL	40	

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1. You are provided with:

- Magnesium ribbon solid E
- 2M hydrochloric acid, solution F
- 0.375M sodium hydroxide, solution H

You are required to determine

i) The rate of reaction between magnesium and hydrochloric acid

ii) The mass of 1cm length of magnesium ribbon

PROCEDURE 1

Step 1: Cut out five pieces of exactly 1cm length of magnesium ribbon solid E. Carefully fill the burette with solution F.

Step 2: Drain from the burette $10cm^3$ solution F into a test tube. Put one piece of magnesium ribbon into the tube and immediately start a stopwatch. Record the time taken for the magnesium ribbon to completely react.

Step 3: Transfer all the contents of the test tube into a 250ml volumetric flask. Rinse the test tube with distilled water and put in into the volumetric flask.

Step 4: Repeat step 2 and 3 by placing $9cm^3$ of solution F and $1cm^3$ of distilled water shake the contents before use. After each experiment transfer the mixture into the volumetric flask.

Repeat the procedure using contents in test tube 3, 4 and 5 as shown in the table below.

RETAIN THE SOLUTION IN THE VOLUMETRIC FLASK FOR USE IN PROCEDURE II

Table I

Test tube number	1	2	3	4	5
Volume of solution F(cm^3)	10	9	8	7	6
Volume of water added (cm^3)	0	1	2	3	4
Time taken (seconds)					
$\frac{1}{t}(sec^{-1})$					

(5mks)

a)i) Plot a graph of rate $\left(\frac{1}{t}\right)$, against volume of solution F. **(3mks)**

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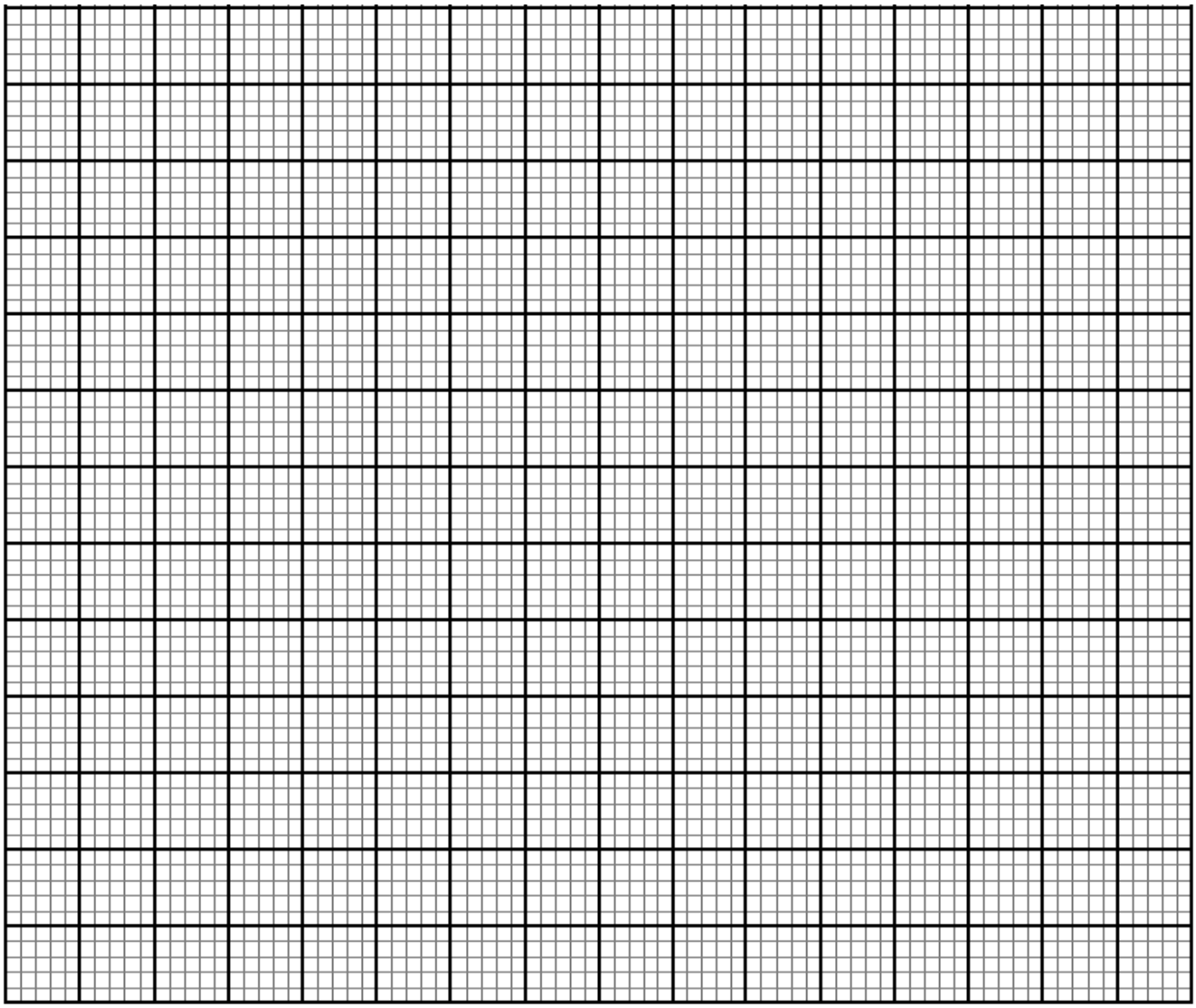

ii) Use the graph to determine the time taken for 1cm length of magnesium to dissolve if volume of water added is $1.5cm^3$. **(2mks)**

iii)a) In terms of rate of reaction, explain the shape of the graph **(2mks)**

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PROCEDURE II

Add distilled water into the solution in the 250ml volumetric flask up to the mark. Label it as solution G.

Clean the burette and fill it with Sodium hydroxide, solution H.

Pipette 25cm^3 of solution G into 250ml conical flask. Add 2 drop of phenolphthalein indicator and titrate it with solution H from the burette.

Record your results in table below

Table II

	I	II	III
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution H used (cm^3)			

(4mks)

b) Determine the

i) Average volume of solution H used. **(1mk)**

ii) Number of moles of hydrochloric acid in 250cm^3 of solution G. **(2mks)**

iii) Number of moles of hydrochloric acid solution F that reacted with solid E. **(2mks)**

iv) The mass of magnesium ribbon that reacted. (Mg=24). **(2mks)**

v) Mass of 1cm length magnesium ribbon. **(1mk)**

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2. You are provide with solid K. Carry out the following tests and record your observations and inferences in the spaces provided.

a) Place all solid K into a boiling tube. Add about $5cm^3$ of distilled water and shake the mixture.

Observation	**Inferences**
(1mk)	**(1mk)**

b) To about $2cm^3$ of the solution K , add half a spatula of sodium hydrogen carbonate.

Observation	**Inferences**
(½mk)	**(½mk)**

c) To the remaining solution K, add about $10cm^3$ of dilute hydrochloric acid. Shake thoroughly. Filter the mixture then wash the residue with distilled water. Dry the residue with filter paper.

i) Place one third of the residue into a test tube. Add about $10cm^3$ of distilled water and shake the mixture. Add half a spatula sodium hydrogen carbonate.

Observation	**Inferences**
(½mk)	**(½mk)**

ii) To the remaining residue add $5cm^3$ of distilled water then $5cm^3$ of sulphuric (VI) acid, followed by $5cm^3$ of ethanol and warm the mixture.

Observation	**Inferences**
(1mk)	**(1mk)**

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3. You are provided with solid L carry out the following test and record your observations and inferences in the space provided.

a) Place one third of the solid L in a dry test tube. Heat it and test any gas produced with blue and red litmus paper.

Observation	Inferences
(2mks)	**(1mk)**

b) Place the remaining solid L in a boiling tube. Add about $10cm^3$ of distilled water and shake. Divide the solution in to four portions.

i) To about $2cm^3$ of solution L add 2 drops of barium chloride solution

Observation	**Inferences**
(1mk)	**(1mk)**

ii) To about $2cm^3$of solution L add 5 drops of dilute hydrochloric acid

Observation	**Inferences**
(1mk)	**(½mk)**

iii) To $2cm^3$ of solution L add ammonia solution drop wise until in excess

Observation	**Inferences**
(1mk)	**(1mk)**

iv) To $2cm^3$ of solution L add sodium hydroxide drop wise until in excess

Observation	**Inferences**
(1mk)	**(½mk)**

THIS IS THE LAST PRINTED PAGE!

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NAME: ……..…….

SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

COMPUTER STUDIES -
451//1 (THEORY)
2 HOURS

Instruction to candidates

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

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

(c) This paper consists of **two** sections: **A** and **B**

(d) Answer all the questions in section **A**

(e) Answer question **16** and other **three** questions from section **B**

(f) **All** answers should be written in the spaces provided on the question paper.

(g) Do not remove any pages from this booklet.

(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	Question	Maximum Score	Candidate's Score
A	1-15	40	
	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
Total Score			

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SECTION A (40 Marks)

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

1.Give reasons why the following fire extinguishers are not recommended for use in the computer laboratory. **(2Mks)**

i. Liquid based

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ii. Powder based

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2.Differentiate between embedded and integrated computers **(2Mks)**

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3.Describe the following terminologies as used in reference to visual display unit. **(4Mks)**

a.Resolution

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b. Color depth

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4.Describe the following components of a spreadsheet: **(3Mks)**

a. Worksheet

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b. Database

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c. Graphs

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5.a. State two threats to data and information. **(1Mk)**

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b. List four types of risks posed by computer viruses to the computer systems. **(2Mks)**

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c. State two measures against unauthorized access. **(2Mks)**

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6.Automated production is an effect of ICT on employment, state three advantages of automated production. **(3Mks)**

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7.Describe the following terms used in reference to the CPU: **(3Mks)**

a. Fetch

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b. Decode

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c. Execute

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8.Explain three functions of an information system. **(3Mks)**

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9.Describe the following terms as used in system development: **(4Mks)**

i. Control

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ii. System entropy

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10. Define the term hot- swapping **(1Mk)**

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11. State two functions of the power supply unit **(2Mks)**

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12. Define peripheral device interfacing **(2Mks)**

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13. Explain the following terms as used in the word processing. **(2Mks)**

i. Footnote

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ii. Endnote

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14. a) Explain a situation when each of the following Desktop Publishing programs features may be used when creating a document **(2mks)**

(i) Crop

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(ii) Transparency

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15. Name any two types of non-printable guides in DTP. **(2Mks)**

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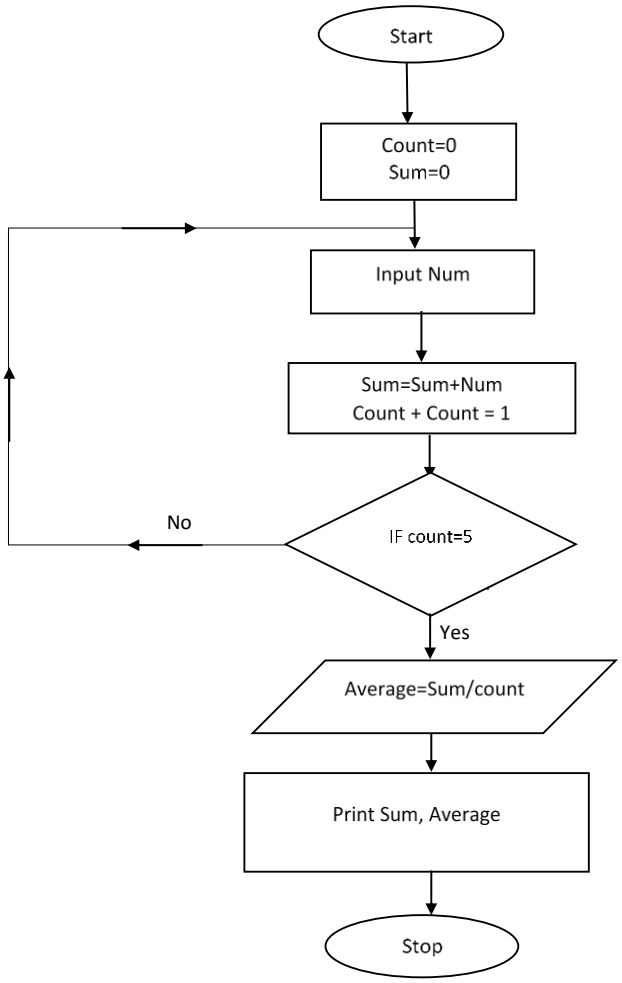
SECTION B (60 Marks)

*Answer question **16** and any other **three** questions in this section in the spaces provided*

16. A program is expected to accept 10 numbers calculate their sum and average and produce the output. Below is a flowchart that was used by KASSU students to represent the program. Study the flowchart below and answer the questions that follow:



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a) The flowchart has errors in it. Identify any four errors that were made in the flowchart stating how each of them should be corrected. **(4mks)**

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b) Write a pseudocode for the corrected version of the above flowchart. **(7mks)**

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c)i) Give any two examples of fourth generation languages. **(2Mks)**

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ii) List two factors that need to be considered when selecting a programming language. **(2mks)**

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17. a) Outline two disadvantages of questionnaires as a data gathering techniques. **(2mks)**

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b) State three activities that take place during system implementation phase of SDLC. **(3mks)**

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c) Define the term Feasibility study as used in system development. **(1mk)**

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d.Perform the following conversions

i. Convert 111.010_2 to decimal number. **(3mks)**

ii. **$17^4/_5$ (base 10)to binary** **(3mks)**

iii. Distinguish between BCD and EBCDIC coding schemes **(2mks)**

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e. Give two reasons why a firm may decide to computerize its operations **(1mk)**

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18. a. Describe the following data types as used in spreadsheet. **(4Mks)**

i.Labels

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ii.Values

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iii.Formulas

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iv.Range

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b. Differentiate between logical files and physical files. **(4Mks)**

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c.i. Define serial file organization **(1Mk)**

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ii. Name any two disadvantages of serial file organization **(2Mks)**

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d. Give two advantages of using a template in a word processor **(2Mks)**

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e. State two components found in an electronic Point-of-sale terminal. **(2Mks)**

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19.a. Describe the following types of software **(3Mks)**

i. Proprietary software

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ii. Shareware

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iii. Freeware

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b. i, Define the term deadlock as used in operating system. **(1Mk)**

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ii. The diagram shows five operating system functions and five descriptions. Draw a line between each operating system function and its description. **(4mks)**

Function	Description
Interrupt	Many processes appear to run simultaneously
Utility	Data are temporarily held in a buffer waiting for an output device to access it
Memory Management	A signal that causes the operating system to take a specified action
Spooling	A program that performs a specific task required for the operation of a computer
Multitasking	A process of assigning blocks of memory to programs running in a computer

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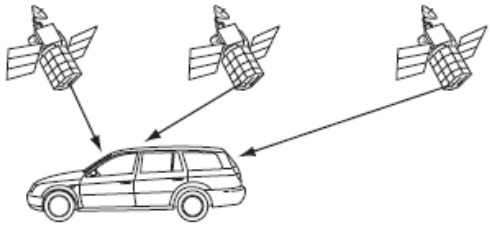
c. Satellite navigation systems are used to give the vehicle driver directions.



i. How does the system know the exact position of the vehicle? **(3Mks)**

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ii. Give two advantages to the driver using this system. **(2Mks)**

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iii. Give two problems associated with satellite navigation systems. **(2Mks)**

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20.a. Define the following terms

i. Trouble shooting **(2Mks)**

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ii. Installation

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b. Describe any two types of files used in operating systems. **(2Mks)**

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c. A database table, DEVICE, has been set up to record the electronic equipment used in a small business

Device ID	Device Type	User	Purchase Date	Purchase Price ($)	Portable
3	Desktop	Alan Swales	14/02/2017	1350.00	N
4	Laptop	Chantel Law	01/02/2016	1460.00	Y
5	Tablet	Abdula Saud	31/12/2016	1000.00	Y
6	Desktop	Abdula Saud	14/03/2017	1000.00	N
7	Laptop	Alan Swales	15/03/2016	1700.00	Y
8	Tablet	Taona Jaji	16/12/2016	470.00	Y

(a) The query-by-example grid below selects certain records.

Field:	User	Portable	Purchase Price ($)
Table:	DEVICE	DEVICE	DEVICE
Sort:	Ascending		
Show:	✓	☐	☐
Criteria:		Y	>1000
or:			

Show what would be the output from the query-by-example. **(2Mks)**

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(b) Complete the query-by-example grid below to select all Desktop devices that were either purchased before 31/12/2016 or cost under $1000. Only show the Device ID and Device Type. **(5Mks)**

Field:	Device ID	Device Type	Purchase Date	Purchase Price
Table:	DEVICE	DEVICE	DEVICE	DEVICE
Sort:				
Show:				
Criteria:				
Or:				

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c. Differentiate between a primary key and an index key **(2Mks)**

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d. State the title of the ICT personnel in charge of regularly updating the organization's website. **(1Mk)**

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e. What program is the personnel above likely to use to accomplish his tasks? **(1Mk)**

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

451/2
COMPUTER STUDIES
Paper 2
(PRACTICAL)
June 2023
2 ½ hours

Instructions to candidates

(a) Indicate your name and index number at the top right hand corner of each printout

(b) Write your name and index number on the CD/Removable storage medium provided.

(c) Write the name and version of the software used for each question attempted in the answer sheet provided

(d) Answer all the questions

(e) All questions carry equal marks

(f) Passwords should NOT be used while saving in the CD/Removable storage medium

(g) All answers must be saved in your CD/Removable storage medium

(h) Make a printout of the answers on the answer sheet

(i) Arrange your printouts and tie/staple them together

(j) Hand in all the printouts and the CD/Removable storage medium used

(k) This paper consist of 5 printed pages

(l) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that o questions are missing

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QUESTION ONE



What Is Artificial Intelligence?

Artificial Intelligence is the field of developing computers and robots that are capable of behaving in ways that both mimic and go beyond human capabilities. AI-enabled programs can analyze and contextualize data to provide information or automatically trigger actions without human interference.

What Is Machine Learning?

Machine learning is a pathway to artificial intelligence. This subcategory of AI uses algorithms to automatically learn insights and recognize patterns from data, applying that learning to make increasingly better decisions. By studying and experimenting with machine learning, programmers test the limits of how much they can improve the perception, cognition, and action of a computer system.

Deep learning, an advanced method of machine learning, goes a step further. Deep learning models use large neural networks — networks that function like a human brain to logically analyze data — to learn complex patterns and make predictions independent of human input.

How Companies Use AI and Machine Learning

To be successful in nearly any industry, organizations must be able to transform their data into actionable insight. Artificial Intelligence and machine learning give organizations the advantage of automating a variety of manual processes involving data and decision making. Some expressions including basic numbers like squares of numbers e.g 23^2 and base value of numbers like $H4C_{16}$ can be processed.

By incorporating AI and machine learning into their systems and strategic plans, leaders can understand and act on data-driven insights with greater speed and efficiency. The table below shows the company's per country that have implemented AI and machine language and the expected growth rate in five years time.

Country	NO. of AI machines	% growth	Increment per year
Kenya	50	5%	
Uganda	45	4.5%	
Tanzania	48	3%	
Zimbabwe	30	3%	
somalia	25	2%	

a) Using a word processor application, create the above document as it appears and save it as **KASU 1 exam** **13mks**

b) Insert the AutoShape as it appears **2mks**

c) Spell check your document **1mk**

d) Copy the above document into a new word document and save it as **Kasu Final exam** **3mks**

e) Format all the titles in the document as follows:

i. Font type Aerial **1mk**

ii. Font size 14.5 **1mk**

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iii. Font colour Black, text 1 **1mk**

iv. Double underline **1mk**

v. Bold italic **1mk**

vi. Character spacing Expanded 150% **2mks**

f) Insert a dropped drop cap to 2 lines in the first paragraph starting with the word "artificial intelligence" and in margin drop cap to 2 lines in the second paragraph starting with the word "machine learning" **2mks**

g) Find the abbreviation AI and replace it with artificial intelligence **2mks**

h) Insert two columns in the 2nd last paragraph starting with "to be successful" with a line in between them **2mks**

i) Format the titles in the table as follows:

i. Centre align all the titles **1mk**

ii. Change the text direction of the titles on the table to 90^0 **1mk**

iii. Double strike through **1mk**

iv. Bold **1mk**

j) Enter a formular to get the yearly increament for Kenya **2mks**

k) Enter a formula to calculate the total NO. of AI machines in the five countries above **2mks**

l) Insert a row above row one, merge all the cells and enter an appropriate title for the table **3mks**

m) Insert the header of your document as © **your name** and footer as your **class and admission number** **2mks**

n) Insert a caption with the title Artificial intelligence in East Africa **2mks**

o) Print KASU1 exam and Kasu Final exam **2mks**

QUESTION TWO

The table below shows a soccer league at the end of the season. The league comprises of 15 teams and each played 29 matches to close the season. Using a spread sheet program, represent the data and answer the questions below:

TEAM	COUNTY	MATCHES PLAYED	MATCHES WON	MATCHES DRAWN	MATCHES LOST	POINTS	TEAM POSITION	TEAM AWARDS
SHIRA FC	NORTH	29	10	16				
SATIMA FC	SOUTH	29	6	20				
NANGA FC	EAST	29	17	5				
LOGAN FC	NORTH	29	5	15				
KILIMANJARO	EAST	29	10	11				
KILIMAMBOGO	WEST	29	20	2				
KARISIMBI	WEST	29	4	19				
KAMET UNITED	WEST	29	8	20				
GESSI	SOUTH	29	12	7				
FUJI FC	SOUTH	29	14	9				
EVEREST AC	EAST	29	11	7				
EMIN FC	EAST	29	8	3				
ELGON	EAST	29	28	1				
BROAD PEAK	WEST	29	22	6				
ATLAS UNITED	WEST	29	15	9				

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a. Create a workbook called ***LEAGUE_RESULTS*** **(1Mk)**

b. Using a customised ***INPUT FORM***, enter the following data into a worksheet and format it exactly as it appears. **(10Mks)**

c. Set data validation criteria to ensure that matches won, drawn or lost do not exceed 29. A message ***"INCORRECT!"*** should be displayed in case the validation rule is violated. **(4Mks)**

d. d. Rename the worksheet as ***LeagueTable*** **(2Mks)**

e. Given that the total number of games played by each team in the season is 29, determine the number of games lost by each team. **(2Mks)**

f. Calculate the points obtained by each team during the season given that: - **(3Mks)**

Results	Points
Win	3
Draw	1
Loss	0

g. Determine each team's position in the league given that the team with the highest number of points becomes the first position in the league. **(4Mks)**

h. Determine the number of teams that garnered above 55 points in the league. Label the cell appropriately. **(3Mks)**

i. Given that teams get cash awards based on their positions according to the table below.
Apply an appropriate formula to determine the team awards. **(4Mks)**

Team Position	Team Award
1	$ 1,000,000
2	$ 500,000
3	$ 250,000
4	$ 125,000
Others	$ 0

j. Sort the data in ascending order by ***Team Position.*** **(1Mk)**

k. Copy the worksheet ***LeagueTable*** to a new worksheet and rename it as ***CountyTeams*** **(1Mk)**

l. Using S*ubTotals* function in ***CountyTeams*** worksheet, determine the Average Points of all the teams in each county **(5Mks)**

m. Using worksheet ***LeagueTable*** plot a column graph on its own worksheet renamed as ***LeagueAnalysis*** showing the TeamName and TeamPoints only. **(7Mks)**

n. Print the following: **(3Mks)**

i)Formulas only in ***LeagueTable*** worksheet

ii)*CountyTeams* worksheet

iii)*LeagueAnalysis* worksheet

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NAME: ……..…….

SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

313/1

C.R.E

PAPER 1

FORM FOUR

2 ½ HOURS

Instructions to candidates

*a.Answer **any five** questions.*

*b.Each question carries **20** marks*

*c.**This paper consists of 2 printed pages.***

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

*e.**Candidates should answer the questions in English.***

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1(a) Identify the languages in which the Bible was written before the coming of missionaries. **(5mks)**

(b) Outline **8** reasons why christians read the bible. **(8mks)**

(c) Identify **seven** versions of the bible used by the church in Kenya today. **(7mks)**

2(a) Describe the background to the call of Abraham. **(7mks)**

(b) What are the values expressed in the call of Abraham. **(7mks)**

(c) State **6** factors that hinder christians from practising their faith in God. **(6mks)**

3(a) Outline 6 ways in which Solomon turned away from the covenant way of life. **(6mks)**

(b) Explain the importance of the temple of Israel. **(7mks)**

(c) Identify **7** lessons that modern political leaders in Kenya can learn from king Solomon**.** **(7mks)**

4(a) Outline the importance of prophets in Israel. **(7mks)**

(b) Identify the social injustices condemned by prophet Amos. **(7mks)**

(c) How does the church in Kenya punish errant members **(6mks)**

5(a) Describe Jeremiah's vision of Almond tree. **(6mks)**

(b) What lessons do christians learn about God from the call of Jeremiah. **(7mks)**

(c) Outline problems encountered by christians in their commitment to Christ**.** **(7mks)**

6(a) State six requirements that one had to fulfill to be made an elder in traditional African society.

(6mks)

(b) Highlight factors that have brought changes in African traditional community. **(8mks)**

(c) What changes are there in the traditional African community worship today? **(6mks)**

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NAME: ……..…….

SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

313/2
CRE
PAPER 2
FORM FOUR
$2^{1}/_{2}$ HOURS

Instructions to candidates

a. This paper consists of **six** questions.

b. Answer **any five** questions.

c. Each question carries **20** marks

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

e. Candidates should answer the questions in English.

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1 a) Outline the psalmist's prophecy about the Messiah**.** **(6mks)**

b) Outline Mary's song (magnificat) . **(7mks)**

c) What evidence in St. Luke's Gospel show that Christ came from a poor family. **(7mks)**

2. a) Identify the instructions given to the 72 disciples of Jesus. **(8mks)**

b) State the teachings of Jesus on how a Christian should approach God in prayer. **(7mks)**

c) Identify ways in which Christians prepare for the coming of Gods kingdom. **(5mks)**

3. a) Outline the events that took place on Mt. Olives before the arrest of Jesus. **(8mks)**

b) Identify reasons why Judas Iscariot betrayed Jesus. **(7mks)**

c) Give the evidence from St. Luke's Gospel that proves Jesus resurrected. **(6mks)**

4. a) Explain what the teaching of Jesus about the vine and the branches in John15:1-10 reveal about the unity of believers . **(8mks)**

b) Identify activities of the church which show that the Holy Spirit is at work in the church. **(7mks)**

c) State leadership qualities shown by Peter the apostle on the day of Pentecost. **(5mks)**

5. a) State reasons why an employee should be given time to rest. **(8mks)**

b) Show how retirement of workers affects their families. **(7mks)**

c) Identify the factors that have contributed to misuse of leisure. **(5mks)**

6.a) Describe how wealth was acquired in Traditional African Communities. **(7mks)**

b) Why do some Christians find it difficult to share their wealth with others? **(7mks)**

c) State the rights of a Kenyan citizen. **(6mks)**

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

101/1
ENGLISH
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- Answer ***all*** the questions in this question paper.
- All answers must be written in spaces provided
- Answer all questions in English.

FOR EXAMINERS USE ONLY

Question	Maximum score	Candidate's score
1.Functional writing	20	
2Cloze Text	10	
3Oral skills	30	
Total score	60	

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FUNCTIONAL WRITING **(20marks)**

a) Imagine that you are the captain of your school. You fall sick and have to go home for three days to seek medical attention. Write instructions to your assistant telling him or her six things you would like done while you are away. **(12mks)**

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b) Once you come back to school, you find all the instructions were followed to the latter. Write a thank you note to your assistant. **(8mks)**

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CLOZE TEST **(10 MARKS)**

Fill in each blank space in the following passage with the most appropriate word.

In (**1**)**…….**to pass examinations well, one needs to **(2)……..……...**a good foundation from the beginning. Revising **(3)…….……** for the examinations requires you to actually study and (**4)……**your facts rather than memorizing them**.(5)……**of the main problems that **(6)……..…..**students face is anxiety. A little bit of anxiety before examinations is okay but too much **(7)……..……**detrimental .Excess anxiety may come from **(8)…….……**understanding the crucial points in a topic before moving **(9)…….……** to the next. When students simply gloss **(10)……..……**facts, they fail to understand them and therefore they get mixed up or confused before examinations.

3 ORAL SKILLS (30mks)

(a) Read the poem below and answer the questions that follow.

I wonder by the edge
Of this desolate lake
Where wind cries in the sledge
Until the axle break
That keeps the stars in their round
And hands hurt in the deep
The banners of east and west
And the girdle of light is unbound,
Your breast will not lie by the breast
Of your beloved in sleep

(i) Describe the rhyme scheme of the poem. **(2mks)**

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(ii) Identify and illustrate any two sound pattern used in the poem **(4mks)**

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(iii) How would you say the last two lines of the poem? (2mks)

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(iv) Give homophones for the following words used in the poem **(2mks)**

Wonde**r** ……

Break……

(b) Underline the word that is said differently from the sets of words given below. **(4mks)**

(i) Fairy ferry furry

(ii) Floor flower flour

(iii) Pear pare peer

(iv) Canal kernel colonel

c) Study the genre below and answer the questions that follow. **(6mks)**

The short child shot a shot of his short white wash.

(i) Classify the genre. **(2mks)**

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(ii) Identify any sound pattern used in the genre above. **(2mks)**

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(iii) State two functions of the genre above. **(2mks)**

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SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

101/2
ENGLISH
FORM FOUR
PAPER 2
TIME: 2 ½ HOURS

Instructions to candidates

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

For Examiner's Use Only

Question	Maximum Score	Candidate's score
Comprehension	20	
Excerpt	25	
Oral literature	20	
Grammar	15	
MARKS	TOTAL 80	

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Comprehension (20 Marks)

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

Drugs: So what are you curious about?

This, my friend, is about you, and it is about me. It is about every sensible man or woman who has not gone down the drain. And, believe you me, many have gone down the drain. Who have gone down the drain, you may wonder, and which drain? Just think for a moment.

Diego Maradona, one of the most talented footballers of all time, turned out in his later years to be a human wreck, continuously in and out of drug rehabilitation centers. Another famous sportsman who ended up in disgrace is Canadian sprinter Ben Johnson. He won a gold medal and set a world record in the 100-metre sprint at the 1988 Olympic Games in Seoul. But it was soon discovered that he had been using banned drugs. He was stripped of his gold medal, his record was erased from the books and he was eventually banned from competitive athletics for life.

First star Marilyn Monroe was in her time considered to be the most beautiful woman in Hollywood. One day she was found dead in her apartment, having taken an overdose of drugs called barbiturates. Elvis Presley, one of the greatest performers in the history of rock music, died of an overdose of drugs. In addition, Whitney Houston, an American singer and artist, accidentally drowned in a bathtub after suspected cocaine abuse in 2012. These are famous people who have gone down the drain of drug addiction and substance abuse.

Now, of course, we get to hear of these people's tales of woe because they are famous and high-profile victims. However, there are millions of us ordinary people who are at risk. We all know of alcoholic wrecks in our villages and estates or, even sadly, within our own families. We know of bhang junkies roaming our streets looking like demented ghosts. We may have khat-chewing neighbors whose jaws are in constant grinding motion, like goats chewing the cud. A recent school survey revealed that thousands of secondary school students in Kenya are drug addicts! Some time back, it was discovered that a kiosk owner in an upmarket Nairobi suburb was selling marijuana to pupils in a primary school next to his kiosk. The problem is right here with us and the first thing we need to do is to admit that it does exist.

How does this problem start? Why do perfectly intelligent and normal people, many of them highly educated and specially talented, get themselves into this mess? The reasons can be summed up in three words. Since they all happen to begin with the letter 'c', we shall call them the 'three Cs'. These are company, curiosity and coping.

"Oh, come on, be a sport!" This is the commonest bait our so-called friends use to lure us into drug abuse and substance abuse. It is also called peer pressure. The **depraved** group may be puffing away at 'grass' cigarettes or knocking back tots of *chang'aa* behind the school hedge, and they invite you to join them- for company of course. If you hesitate, they start teasing you, calling you a coward, a 'softie', a spoilsport and all sorts of names. After all, they will tell you, everybody is doing it. If you eventually give in- mostly because you don't want to be the odd girl or odd boy out- and take your first puff at a marijuana fag or down a tot of *chang'aa*, there will be a tremendous cheer from that demented crowd of your 'friends'.

Don't be deceived. They are not cheering you. They are only congratulating themselves on having pulled down to their level one more **pretentious**, self-righteous little snob who thought he or she was an angel. No one is going to pay any more attention to you once you're down there, groveling in substance abuse. The rest is your *shauri.* So, next time anyone tries to tell you that you should indulge in drug, tobacco or alcohol consumption because

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'everyone is doing it' , tell them that you will not do it, for the very good reason that you are not everybody. You are you, and you want your mind, your life and your future to remain clean.

Nor should you succumb to curiosity. A lot of young people fall into the drug and substance abuse trap simply because they want to find out what it feels like to be 'high' on these things. They use the impressive sounding euphemism, 'experience'. The truth of the matter is that being drunk or being intoxicated with drugs is not a worthwhile experience. We have all seen drunks and we know how disgustingly they behave. Why should anyone want to go staggering along the streets, slobbering, vomiting or even peeing on themselves, among a host of other silly kinds of behavior, in the name of experience?

How many people have, in a state of drunkenness, done things or got themselves into situations which they have lived to regret for the rest of their lives? Some people have committed murder, others have maimed themselves in road accidents while others have found themselves pregnant or infected with HIV after engaging in drunken orgies. These surely are not experiences to be particularly curious about!

The worst part of this 'experience' of drug consumption is that it is addictive. Once you start the habit, it becomes more difficult to abandon. Addicts become so dependent on these substances that they will do anything in order to get hold of them to satisfy their craving. Many young people drift into crime in order to get money to buy heroin or cocaine. Some even take to prostitution. A drug or alcohol addict simply must have his or her 'fix'.

The saddest group of addicts comprises those who start on these poisons in the false belief that the drugs will help them to cope with life. There are people who are naturally shy. Others are in competitive sport. Yet others are performers in fields such as drama and music. Such people are sometimes deceived into believing that consuming substances like alcohol or the so-called 'performance-enhancing drugs' will make them 'brave' and strong. Indeed, some drugs boost physical power, as in the case of Ben Johnson. That is cheating and sports authorities crack down very hard on such behavior. As for musicians and other performers, drugs are no good at all. Artistic performance requires control and discipline. Since drugs invariably weaken a person's power of judgment, a drugged artist's performance can hardly be expected to be satisfactory.

Moreover, all these substances are poisonous. They harm and ruin the bodies and minds of those who use them. The damage may not be immediately noticeable but drugs users invariably end up as human wrecks. The more the performers take to drugs, the sadder their world becomes, littered with ruined talents, broken relationships and, at times, suicide.

Those of us who are not hooked on drugs should struggle to remain clean. For those who are may have started consuming those dangerous substances, the time to stop is NOW!

Questions

1.What does 'to go down the drain' mean? **(1Mk)**

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2.Why do we get to hear of the drug problems of people like Diego Maradona, Ben Johnson and Elvis Presley? **(1Mk)**

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3.Name three substances easily abused by ordinary people. **(3Mks)**

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4.Why are addicts happy when a new person joins them? **(1Mk)**

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5.What can one do to avoid getting influenced by friends to take drugs? **(2Mks)**

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6.Which embarrassing behaviors results from drug abuse? **(2Mks)**

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7.Why is addiction said to be the worst 'experience' of drug consumption? **(2Mks)**

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8.What three situations in life can make people turn to drugs for solutions? **(3Mks)**

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9.Which of the three attractions – company, curiosity and coping- do you think affects the youth most? Why? **(2Mks)**

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10. 'Nor should you succumb to curiosity.' Rewrite beginning: You …. (Do not change the meaning.) **(1Mk)**

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11. Explain the meaning of the following words as used in the passage. **(2Mks)**

(i) Pretentious……

(ii) Depraved……

2.Read the excerpt below and answer the questions that follow. (25 Mks) A Doll's House.

Mrs Linde **:** *(smiles sadly and strokes her hair)* It sometimes happens, Nora.

Nora **:** So you're quite alone. How dreadfully sad that must be. I have three lovely children. You can't see them just now, for they are out with their nurse. But now you must tell me all about it.

Mrs Linde **:** No, you must begin. I mustn't be selfish today; today I must only think of you're affairs. But there is one thing I must tell you. Do you know we have just had a great piece of good luck?

Mrs Linde **:** No, what is it?

Nora **:** Just fancy, my husband has been made manager of the bank!

Mrs Linde **:** Your husband? What good luck!

Nora **:** Yes, tremendous! A barrister's profession is such an uncertain thing, especially if he won't undertake unsavory cases; and naturally Torvald has never been willing to do that, and I quite agree with him. You may imagine how pleased we are! He is to take up his work in the bank at the New Year, and then he will have a big salary and lots of commissions. For the future we can live quite differently- we can do just as we like. I feel so relieved and so happy, Christine! It will be splendid to have heaps of money and not need to have an anxiety, won't it?

Mrs Linde **:** Yes, anyhow I think it would be delightful to have what one needs.

Nora **:** No, not only what one needs, but heaps and heaps of money.

Mrs Linde **:** *(smiling)* Nora, Nora, haven't you learned sense yet? In our school days, you were a great spendthrift.

Nora **:** *(laughing)* Yes, that is what Torvald says now (wags her finger at her). But "Nora, Nora" is not so silly as you think. We have not been in a position for me to waste money. We have both had to work .

Mrs Linde **:**You too?

Nora **:** Yes; odds and ends, needlework, crotchet-work, embroidery, and that kind of thing. *(dropping her voice)* And other things and well. You know Torvald left his office when we were married?

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There was no prospect of promotion there, and he had to try and earn more than before. But during the first year he overworked himself dreadfully. You see he had to make money every way he could, and he worked early and late; but he couldn't stand it, and he fell dreadfully ill, and the doctors said it was necessary for him to go south.

Mrs Linde **:** You spent a whole year in Italy, didn't you?

Questions

1.What does Mrs Linde refer to when she says, "It sometimes happens, Nora"? **(3Mks)**

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2.Identify any two stylistic devices used in the extract and state their effectiveness. **(4Mks)**

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3. "But 'Nora, Nora' is not so silly as you think." What proves that Nora has not been as silly as she was thought to be by many? Refer to elsewhere in the novel. **(3Mks)**

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4.Identify and explain the dominant theme in the excerpt. **(2Mks)**

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5.What character traits of Nora and Mrs Linde are brought out in the excerpt? **(4Mks)**

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6.Why did the family spend a whole year in Italy? **(1Mk)**

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7.So, you are quite alone. (Add a question tag) **(1Mk)**

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8.What is the meaning of the following words as used in the excerpt? **(3Mks)**

a) Barrister……..

b) Dreadfully……

c) Necessary……

3.Oral literature

Read the oral piece below and answer the questions that follow. (20 Mks)

Blood iron and trumpets
Blood iron and trumpets
Forward we march
(Others fall on the way)
Blood iron and trumpets
We shall hack kill and cure
Blood iron and trumpets
Singers of the datsun blue
Forward we drove breaking the records
Blood iron and trumpets
Let bullets find their targets and the earth be softened
Blood iron and trumpets
Let the dogs of war rejoice
And the carrion birds feed
We are reducing population explosion
Blood iron and trumpet
The uniformed machines are around
Put on your helmet iron and rest
Blood iron and trumpets
Only through fire can be baptized to mean business
So once again
Blood iron and trumpets

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We shall always march along
Blood iron and trumpets
Blood iron and trumpets
Blood alone

Questions

1.With reasons, classify the above oral piece. **(2Mks)**

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2.Identify the functions of the above oral piece. **(2Mks)**

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3.Identify and illustrate two features of oral poetry evident in the above oral item. **(4Mks)**

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4.Briefly explain any two issues that the above oral poem is talking about. **(4Mks)**

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5.Identify one social and one economic activity of the community from which the oral poem is taken. **(2Mks)**

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6.Who would be the most suitable audience for the oral poem? Give reasons for your answer. **(2Mks)**

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7. "The uniformed machines are around" Give the meaning of this statement. **(2Mks)**

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8.What is the mood of the poem? **(2Mks)**

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4.GRAMMAR **(15 MKS)**

1.*Rewrite the following sentences according to the instructions given after each. Do not change the meaning*. **(3Mks)**

(i) We would have not succeeded if James had not helped us.
(Begin: Were…….)

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(ii) You should not leave your house unlocked at any time. (Begin: …….)

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(iii) If we had more time, we would have stayed there. (Begin: Had……...)

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2.Fill in the blanks with the correct preposition. **(3Mks)**

(i) Jane has a special liking **……..**Mathematics.

(ii) Her performance was amazing**……**any standards.

(iii)Since he no longer runs the business, he has been reduced **……**begging.

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3.*Use the words in brackets to complete the following sentences with the most appropriate phrasal verb.* (3Mks)

(i) The new students could not ……their way to the dormitory. (make)

(ii) The man agreed to……the role of the manager. (take)

(iii) It is not easy to ……..a debt of more than one thousand shillings. (write)

4.Fill in the blank spaces with the correct forms of the words given in brackets. (4 Mks)

(i) She may consider helping the orphan on **……** (human) grounds.

(ii) Ndeko still wants more food even after clearing a whole plateful of Ugali. His appetite is simply **……..**(satisfy)

(iii) His **……..**(mediocre) can only be compared to that of his great grandfather.

(iv) After the inferno, the Roche's had to buy new **……** (furnish) for their house.

5.*Appropriately punctuate the following sentences to indicate parenthesis.* **(2Mks)**

(i) When we meet next and I am not sure when a lot of things will have changed.

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(ii) Any information you have including minor details should be submitted to the office.

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SUCCESS IN YOUR EXAM!!!

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

101/3
ENGLISH
PAPER 3

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

Instructions to candidates

a. Question **one** and **two** are compulsory.
b. Select one question from the optional set texts.
c. Where a candidate presents work on more than one optional text, only the first to appear will be marked.
d. Each of your essays must not exceed **450** words.
e. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
f. Candidates should answer the questions in English.

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a) <u>IMAGINATIVE COMPOSITION (COMPULSORY)</u>

Either

i) Write a story ending with the following words. **(20Mks)**

..... when I look back at the events of that day, I thank God that I am still alive

Or

ii) Write a composition to illustrate the saying
"Honesty is the best policy." **(20Mks)**

2. Compulsory Set Text **(20mks)**

<u>Blossoms of the Savannah</u> by **H.R. Ole Kulet**

"Women empowerment is something that can be best achieved by women themselves." Write an essay that examines the role of women in their own liberation basing your arguments on the novel.

3. **OPTIONAL SET TEXTS.**

Either;

a) A silent song and other stories, **(20mks)**

People with admirable traits stand out. Basing your illustrations on Vrenika Pather'S Ninema,write an essay to validate this assertion.

Or

b) "Inheritance" by David Mulwa. **(20mks)**

Ordinary citizens are the ones who bear the blunt of poor leadership. Write an essay showing the truth of this statement while closely referring to the events in 'inheritance' by David Mulwa.

Or

c) An artist of the floating world by Ishiguru. **(20mks)**

Discuss the use of Noriko's marriage negotiation as a means to drive this novel's plot forward while revealing Ono's past.

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

312/1
GEOGRAPHY
PAPER ONE
TIME: 2 ¾ Hours

INSTRUCTION

a.) This paper consists of two section **A** and **B**

b.) Answer all section in the section **A**

c.) Answer question **6** and any other **two** questions from section **B**

d.) Answers **must** be written in the spaces provided at the end of question 5

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

f) Candidates should answer all questions in English

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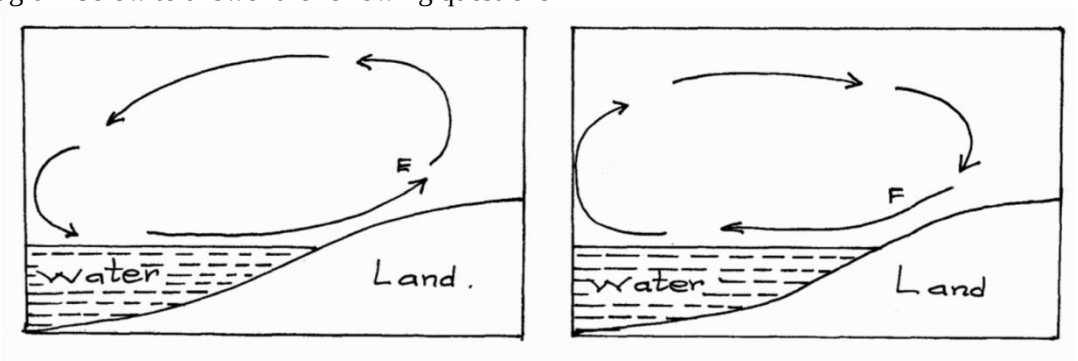
SECTION A

ANSWER ALL QUESTIONS IN THIS SECTION

1.a) Define the term Geography **(2mks)**

b) What is the relationship between Geography and Biology **(2mks)**

2.a) Use the diagram below to answer the following questions



i) Name the air currents marked E. **(1mk)**

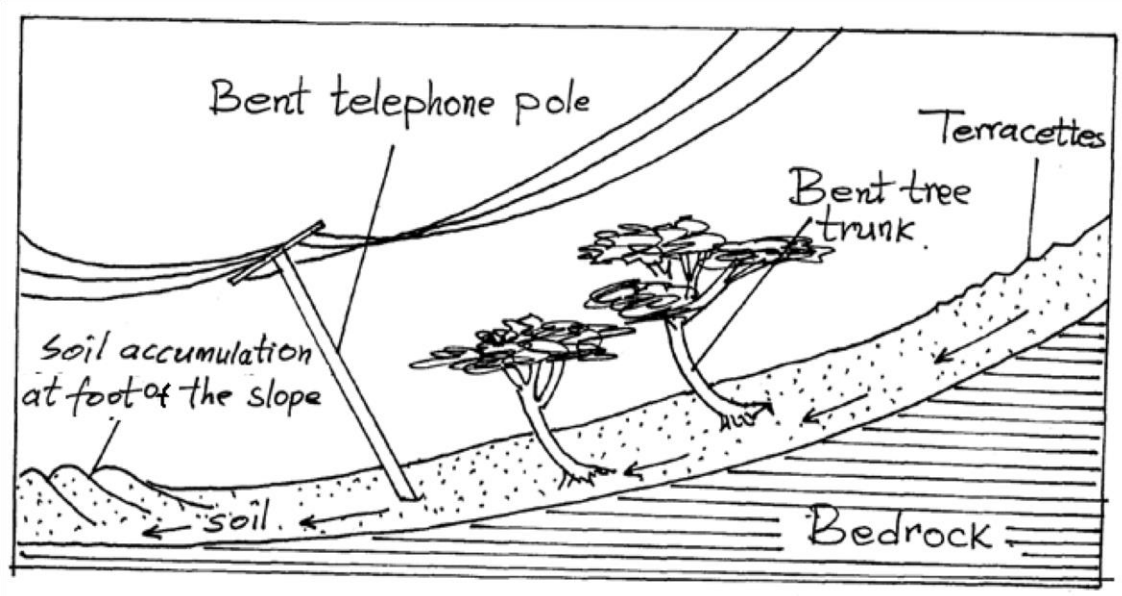
ii) Why does the air current marked F flow at night. **(3mks)**

b) Give reason why air cools as it rises. (**2mks)**

3.(a) Define folding. **(2mks)**

b) List **four** types of folds**.** **(4mks)**

4.) The diagram below illustrates a mass wasting process. Use it to answer question (a) and (b)



a.) Identify the process. **(1mk**)

b.) Explain how the process occurs . **(3mks)**

5.a.) What is a river profile? **(2mks)**

b.) Name the **three** stages of a river profile. **(3mks)**

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SECTION B

ANSWER QUESTION 6 AND OTHER TWO QUESTION FROM THIS SECTION

6. Study the map of Nyeri 1:50,000 (Kenya). Use it to answer the questions that follow.

a) i) Give the latitudinal and the longitudinal position of the south west corner of the map extract **(2mks)**

ii) Calculate the magnetic declination of the map extract **(2mks)**

b) i) Which adjoining sheet is to the S.E of the area covered by the map? **(1mk)**

ii) What is the general flow of river Chanya **(2mks)**

iii) Give **three** social function of Nyeri town **(3mks)**

c.) Calculate the area of Nyeri Forest to the East of Easting 69 and North of Northing 56. (Give your answer in square Kilometers ($Km^{2)}$ **(2mks)**

d.) Citing evidence from the map, Give;

i.) Two reasons why the area covered by the map is suitable for coffee growing **(4mks)**

ii.) Two factor that favor saw milling in the area covered by the map **(4mks)**

e) Describe drainage of the area covered by the map **(5mks)**

7. a) i) Define the term rock **(2mks)**

ii) Give **two** ways of classifying rocks **(2mks)**

b) Describe the following characteristic of minerals **(6mks)**

- Lustre
- Colour
- Hardness

ii.) Give the changes that occur on sedimentary rocks when subjected to intense heat and pressure **(4mks)**

c.i) State the condition necessary for the growth of coral **(3mks)**

ii.) Describe how coral rocks are formed **(4mks)**

d.) You are planning to carry out a field study on rocks

i.) List **two** methods of recording data you are likely to use **(2mks)**

ii.) Give **two** follow up activities of your study **(2mks)**

8. a.) What is Vulcanicity **(2mks)**

b.) i) Apart from Sill name other intrusive Volcanic features **(3mks)**

ii.) Describe how the following features are formed

-A sill. **(5mks)**

-Hot spring. **(5mks)**

iii) Differentiate between lava and magma. **(2mks)**

iv.) Explain four negative effects of vulcanicity. **(8mks)**

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9.a.)i) What is the process through which wave transport the eroded materials along the coast. **(1mk)**

ii.) Give **three** factors that influence wave deposition. **(3mks)**

b i.) Name **two** types of submerged coast. **(2mks)**

ii.) State **three** characteristic of emerged highland coast. **(3mks)**

c.) By the use of well labeled diagrams, describe the formation of a spit. **(7mks)**

d.) Student from Moi secondary school are planning to conduct a field study on wave erosional features to areas along the coast.

i.) Give **three** activities they will undertake while in the field. **(3mks)**

ii.) Name **three** erosional features they are likely to identify. **(3mks)**

iii.) Outline three problems they are likely to face while in the field. **(3mks)**

10.a(i) Identify **two** processes in which ice erodes **(2mks)**

ii.) Name **four** types of glacial moraine **(4mks)**

b.) Give **three** ways in which ice moves **(3mks)**

c.) i) Apart from Arêtes, identify three other ice erosional features in highland areas **(3mks)**

ii.) Describe how an Arêtes is formed **(5mks)**

d) Explain the significance of upland glaciated features to human activities **(8mks)**

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NAME: ……..…….

SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

312/2
GEOGRAPHY PAPER 2
TIME: 2 ¾ HOURS JULY-AUGUST

Instructions to Candidates

1. This paper consists of two sections **A** and **B**. Answer all questions in Section A
2. In section **B** answer question **6** and any other **two** questions. All questions in section B carry 25 marks.
3. ALL answers must be written in the answer booklet provided
4. This paper contains **4** printed pages
5. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
6. Answer all questions in English

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 5	25	
6	25	
7	25	
8	25	
9	25	
10	25	
TOTAL SCORE	100	

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SECTION A (25 Marks) (Answer all questions)

1. (a) Name **two** exotic breeds of dairy cattle reared in Kenya. **(2mks)**

(b) State **three** physical conditions that favour dairy farming in Denmark. **(3mks)**

2. (a) State **two** climatic conditions that favour the growing of oil palm in Nigeria. **(2mks)**

(b) Give **two** problems experienced in the marketing of palm oil in Nigeria. **(2mks)**

3. The table below shows petroleum production in thousand barrels per day for countries in the Middle East. Use it to answer question (a)

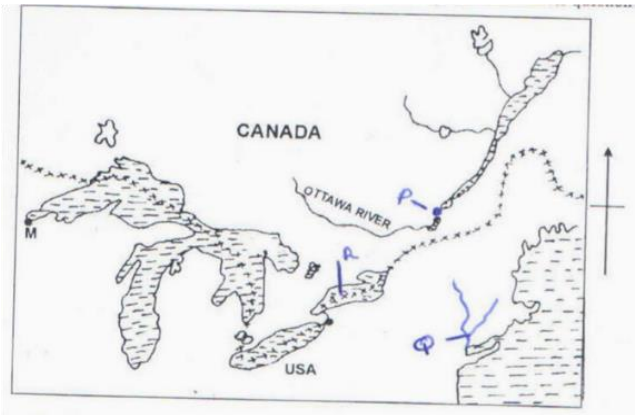
Country	Production in '000' barrels
Iran	3,800
Kuwait	2,550
Qatar	800
Saudi Arabia	9,600
United Arab Emirates	2,000
Iraq	1,900

(a) (i) What is the difference in production between the highest and the lowest producer**?** **(1mk)**

(ii) What is the total amount of petroleum produced in the Middle East region? **(2mks)**

(b) State **three** conditions that are necessary for the formation of petroleum. **(3mks)**

4. Below is a sketch map showing part of the Great Lakes and St. Lawrence Sea Way. Use it to answer question (a)



(a) Name

(i) The port marked P. **(1mk)**

(ii) The canal marked Q. **(1mk)**

(iii) The lake marked R. **(1mk)**

(b) State **three** ways in which great lakes and St. Lawrence Sea Way has contributed to the growth of industries in the region. **(3mks)**

5. (a) Apart from HIV and AIDS, give other causes of mortality in East Africa.

(b) State **two** ways in which the spread of HIV and AIDS in Kenya may slow down economic development.

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SECTION B (75 MARKS)

(Answer question 6 (compulsory) and any two other questions from this section)

6. Study the table below and answer the questions that follow.

	1990	**1991**	**1992**	**1993**
Galloway	20,000	15,000	18,000	19,000
Aberdeen Angus	15,000	10,000	11,000	9,000
Jersey	9,000	5,000	9,000	12,000
Ayrshire	14,000	20,000	15,000	17,000
Boran bulls	35,000	20,000	25,000	30,000
Friesian	25,000	20,000	15,000	17,000

a)i) Using a vertical scale of 1cm represent 10,000 cattle draw a cumulative bar graph to represent the above data from 1990 to 1993. **(8mks)**

ii) State **two** advantages of using the above method to present data. **(2mks)**

b) i) Apart from Mwea Tebere irrigation scheme, name two other irrigation schemes in Kenya. **(2mks)**

ii) State **three** physical factors that influenced the location of Mwea Tebere irrigation scheme. **(3mks)**

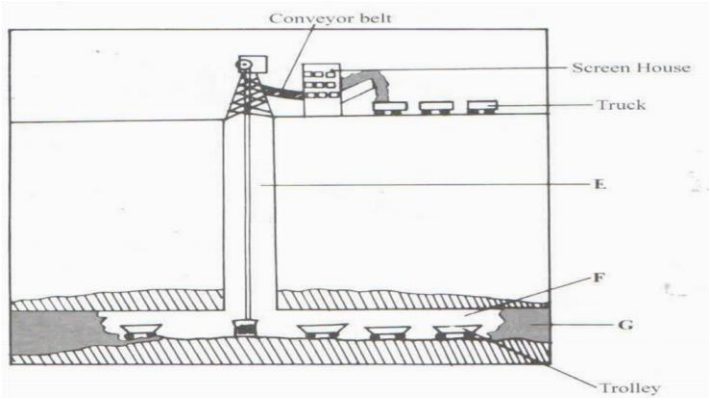
c) i) Give **four** human problems facing the irrigation schemes in Kenya**.** **(4mks)**

ii) Explain **three** ways in which irrigation farming is of significance in Kenya. **(6mks)**

7. **(a)(i)** Name **three** places in Kenya where Limestone is mined. **(3mks)**

(ii) State **two** uses of trona? **(2mks)**

(b)(i) The diagram below shows shaft mining. Name the parts marked E, F and G. **(3mks)**



(ii) State **two** problems associated with shaft mining. **(2mks)**

(c) Explain **four** ways in which gold mining has contributed to the economy of South Africa. **(8mks)**

(d) Explain **three** negative effects of mining on the environment. **(6mks)**

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8.a)i) Differentiate between renewable and non-renewable source of energy. **(2mks)**

ii) Name **three** renewable sources of energy apart from geothermal steam. **(3mks)**

b) i) State **four** advantages of using geothermal energy as a source of power in Kenya**.** **(4mks)**

ii) State **four** main causes of energy crisis in the world**.** **(4mks)**

c) Explain **three** ways in which Kenya has benefited from the development of hydroelectric power scheme **(6mks)**

d) Explain **three** measures taken by the government of Kenya to conserve energy **(6mks)**

9.a) Distinguish between manufacturing and tertiary industries**.** **(2mks)**

b)i) Name **four** agricultural food processing industries in Kenya. **(4mks)**

ii) Explain **four** factors that influenced the location of iron and steel industries in the Ruhr region of Germany. **(8mks)**

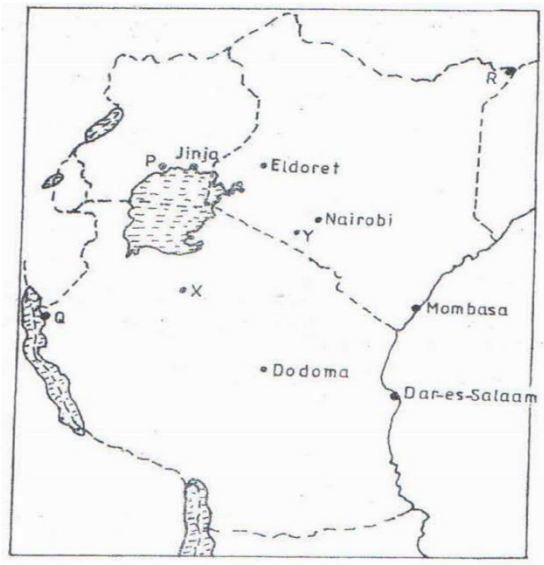
c) Give **five** reasons why the government of Kenya encourages the establishment of Jua Kali industries. **(5mks)**

d) You intend to carry out a field study in a coffee factory near your school.

i) State **three** reasons why you would visit the area of study in advance**.** **(3mks)**

ii) You have prepared a work schedule for your study. State three items you would include in your schedule. **(3mks)**

10. The map below shows the location of some urban centres in East Africa. Use it to answer question (a).



(a) (i) Name the town marked P,Q and R. **(3mks)**

(ii) Name the minerals that influenced the growth of the town marked X and Y. **(2mks)**

(b) Explain **four** factors that have led to the growth of Eldoret as a major town in Kenya. **(8mks)**

(c) Compare the ports of Mombasa and Rotterdam under the following headings

(i) Site **(2mks)**

(ii) The hinterland. **(2mks)**

(iii) Transport links to the interior. **(2mks)**

(iv) Port facilities. **(2mks)**

(d) Explain **two** negative effects of urbanization on the neighboring agricultural areas. **(4mks)**

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

311/1
HISTORY AND GOVERNMENT
Paper 1
Time: 2 ½ Hours

Instructions to candidates:

a) This paper consists of **THREE** sections **A**, **B** and **C**.

b) Answer **ALL** questions in section **A**, **three** questions in section **B** and **two** questions from section **C**.

c) Answers to **all** questions **MUST** be written in the ruled papers provided.

d) Candidates should answer the questions in English.

For Examiner's Use Only

SECTION	QUESTIONS	MAX.	SCORED
A	1 – 17	25	
B	18	15	
	19	15	
	20	15	
	21	15	
C	22	15	
	23	15	
	24	15	
		100	

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SECTION A (ANSWER ALL QUESTIONS IN THIS SECTION 25MKS)

1. Identify the branch of history that deals with control systems in the society. **(1mk)**
2. Identify **one** community in Kenya which belongs to the Southern Cushitic group. **(1mk)**
3. State **one** political function of the Oloibon among the Maasai during the 19th century. **(1mk)**
4. Apart from Fort Jesus, name the other monument built by the Portuguese at the Kenyan coast. **(1mk)**
5. State **two** ways in which Christianity undermined African culture. **(2mks)**
6. Identify the **main** reason for the formation of the inter-party parliamentary group (I.P.P.G) of 1997. **(1mk)**
7. Identify **two** education commissions established in Kenya before independence. **(1mk)**
8. Mention the treaty that brought to an end the scramble for and partition of East Africa. **(1mk)**
9. State **one** way in which national integration has promoted economic development in Kenya. **(1mk)**
10. State two ways in which the rule of law is maintained in Kenya. **(2mks)**
11. Highlight **two** reforms that resulted from the Lyttleton constitution of 1954. **(2mks)**
12. Identify **two** pillars of Nyayo philosophy. (**2mks)**
13. Identify **two** situations when the office of the president may become vacant in Kenya. **(2mks)**
14. Identify **two** types of land ownership in Kenya. **(2mks)**
15. State the composition of the County Executive Committee. **(2mks)**
16. State **one** function of the supreme court of Kenya. **(1mk)**
17. Give **two** functions of the commission on revenue allocation in Kenya. **(2mks)**

SECTION B (ANSWER ANY THREE QUESTIONS IN THIS SECTION 45MKS)

18. (a) Give **five** reasons for the migration of the Luo from their original homeland into Kenya. **(5mks)**

(b) Describe the political organization of the Somali in Kenya during the pre-colonial period. **(10mks)**

19.a) Give three reasons why the early visitors came to the Kenyan coast before 1500A.D. **(3mks)**
b) Explain **six** factors that contributed to the development of trade between the Kenyan coast and outside world by 1900. **(12mks)**

20.a) Give **five** grievances of the Kikuyu Central Association which were presented by Jomo Kenyatta to the colonial secretary in 1929. **(5mks)**
b) Explain **five** reasons why the MAUMAU movement was able to last for a long time. **(10mks)**

21.a) State **five** features that characterized African socialism in Kenya. **(5mks)**
b) Explain **five** ways in which the Harambee philosophy has promoted the development of education in Kenya. **(10mks)**

SECTION C (ANSWER ANY TWO QUESTIONS IN THIS SECTION 30MKS)

22.(a) State **five** characteristics of the human rights. **(5mks)**
b) Discuss the **five** methods used by the international community to solve conflicts. **(10mks)**

23.(a) State **five** reforms which have been introduced to improve the conditions of Correctional Services. **(5mks)**
(b) Explain **five** factors which undermine free and fair elections in Kenya. **(10mks)**

24.(a) Name **three** types of constitutionally established funds in Kenya. **(3mks)**

(b) Discuss **six** challenges facing devolved governments in Kenya. **(12mks)**

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EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

311/2
FORM FOUR
HISTORY AND GOVERNMENT
PAPER 2
$2^{1}/_{2}$ HOURS

Instructions

a. This paper consists of **three** sections A, B and C.

b. Answer **all** the questions in section **A.**

c. Answer any **three** questions in section **B.**

d. Answer **any two** questions in section **C.**

e. You should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

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Section	Maximum Score	Question
A	25	
B	45	
C	30	
	SCORE	**100**

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SECTION A (ANSWER ALL QUESTIONS)

1. Identify **two** sources of information which can complement oral traditions in studying history and government **(2mks)**

2. Give the makers of Oldowan tools. **(1mk)**

3. State the main reason that made the early man to set up permanent settlement **(1mk)**

4. State **two** ways in which agrarian revolution in Britain affected the lives of small farmers. **(2mks)**

5. State **two** ways through which political instability has contributed to food shortage in Africa. **(2mks)**

6. Name **two** parts in Africa that developed as a result of the Trans-Atlantic trade. **(2mks)**

7. What was the invention of the Wright brothers. **(1mk)**

8. State the symbol of unity of the provincial Asante in the 19th century **(1mk)**

9. Name **two** African leaders in the maji maji rebellion. **(2mks)**

10. Name **one** administrative method used by French to administer her colonies. **(1mk)**

11. Name **one** nationalist party that fought for independence of Mozambique. **(1mk)**

12. Name **two** systems of alliances formed during the First World War. **(2mks)**

13. Give the main cause of the cold war. **(1mk)**

14. Give **two** founders members of Non-Aligned movement. **(2mks)**

15. Give the main political challenge faced by Congo after independence. **(1mk)**

16. Name **two** past presidents of Tanzania. (**2mks)**

17. Name the body that determines the election of the president of the united state of America. **(1mk)**

SECTION B (45MARKS ANSWER ANY THREE QUESTIONS)

18. (a) State three reasons why early man moved from forests to settle in grass land in the pre-colonial era. **(3mks)**

(b) Describe the way of life of early man during the Old Stone Age period. **(12mks)**

19. (a) Give **three** reasons why African slaves were preferred during the Trans-Atlantic trade. . **(3mks)**

(b) Explain **six** challenges encountered by Trans-Saharan traders. **(12mks)**

20. (a) Name **three** chartered companies that ruled European territories in Africa during the 19th century. **(3mks)**

(b) Explain **six** economic impacts of the partition of Africa among the European powers. **(12mks)**

21. (a) State **five** methods used by South Africa nationalists in the struggle for independence. **(5mks)**

(b) Explain **five** factors that favoured the success of FRELIMO nationalists during the struggle for independence in Mozambique. **(10mks)**

SECTION C (30 MARKS ANSWER ANY TWO QUESTIONS)

22. (a) State **five** functions of the Lakiiko of the Buganda kingdom during the pre-colonial period. **(5mks)**

(b) Describe the political organization of the Buganda during the pre-colonial period. **(10mks)**

23. (a) State **five** features of commonwealth. **(5mks)**

(b) Explain **five** causes of cold war. **(10mks)**

24. (a) Give **three** conditions that one should fulfill in order to be elected president of India. . **(3mks)**

(b) Explain **six** functions of the British parliament. **(12mks)**

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JINA: ……..…….

SHULE: ……..

NAMBARI YA USAJILI: …….. SAHIHI: ……..…. TAREHE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

102/1 -
KARATASI YA 1 - INSHA
MUDA: SAA $1^{3}/_{4}$

MAAGIZO:

- *Andika insha mbili. Insha ya **kwanza** ni ya **lazima***
- *Chagua insha ya **pili** kutoka tatu zilizobakia.*
- *Kila insha isipungue **maneno 400**.*
- *Kila insha ina alama **20**.*
- *Kila insha iandikwe kwa lugha ya **Kiswahili.***

1.Lazima

Andika dayolojia kati ya katibu wa usalama wa ndani na waandishi wa habari kuhusu jinsi ya kuzuia uhalifu nchini. **(alm20)**

2 Utelekezaji wa mtoto wa kiume katika nchini ni janga kuu. Jadili. **(alm20)**

3 Mpiga mbizi nchi kavu huchunua usowe. **(alm20)**

4 Tunga kisa kitakachomalizikia kwa maneno yafuatayo: **(alm20)**

...mwishowe nilikuja kung'amua kwamba jitihada za wenzangu ndizo zilizonisaidia kuvuka daraja hiyo.

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SHULE: ……

NAMBARI YA USAJILI: …….. SAHIHI: ……..…. TAREHE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

KARATASI YA PILI - LUGHA
MUDA: SAA $2^1/_2$

MAAGIZO:

a) Andika jina lako na nambari ya mtihani katika nafasi ulizoachiwa hapo juu.

b) Tia sahihi yako kisha uandike 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.

f) Karatasi hii ina kurasa **12** zilizopigwa chapa.

g) Mtahiniwa lazima ahakikishe kwamba kurasa zote zimepigwa chapa sawasawa na kuwa maswali yote yamo.

Kwa matumizi ya mtahini pekee.

Swali	Upeo	Alama
1 Ufahamu	15	
2. ufupisho	10	
2 Sarufi	40	
3 Isimu Jamii	10	
Jumla	80	

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SEHEMU YA A: UFAHAMU (ALAMA15)
Soma taarifa ifuatayo kisha ujibu maswali yanayofuata.

Katiba ni utaratibu wa sheria unaoweka mpango wa jamii kuendesha mambo.Ni muhimu kila raia ajue katiba ya nchi yake.

Katiba yaweza kuwa imeandikwa au haikuandikwa. Katika jamii za jadi, katiba ilihifadhiwa na kupokezwa kwa mdomo. Mtindo wa kuandika katiba ulianza nchini Marekani mwaka 1787. Ingawa katiba hii imefanyiwa mabadiliko hapa na pale,bado ni ileile. Kenya ilipowekwa chini ya himaya ya Uingereza mwaka 1895, ilianza kutumia katiba ya Uingereza. Baada ya masetla wa kikoloni kujikita, Kenya kuwa koloni. Hii ililazimu pawe na katiba nyingine mwaka 1920. Waafrika waliupinga mfumo huu kwa sababu haukuwahusisha kikamilifu kwenye masuala ya uongozi. Utetezi wa wanasiasa uliilazimisha serikali ya Uingereza kuitisha makongamano mbalimbali kama vile lile la Devonshire na mengine ili kurekebisha katiba. Waafrika hawakuridhika. Wakaendelea kudai katiba mwafaka. Harakati hizi zilileta kuitishwa kwa kongamano la katiba la Lancaster. Lengo lilikuwa kuandika katiba itakayotumiwa nchini hadi leo. Kati ya wajumbe walioenda Uingereza kuandika katiba mwaka 1962 ni pamoja na Tom Mboya, Jean Marie Seroney, Julius Kiano, Jomo Kenyatta, Masinde Muliro, Oginga Odinga, Ronald Ngala, Daniel Arap Moi na James Gichuru. Wengine ni Martin Shikuku, Dennis Akumu, Taita Towett, Abdilahi Nassir, Jeremiah Nyaga na John Keen.

Katiba ni kitovu cha taifa. Baina ya mambo inayotekeleza ni kuweka utaratibu na kanuni za utawala, kwa mfano, utawala wa kimikoa na serikali za wilaya. Pamoja na haya, katiba hufafanua vyombo vikuu vya serikali ,mamlaka yavyo na mipaka yavyo ya kutenda. Vyombo hivi ni bunge, mahakama, urais, jeshi n.k. Hali kadhalika, katiba hupambanua haki za raia.

Hii hudumisha demokrasia na huwawezesha wananchi kupata uhuru na haki za kimsingi. Katiba hukinga haki za kila raia, hasa kutokana na udhalimu wa wengi au wenye uwezo mkubwa. Zaidi ya yote, katiba huimarisha asasi za umma ili kudumisha uwajibikaji.
Katiba huhalalishwa na watawaliwa. Hii hutokea wanaposhirikishwa katika uandishi wake. Kuanzia miaka ya themanini, raia walianza kudai katiba igeuzwe. Mwamko wa kutaka mageuzi ulianza kwa harakati za kubadilisha mfumo wa kisiasa kutoka ule wa chama kimoja hadi ule wa demokrasia ya vyama vingi. Haja ya mfumo mpya wa kisiasa ulilenga kuwashirikisha wananchi katika utawala na kuondoa uimla.
Harakati zilitia fora miaka ya tisini. Mambo yaliyochochea hali hii ni mengi. Kwanza, katiba iliyokuwa imeandikwa na watu wachache ilikuwa imefanyiwa marekebisho mengi. Marekebisho haya yalimpa rais mamlaka mengi juu ya serikali kuu na vyombo tofauti vya serikali. Pili, viongozi na watu wenye uwezo na utajiri walipuuza katiba. Raia walihisi wanadhulumiwa. Walipinga hali ya wachache waliomzunguka rais kunufaika huku umma ukitengwa. Tatu, kutokana na uongozi uliokuweko wakati huo, wanawake, watoto na walemavu walidhulumiwa na kukosa uwakilishi
ufaao.Hatimaye, pakawa na ongezeko la uharibifu wa mazingira, ufisadi na unyakuzi wa mali ya umma kama vile ardhi.
Waliopigania katiba mpya walikuwa na haja ya katiba ambayo uandikaji wake ungewahusisha Wakenya wote. Mwanzoni, serikali ilipinga wito wa mabadiliko. Lakini mnamo mwaka 2001 iliunda Tume ya Marekebisho ya Katiba ili kutekeleza mahitaji ya wananchi. Tume hii iliwahamasisha na kuwashawishi raia kutoa maoni. Tume iliandaa vikao katika maeneo ya ubunge 210 ambapo wananchi walitoa mapendekezo kuhusu marekebisho ya katiba waliyotaka.

Katika mapendekezo hayo raia walisisitiza mambo kadhaa. Jambo la kwanza ni utawala mwema na uwajibikaji wa viongozi na maafisa wa umma .Jambo lingine ni kulinda haki za binadamu zikiwemo za wanawake, watoto na walemavu. Raia walidai kanuni za usawa na ulinganifu. Aidha walitilia mkazo mahitaji ya msingi kama chakula, afya nzuri, makao, elimu, usalama, uchumi, na kadhalika.

Msingi wa mapendekezo hayo yote ni kuwepo na amani ya kitaifa, umoja na uadilifu ili kulinda maslahi ya wananchi wote na taifa.

Maswali :

1. Eleza kilichosababisha kongamano la katiba la Lancaster **(alm3)**

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2. Tambua mambo matatu yaliyotiliwa mkazo na raia katika maoni yao kuhusu katiba. **(alm3)**

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3.Eleza umuhimu wa katiba kwa mujibu wa taarifa. **(alm3)**

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4.Taja sababu zilizochangia ubadilishaji wa katiba. **(alm3)**

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5. Ni nini kinachomaanishwa na maneno haya kama yalivyotumiwa katika taarifa. (alama3)

- Kitovu

  Harakati

  Hamasisha

.....

.....

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.....

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SEHEMU YA B: UFUPISHO: (ALAMA 15)

Soma taarifa ifuatayo kisha ujibu maswali yanayofuata:

Katika safu yangu hii sina lengo la kuzishambulia dini zetu na namuomba Mungu sana asiniandikie dhambi kutokana na ninayotaka kuyandika. Lakini nashawishika kuikumbusha jamii yangu ambayo inatufanya watu tuzione dini zetu zinamkandamiza mwanamke. Dini zetu kubwa kama Uislamu na Ukristo zinatuelekeza mwanamke kumheshimu mumewe na kumsikiliza anachosema, lakini kwa yeye kufuata maadili ya dini na si kukuambia uue ukakubali.

Wakati dini inasema utekeleze amri ya mumeo na wao wameelezwa mambo ya kuwafanyia wanawake, ikiwa ni pamoja na kuwaheshima na kuwaridhisha kadri ya uwezo wao.

Kutokana na hilo la amri, wanaume wengi ndio wamechukua kama tiketi ya kunyanyasa mwanamke na hata kumnyima fursa ya kujiendeleza kielimu na hata kufanya shughuli za kuongeza kipato. Unakuta familia ni ya kimaskini, baba hana fedha za kutosha kuihudumia familia yake, lakini baba huyo anataka kujishughulisha na shughuli yoyote ya kumuingizia kipato kinachoweza kuwasaidia wote na matokeo yake kuendelea kuwepo, kwenye dimbwi la umasikini. Wengine kwa hofu ya kupata changamoto kutoka kwa wake zao wanawakatalia wanawake walio wao kujiendeleza kielimu au kutafuta mwanamke asiyeelimika ili asiweze kuhoji mambo kadhaa ndani ya nyumba.

Hili limebainishwa hivi karibuni na shirika moja lisilo la kiserikali huko kigoma ambapo katika utafiti wao asilimia 90% ya wanawake wa vijijini wanashindwa kutoa hoja kutokana na uelewa wao duni na kutoa sababu ya kuwa hiyo ni kutokana na ukosefu wa elimu, masuala ya kidini yanayomwelekeza mwanamke kufuata amri za mumewe, mila na desturi kadhaa.

Dini zote zinaeleza wazi umuhimu wa mtu kupata elimu bila kubagua kama ya kiislamu inavyosema; mtu anapata thawabu anapotafuta elimu na anatakiwa aitafute popote bila kujali umbali na hata ikiwezekana kufika China ambapo inaaminika ni mbali.

Sijawahi kuona wala kusikia dini ikisema mwanamke asipate elimu lakini baba zangu na kaka zangu wanaume wanalipotosha hili kutaka kuendelea kumkandamiza mwanamke bila kufikiri kuwa mwanamke ni msaada mkubwa kwao na kwa maendeleo ya taifa lote; ikiwa leo tupo katika harakati za kupata maendeleo na nchi hii hivi kweli tutafanikiwa?

Mapambano ya kuleta maendeleo yaanze katika ngazi ya familia kwa kuondoka kwa ujinga wa kumkandamiza mwanamke ili naye aelimike, aweze kujenga hoja, aweze kujitafutia kipato na mwisho kusaidia katika maendeleo ya familia ambayo kwa njia nyingine ndiyo maendeleo yenyewe ya taifa hili.

Maswali

1.Fupisha aya tano za kwanza**. (Maneno 70).** **(Alm8)**

MATAYARISHO

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NAKALA SAFI

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2.Mwanamke anaweza kuendelezwa vipi. Rejelea aya mbili za mwisho. **(Maneno 50)**.

(**Alm7)**

MATAYARISHO

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NAKALA SAFI

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SEHEMU YA C: SARUFI NA MATUMIZI YA LUGHA

a) Toa sifa bainifu za sauti /h/ **(alm2)**

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b)Taja aina **mbili** kuu za ala za sauti kisha utoe mfano mmoja mmoja. **(alm2)**

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c) Andika maneno mawili yenye **muundo** ufuatao wa silabi. **(alm1)**

KKKI

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d) Onyesha vikwamizo **viwili** ambavyo ni konsonanti hafifu **(alm1)**

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e) Andika katika wakati ujao hali timilifu **(alm2)**

Wanafunzi walifanya mtihani wa mwigo

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f)Andika kwa **msemo** wa taarifa: **(alm2)**

Askari: Ulikuwa unaelekea wapi uliposhambuliwa?

Jirani: Nilikuwa nikienda sokoni jana.

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g) Ainisha **vishaz**i katika sentensi ifuatayo. **(alm2)**
Ajapo tutamlaki kwa shangwe.

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h) Sahihisha sentensi ifuatayo.
Mtu ambaye aliyechukua kitabu chenye kilikuwa hapa arudishe. **(alm1)**

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i)Tumia mzizi **–w-** katika sentensi kama: **(alm2)**
(i) Kitenzi kisaidizi.
(ii) Kitenzi Kishirikishi.

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j) Tunga sentensi kubainisha matumizi ya **'na'** kama. **(alm2)**
(i) Kihusishi cha 'na' ya mtenda.
(ii) Kiunganishi cha kuongeza

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k)Weka kirejeshi **'O'** tamati kwenye kitenzi **chunga** kisha ukitungie sentensi. **(alm1)**

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l) Tunga sentensi sahihi ukitumia kihisishi cha kukataa. **(alm2)**

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m)Tunga sentensi ya neno moja yenye sehemu zifuatazo : **(alm2)**

Kikanushi
Hali timilifu
Mtendewa
Kitenzi cha silabi moja
Kauli ya kutendesha
Kiishio

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n) Ainisha **shamirisho** katika sentensi hii

Ali alimnunulia Asha viatu kwa pesa zake. **(alm2)**

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o) Tumia kivumishi kionyeshi cha karibu pamoja na nomino katika ngeli ya I-ZI kutungia sentensi iliyoko katika hali ya **ukubwa - wingi.** **(alm2)**

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p) Bainisha matumizi ya viambishi vilivyopigiwa mstari. **(alm2)**

Mwalimu ana<u>ku</u>ita ofisi<u>ni</u> umweleze uli<u>ko</u>weka <u>ki</u>jitabu chake.

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q) Eleza **matumizi** ya <u>kwa</u> katika sentensi hii. **(alm3)**

Kwa nini umeishi kwao kwa miaka mingi?

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r) Eleza maana **tatu** zinazopatikana katika sentensi hii. **(alm3)**

(i) Alikuwa amenijuza kuwa angefika kwao.

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s) Changanua sentensi kwa njia ya matawi **(alm4)**

Yeye na mama yule si watu wazuri sana

t) Andika sentensi ifuatayo kwa kufuata maagizo. **(alm2)**

Nimewaleta askari kituoni ili wawalinde wananchi wote wanaosumbuliwa na majambazi.

(Anza: Wananchi ...)

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SEHEMU YA D: ISIMU JAMII

Soma Makala yafuatayo kisha ujibu maswali yanayofuata.

.....napinga hoja iliyotolewa na waziri wa Finance ya kuongeza ushuru wa asilimia tatu kwa Wakenya. Baada ya kumsikiza kwa makini, napenda kumkosoa kwa kudhihirisha kuwa.....Housing levy kulingana na kifungu nambari .....

Maswali

1.Bainisha sajili ya mazungumzo haya. **(alm2)**

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2 Huku ukidhibitisha , eleza ni vipi ambavyo mnenaji angefanikisha ujumbe wake **(alm8)**

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JINA: ……..…….

SHULE: ……..

NAMBARI YA USAJILI: …….. SAHIHI: ……..…. TAREHE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

KIDATO CHA NNE
KARATASI YA TATU
FASIHI
MUDA: SAA $2^{1}/_{2}$

Maagizo.

a) Jibu maswali **manne** pekee.
b) Swali la **kwanza** ni la **lazima**.
c) Maswali mengine **matatu** yachaguliwe kutoka sehemu **nne** zilizobaki; yaani: tamthilia, hadithi fupi, ushairi na fasihi simulizi..
d) **Usijibu** maswali **mawili** kutoka **sehemu moja.**
e) Kila swali lina alama **20**.
f) Karatasi hii ina kurasa **sita** zilizopigwa chapa.
g) **Watahiniwa ni lazima wahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote *yamo.***

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SEHEMU YA A: SWALI LA LAZIMA

RIWAYA YA CHOZI LA HERI. (ASUMPTA MATEI)

1.Nimechoka.Nimechoka kukilovya kifua changu...Nimechoka kuitwa mwizi.....Nimechoka kupigania mwenzi...na mwenzi mwenyewe haoni.

(a) Fafanua muktadha wa dondoo hili. **(alm4)**

(b) Taja na ueleze mbinu ya lugha iliyotumika. **(alm2)**

(c) Fafanua sifa za mnenaji katika dondoo. **(alm4)**

(d) Jamii ya riwaya hii imekumbwa na migogoro chungu nzima. Dhibitisha ukweli wa kauli hii ukirejelea riwaya nzima. **(alm10)**

SEHEMU YA B: TAMTHILIA YA BEMBEA YA MAISHA (TIMOTHY M. AREGE)

JIBU SWALI LA 2 AU 3

2."Mwache mtoto apumzike.Hivi atayashika mangapi?"

(a) Eleza muktadha wa dondoo hili. **(alm 4)**

(b) Fafanua toni ya dondoo hili. **(alm3)**

(c) Eleza sifa za mnenewa. **(alm7)**

(d) Mnenaji ana umuhimu upikatika tamthilia? **(alm6)**

Au

3. Tamthilia ya Bembea ya maisha inaashiria mabadiliko mengi maishani.Jadili jinsi mabadiliko haya yanavyojitokeza. **(alm20)**

SEHEMU YA C: HADITHI FUPI.

MAPAMBAZUKO YA MACHWEO NA HADITHI NYINGINE.

Jibu swali la 4 au 5

4. Nilisikia kama maruweruwe,"Mamangu eeh!Mama eeh!"....

(a) Eleza muktadha wa dondoo. **(alm4)**

(b) Pambanua mbinu mbili za lugha zinazojitokeza katika dondoo. **(alm4)**

(c) Fafanua matukio yaliyomfanya mnenaji kuyanena maneno yale. **(alm6)**

(d) Jadili sifa za mnenaji wa maneno haya. **(alm6)**

Au

5.Eleza matatizo yanayomkumba mtoto msichana kwa mujibu wa hadithi zifuatazo:

a) Sabina

b) pupa

c) kifo cha suluhu

d) Ahadi ni deni

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SEHEMU YA D: USHAIRI

Jibu swali la 6 au 7

6.Soma shairi hili kisha ujibu maswali yanayofuata:

Jukwani naingia, huku hapa pasokota,
Kwa uchungu ninalia, hii tumbo nitaikata,
Msiba mejiletea, nimekila kiso takata,
We tumbo nitakupani, uwe umetosheka?

Wazee hata vijana,wote umewasubua,
Huruma nao hauna, heshima kawakosea,
Ukambani na Sagana, hata mbwa wararua,
We tumbo nitakupani, uwe umetosheka?

Wahasibu ofisini,kibwebwe mejifunga,
Miaka mingi vitabuni, ili wasikose unga,
Nadhari wanadhamini, hesabu wanazirenga,
We tumbo nitakupani, uwe umetosheka?

Wapenzi wa kiholela, pia wanakuogopa,
Baada yao kulala, wana wao wanatupa,
Wakihitaji chakula, wanachokora mapipa,
We tumbo nitakupani, uwe umetosheka?

Wafugaji hata nao, kama dawa wakwamini,
Hawajali jiranio, wamesusia amani,
Wanaiba ng'ombe wao, na kuzua kisirani,
We tumbo nitakupani, uwe umetosheka?

Nayo mizozo ya maji, kaonekana kwa mara,
Hiyo nayo ni dibaji, sababu sio harara,
Njaa wahepe wenyeji, huo ndio mkarara,
We tumbo nitakupani, uwe umetosheka?

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Ningeweza kukuuza, ingekuwa siku njema,
Tena kwa bei ya meza, sokoni nimesimama,
Wala tena singewaza, kuhusu wali na sima,
We tumbo nitakupani, uwe umetosheka?

Hatima umefikika, naenda zangu nikale,
Mate yanidondoka, kwa mnukio wa wale,
Naomba kwenda kukaa, wala sio nikalale,
We tumbo nitakupani, uwe umetosheka?

Maswali

(i) Lipe anwani mwafaka shairi hili. **(alm2)**

(ii) Shairi hili ni la aina gani? Toa sababu. **(alm2)**

(iii) Huku ukitolea mifano mwafaka, taja arudhi zilizotumiwa katika ubeti wa tatu. **(alm4)**

(iv) Andika ubeti wa nne kwa lugha nathari. **(alm4)**

(v) Thibitisha kuwepo kwa idhini ya ushairi. **(alm2)**

(vi) Taja madhila anayoelezea mtunzi wa shairi hili yaletwayo na tumbo. **(alm4)**

(vi) Elezea maana ya maneno yafuatayo. **(alm2)**

(a) Dibaji

(b) Harara

AU

7.**Soma shairi hili kisha ujibu maswali yanayofuata.**

Nimechoka
Nilivyofikisha hapa, na juu kupandishwa
Na kwa hila gani, au, zilipofungwa
Ncha za waya hii ngumu ya maisha, sijui.

Wanadamu wameinama.Wanasali kwa haraka sasa.
Utafikiri wanahesabu mchanga utakaojaza kaburi langu.
Vichwa vyeupe vinacheka.Kingine kinasema tena:
“Mnaliona Hilo! Joga !” Vichwa vinachela.Wanasali.

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“Nyinyi nyote hamna akili!Mnaniudhi!
Hamwoni hali yangu!” Napiga kelele.Lakini vichwa
Havitishi,na wanadamu hawatingishiki.

Sauti ya baba inasema kwa msisitizo
“Najua utafika wakati itakulazimu kudondoka.
“Lakini unazo nguvu bado,na usikate tamaa,
Ila usitegemee kusifiwa au kusaidiwa;
Vichwa vyote hivi vilidondoka kutoka umbali huo,
Nawe kudondoka,utadondoka!

Ninaendelea kuning’inia.Nimechoka.Mikono
Inaniuma;hatari ya vitimbo.Vinacheka.Wanasali
Sasa wanaimba.Sitaki nyimbo zao;maana
Mimi bado nimeniong’inia na vitimbo having’oki.
Lakini pole pole ninaanza kutabasamu.
Sijafikia hatua ya kucheka;maana nimechoka,
Kichomi kimenipata na sijadondoka

Lakini najiona nimening’inia kama ndege
Aliyenaswa na mtego wa mtoto mdogo
Mimi,Lakini ni mwanadamu na akili zangu
Timamu.Ninaweza kudondoka, kama nikipenda.

Lakini ninaogopa chini yangu naona miti
Iliyochongwa ikifuata usawa wa waya hii,
Ikingoja kwa hamu,kama mshikaki kunichoma,
Kunitoboa na kufurahia kimya kimya,
Uzuri wa kupita katika mwili mwororo wa binadamu.
Lazima nishike kwa nguvu nisianguke kama kifurushi
Cha pamba cha mtoto mdogo kilichokwisha pimwa.

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Mikono inaniuma, na waya imekwishanikata vidole.
Damu imetiririka hadi kwapani;kujipangusa siwezi.
Nimechoka.Kadiri niendeleavyo kunig'inia, ndivyo
Sura yangu ionyeshavyo vizuri alama za uchovu.
Ninatazama huku na huko kuwatafuta wenye huruma.
Lakini wanadamu wote wazima wanainamisha vichwa
Chini kama kwamba hawanijui;hata jamaa zangu!

Ninaendelea kuning'inia kama picha iliyotundikwa
Katika shamba la mawele, na mwenye shamba
Huvuta waya kutoka nyumbani,itingishike kuwatisha
ndege.
Machozi yananitoka,kuyapangua siwezi.
Ninajitahidi kutoa sauti kwa nguvu;
"Jamani e! Nisaidie! Ng'oeni hivyo vitimbo!"
Lakini wanadamu wameinama.Wanaanza sasa kusali.

Kati ya vitimbo, vichwa vinazuka ardhini
Ukweli wa maisha unakuwa kama ndoto ya uwongo.
Kichwa kimoja kinasema kwa sauti "Mnaliona Hilo!"
Halafu vichjwa vyote vyeupe vinacheka.Ninashangaa.
Ninashangaa zaidi kusikia sauti ya baba
Ikicheka miongoni mwa vichwa hivyo vyeupe.
Siyaamini macho,siyaamini masikio, sikiamini kichwa.

Maswali:

1. Shairi hili ni la "udhanaishi" Fafanua kauli hii. **(alm4)**

2. onyesha kwa kutoa mifano miwili, jinsi msanii alivyotumia tamathali zifuatazo **(alm6)**

(a) Jazanda

(b) Uhuishi

3. Andika ubeti wa saba kwa lugha tutumbi. **(alm4)**

4. Eleza maana ya mishororo "vichwa vyote hivi vilidondoka kutoka umbali huo, nawe kudondoka utadondoka". **(alm2)**

5. Eleza umbo la shairi hili. **(alm4)**

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SEHEMU YA E: FASIHI SIMULIZI

8.(a) Maghani ni nini? **(alm2)**

(b) Eleza sifa za maghani. **(alm6)**

(c) Fafanua aina zozote tatu za maghani. **(alm6)**

(d) Eleza matatizo yoyote sita yanayomkumba mtafiti anapotafiti maghani. **(alm6)**

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NAME: ……..…….

SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

121/1
MATHEMATICS ALT. A
Paper 1
Time: 2 ½ Hours

Kenya Certificate of Secondary Education.(K.C.S.E
MATHEMATICS ALT. A
Paper 1

INSTRUCTION TO CANDIDATES

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

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** the questions in Section I and any **FIVE** questions in Section II.

e) Show all the steps in your calculations, giving your answer at each stage in the spaces provided below each question.

f) Marks may be given for correct working even if the answer is wrong.

g) Non-programmable silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.

h)Candidates should answer the questions in English.

i)Candidates must check the question paper to ascertain that all pages are printed as indicated and that no question(s) is/are missing

FOR EXAMINER'S USE

SECTION I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	**Total**

SECTION II

17	18	19	20	21	22	23	24	**Total**

Grand Total

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SECTION I (50 MARKS)

Attempt All Questions in this section

1. Find the value of y given that **(3mks)**

$$\frac{-2(5+3)-9\div 3+5}{-3\times -5y+2y\times 4}=1$$

2. The length of a minute hand of a clock is 3.5cm. What will be the time if from 10.15am it sweeps through an area of $19.25cm^2$? **(4mks)**

3. Use reciprocal, square and square root table to evaluate to 4 significant figures, the expression

$$\sqrt{\frac{1}{24.56}+4.346^2}$$ **(3mks)**

4. Given that $\sin(90-x)^0 = 0.8$, where x is an acute angle, find without using mathematical table the value of $2\tan x+\cos(90-x)$ **(3mks)**

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5. Find the equation of the tangent and the normal to the curve $y = 2x^3 - 3x^2 + 6$ at the point (2,10) **(4mks)**

6. Simplify $\dfrac{2y^2 + 3xy - 2x^2}{x^2 - 4y^2}$ **(3mks)**

7. Find greatest integral value of x which satisfies

$$\frac{2x+3}{2} < \frac{8-3x}{5} < \frac{5x+6}{3}$$ **(3mks)**

8. One of the roots of the equation $x^2 + (k+1)x + 28 = 0$ is 4. Find the values of k and hence the second root **(4mks)**

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9. Solve for x in the following without using a calculator or mathematical table.

$9^x\left(27^{(x-1)}\right) = \tan 30^o$ **(3mks)**

10. A shear parallel to the x-axis maps point (1, 2) onto a point (5, 2). Determine the shear factors and hence state the shear matrix (invariant line is y=0) **(3mks)**

11. A solid is in the shape of a right pyramid on a square base on side 8cm and height 15cm. A frustum whose volume is a third of the pyramid is cut off. Determine the height of the frustum. **(3mks)**

12. The interior angle of a regular polygon is 20° more than three times the exterior angle. Determine the number of sides of the polygon **(2mks)**

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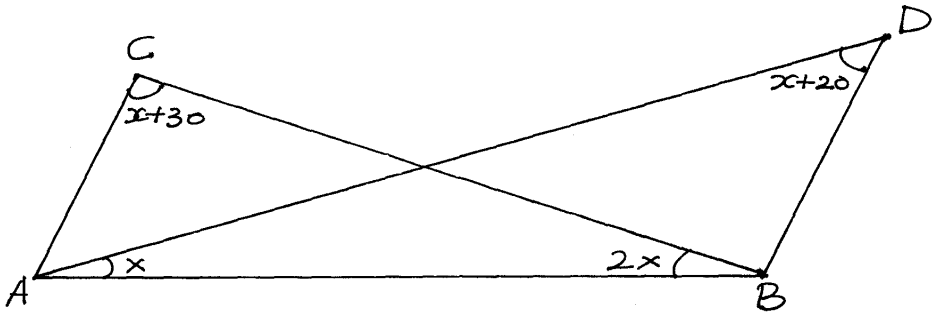
13. Three fifths of work is done on the first day. On the second day $\frac{3}{4}$ of the remainder is completed. If the third day $\frac{7}{8}$ of what remained id done, what fraction of work still remain to be done. **(3mks)**

14. A two-digit number is such that the sum of the digits is ten. If the digits are reversed, the new number formed is less than the original number by 18. Find the number **(3mks)**

15. In the figure bellow, $\angle CBD = 2\angle CAD$. Find the value of *x* **(3mks)**



16. Two boys, Ababu and Chungwa, on the same side of a tall building are 100m apart. The building and the two boys are in a straight line and the angles of elevation from the boys to the top of the building are 30° and 20° respectively calculate the height of the building. **(3mks)**

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SECTION II (50 MARKS)

Attempt only five Questions from this section

17. A business lady bought 100 quails and 80 rabbits for sh25600. If she had bought twice as many rabbits as half as many quails she would have paid sh7400 less. She sold each quail at a profit of 10% and each rabbit at a profit of 20%.

a) Form two equations to show how much she bought the quails and the rabbits. **(2mks)**

b) Using matrix method, find the cost of each animal. **(5mks)**

c) Calculate the total percentage profit she made from sale of the 100 quails and 80 rabbits. **(3mks)**

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18. A(3,7) B(5,5), C(3,1), D(1,5) are vertices of a quadrilateral

a) On the grid provided below, plot ABCD on a Cartesian plan **(2mks)**

b) $A^1B^1C^1D^1$ is the image of ABCD under a translation T $\begin{pmatrix} -6 \\ -9 \end{pmatrix}$ plot $A^1B^1C^1D^1$and state its coordinates **(2mks)**

c)Plot $A^{11}B^{11}C^{11}D^{11}$ the image of $A^1B^1C^1D^1$ after a rotation about (-1,0) through a positive quarter turn. State its coordinates. **(3mks)**

d) $A^{111}B^{111}C^{111}D^{111}$ is the image of $A^{11}B^{11}C^{11}D^{11}$ after a reflection in the line y=x+2. Plot $A^{111}B^{111}C^{111}D^{111}$ and state its coordinates **(3mks)**

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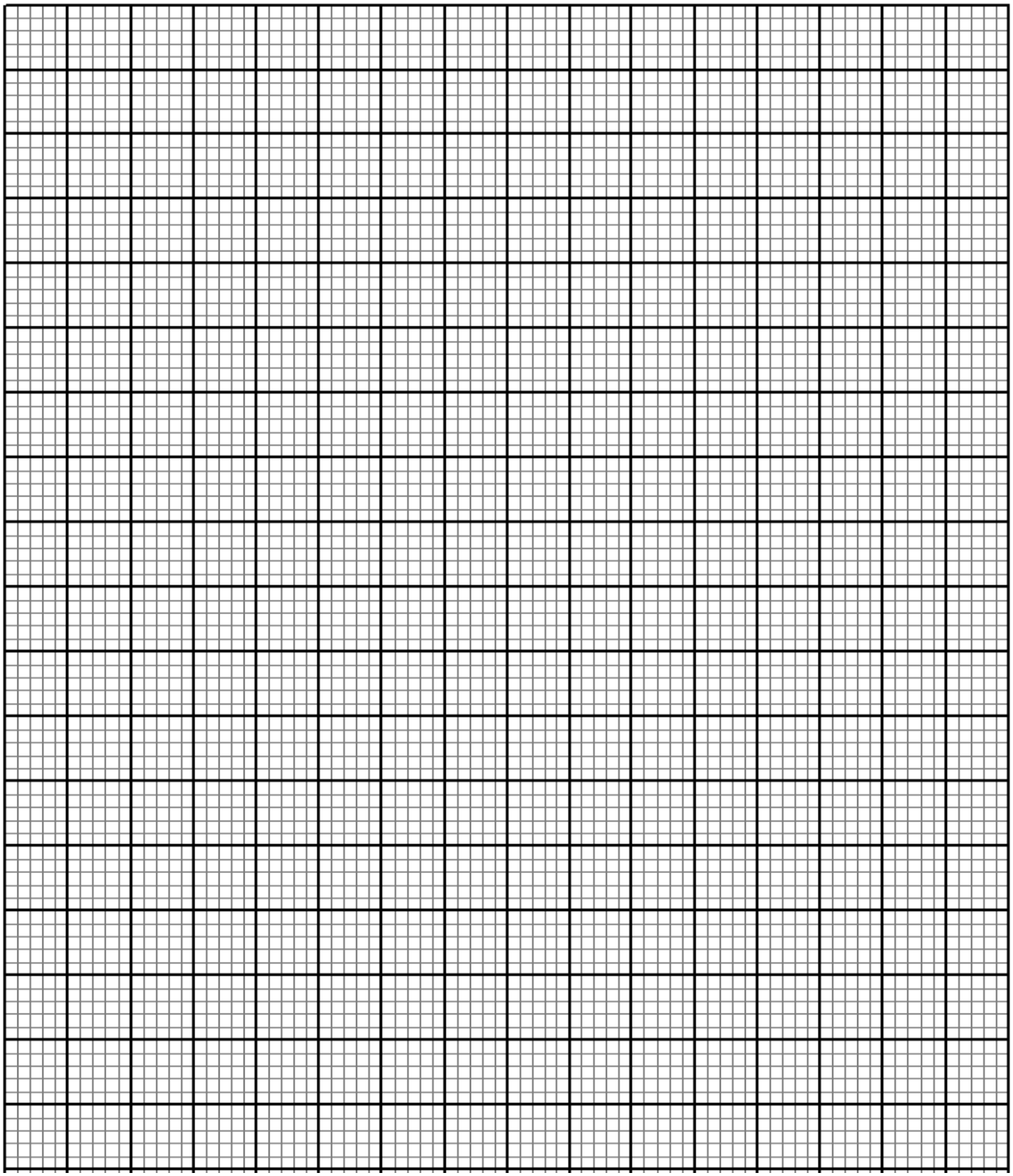

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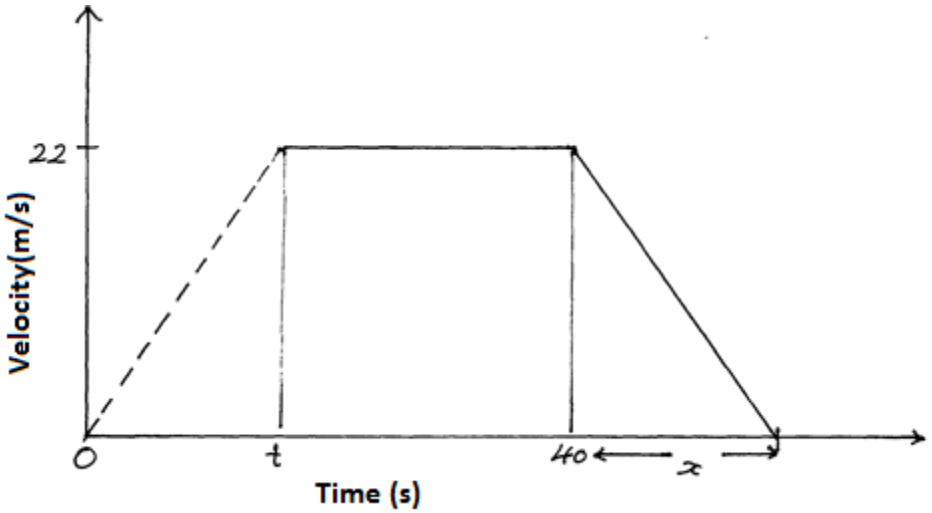
19. The figure below shows a velocity time graph of a journey of a car. The car start from rest and accelerates at $2\frac{3}{4} m/s^2$ for t seconds until it is 22m/s



Brakes are applied bringing it uniformly to rest. The total journey is 847m long. Find.

a) The value of t, the acceleration time **(2mks)**

b) The distance travelled during the first t seconds. **(2mks)**

c) The value of *x*, the deceleration time **(4mks)**

d) The rate of deceleration **(2mks)**

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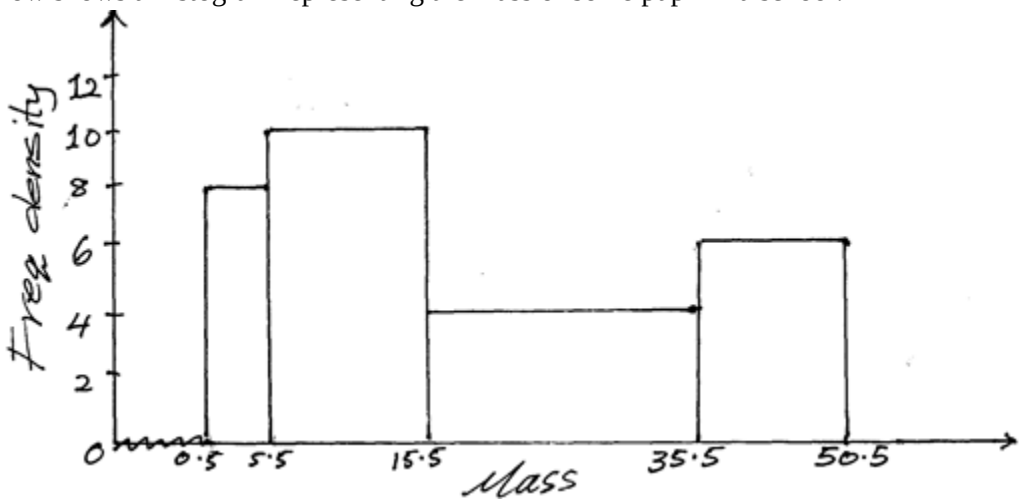
20. The diagram below shows a histogram representing the mass of some pupil in a school.



a)Prepare a frequency distribution table of the data **(3mks)**

b)From the table above, estimate

i) The mean mass of the pupils to 3 s.f **(3mks)**

ii) The median mass **(3mks)**

iii) How many pupils were 40kg and above **(1mk)**

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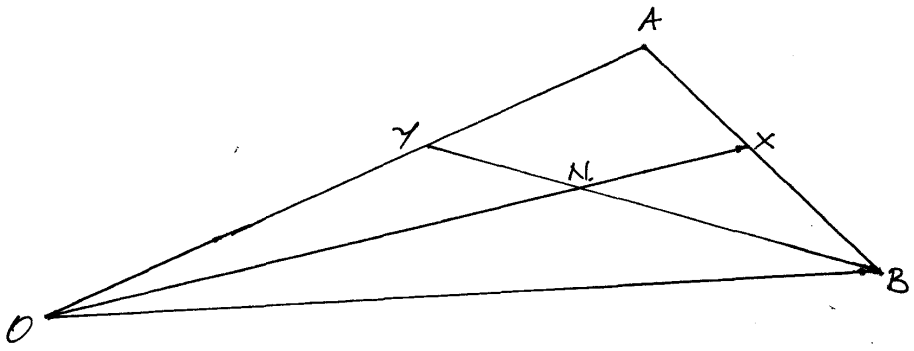
21. In the figure below **OY**:**YA**=1:3 AX:XB=1:2 **OA**= $\underset{\sim}{a}$ and **OB**= $\underset{\sim}{b}$. N is the point of intersection of **BY** and **OX**



a)Determine

i) **OX** **(2mks)**

ii) **BY** **(1mk)**

b)Give that $\vec{BN} = k\,\vec{BY}$ and **ON**=hOX, express $\vec{ON}$ in two ways in terms of $\underset{\sim}{a}\ \underset{\sim}{b}, h \text{ and } k$ **(3mks)**

c)Find the value of h and k and hence show that O,N and X are collinear **(4mks)**

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22. Using a ruler and a pair of compass only, construct triangle XYZ where XY is 6cm and XYZ is 135° and YZ=7cm **(2mks)**

a) Measure XZ **(1mk)**

b) Drop a perpendicular from Z to meet line XY at K , measure ZK. **(2mks)**

c) Bisect line XY and let the bisector meet line XZ at Q **(1mk)**

d) Join Q to Y and measure angle XQY **(2mks)**

e) Find the area of triangle XYZ **(2mks)**

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23. Four towns are situated in such that a way that town Q is 500km on a bearing of 120° from P. Town R is 240 km on a bearing of 210° from town P, while town S is due north of town Q and due east of town P

a) Draw a sketch diagram showing the relative position of P,Q,R and S (scale:1cm :100km) **(3mks)**

b) Find by calculation

i) The distance QR **(1mk)**

ii) The distance QS **(2mks)**

iii) The angle PRSQ **(2mks)**

iv) The area of triangle PQS **(2mks)**

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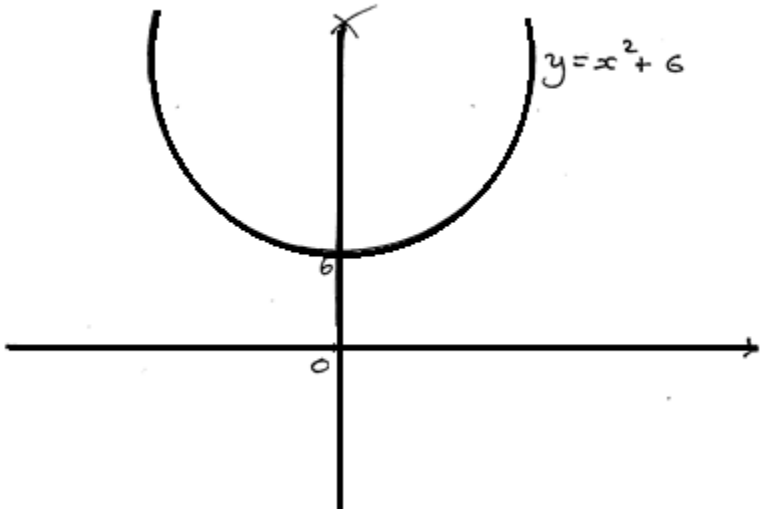
24. The figure below shows a sketch of the graph of $y = x^2 + 6$.



a) Estimate the area bounded by the curve, the *x*-axis and the line *x* =-4 and *x*=4 using

i) The trapezium rule with 8 sides **(3mks)**

ii) The mid- ordinates rule with and strips **(3mks)**

b) What percentage error is caused by estimating the area of the curve using the mid ordinates rule as in a (ii) above **(4mks)**

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SCHOOL: ……..

INDEX NO: ……..... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

121/2
MATHEMATICS ALT. A
Paper 2
Time: 2 ½ Hours

Kenya Certificate of Secondary Education.(K.C.S.E
MATHEMATICS ALT. A
Paper 2

INSTRUCTION TO CANDIDATES

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

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** the questions in Section I and any **FIVE** questions in Section II.

e) Show all the steps in your calculations, giving your answer at each stage in the spaces provided below each question.

f) Marks may be given for correct working even if the answer is wrong.

g) Non-programmable silent electronic calculators and KNEC Mathematical tables may be used
except where stated otherwise.

h)Candidates should answer the questions in English.

i)Candidates must check the question paper to ascertain that all pages are printed as indicated and that no question(s) is/are missing

FOR EXAMINER'S USE

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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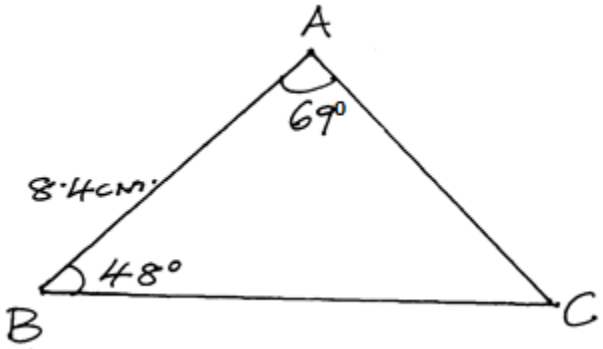
SECTION A (50MARKS)

Answer All Questions in this section

1. The area of a rectangle is 48.4cm^2 and its length is 9.37cm. Calculate the percentage error in width **(3mks)**

2. The base of a triangle is $(3x-2)$cm. The height of the triangle is 5cm shorter than its base. Given that the area of the triangle is 25cm^2. Find length of the base. **(4mks)**

3. Find the area of the triangle shown below **(3mks)**



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4. Express the following expression in surd form and simplify by rationalising the denominator

$$\frac{2}{1-\tan 30}$$ **(3mks)**

5. Solve for x in the expression $(\log_2 x)^2 + \log_2 x^3 = 10$ **(3mks)**

6. The table below is part of the tax for monthly income for the year 2007

Monthly income (ksh)	Rate %
Under ksh 10165	10
From 10165 but under ksh19741	15
From 19741 but under ksh29317	20

In that year, John's monthly gross tax was Ksh 2885. Calculate his monthly income **(3mks)**

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7. A quantity E is partly constant and partly variaes as square root of F.

i) Write down an equation connecting E and F where K and C are constants respectively.

ii) If F=25 where E=22 and F=49 when E=28. Find the value of K and C **(3mks)**

8.a) Expand $\left(1+\frac{1}{2}x\right)^7$ in ascending power of x **(1mk)**

b) Using the first four times of the expansion in (a) above estimate the value of $\left(1\frac{1}{30}\right)^7$ **(2mks)**

9. Find the number of terms of the series 5+8+11+14+17+…….. that will give a sum of 2183 **(3mks)**

10. Find the inverse of the matrix $M=\begin{pmatrix}4 & -3\\ 2 & 1\end{pmatrix}$ hence find the co-ordinates of the point at which line $4x-3y=4$ *and* $2x+y=7$ intersect **(3mks)**

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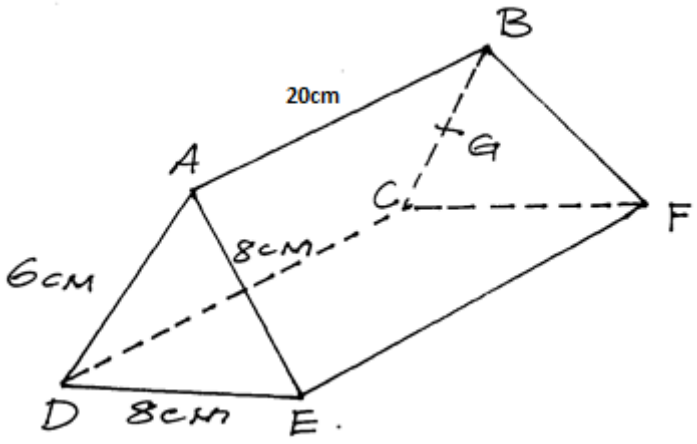
11. A trader mixed grade I, II and III of coffee in the ratio 2:3:5 respectively. Grade I cost Sh650 per kg, grade II costs sh 500 per kg and grade III costs sh 420 per kg.

a)Find the cost of one kg of the mixture **(2mks)**

b)If the trader sold the mixture at a profit of 20% calculate the selling price of 3kg of the mixture **(2mks)**

12. Solve for the equation $4\cos^2 x = 5 - 4\sin x$ for $0^o \leq x \leq 360$ **(3mks)**

13. The figure below has a cross-section of the prism which is an isosceles triangle of side AE= 8cm, DE= 8cm and AD=6cm, where AB=20cm



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a)If G is the mid- point of side BC find

i) GF **(1mk)**

ii) AG **(1mk)**

b)The angle between line DF and plane ABCD **(2mks)**

14.a) Construct triangle PQR in which PQ=QR=5cm and angle PQR=90° **(2mks)**

b)Draw the locus of S which moves in such a way that it is always on the same side of PR as Q and angle $P\hat{S}R = 45^o$ **(1mk)**

15. Determine the amplitude and period in the function $y = \frac{1}{2}\sin(3x - 60)$ **(2mks)**

16. Two towns P and Q are located on the equator such that P is due east of Q. The distance between the two towns is 1920nm. If the latitude of p is 50°E. Determine the longitude of Q **(3mks)**

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SECTION B (50 MARKS)

Answer any five questions from this section

17. The cost of Jane's car at the beginning of year 2000 was sh 750,000. It depreciated in value by 7% per year for the first 3 years, by 8% for the next two years and 11% per year for the subsequent years.

a) Find the value of the car at

i) The start of the year 2003 **(2mks)**

ii) The end of year 2007 **(3mks)**

b) At the beginning of 2008, Jane sold the car through Mary,s dealers at 22% more than its actual depreciated value to Lucy. Taking Mary's sale price as the car's value after depreciation. Find the average monthly rate of depreciation for the 8years. **(5mks)**

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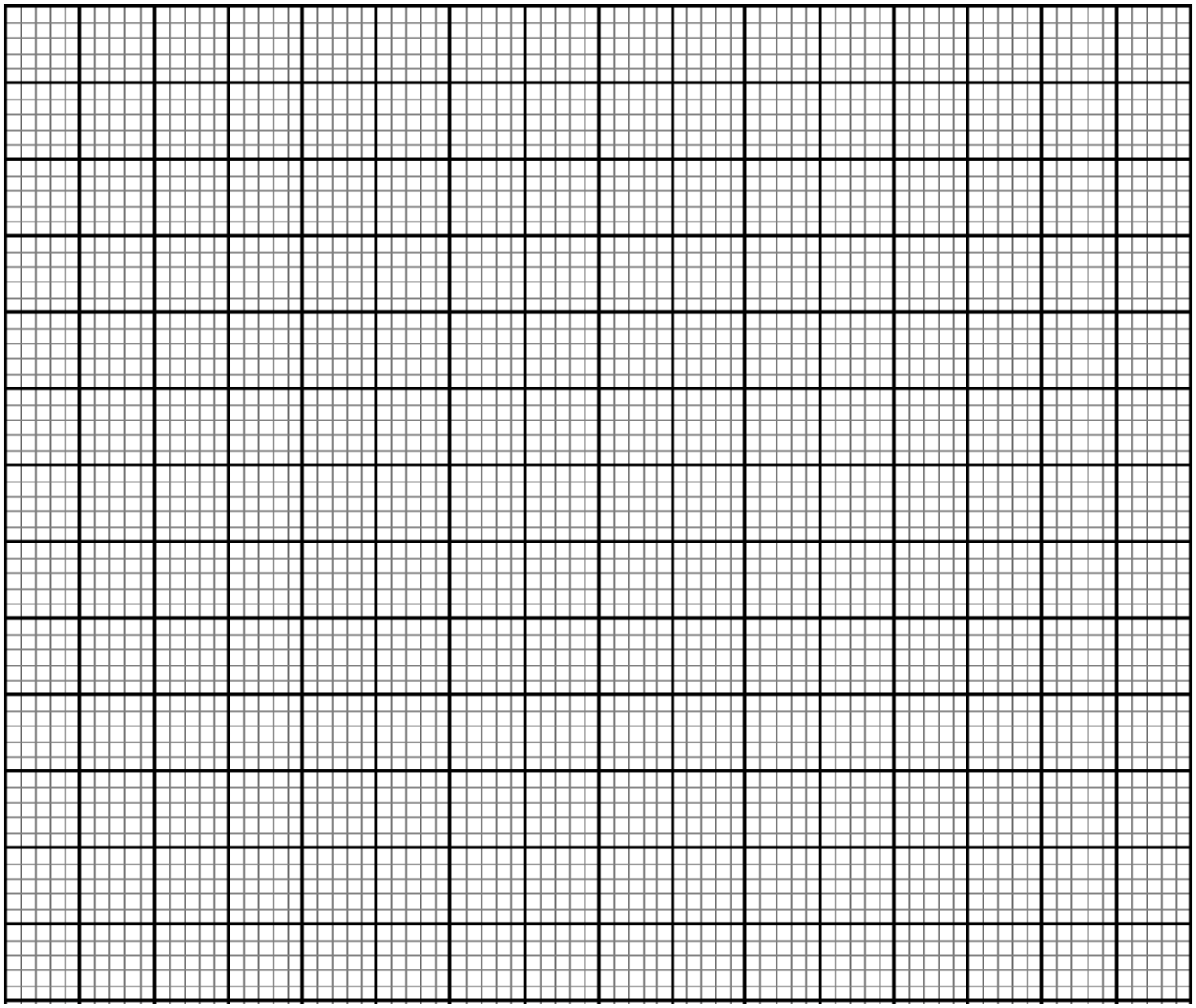
18. MNP is a triangle with vertices M,(2,2),N(2,-2) and P(-1,-4). Draw the triangle MNP. **(1mk)**

a)If vertex N(2,-2) is mapped to N^1 (5,-2) by a shear with x-axis invariant, draw triangle $M^1N^1P^1$, the image of triangle MNP under the shear. **(2mks)**



b)Find the matrix that represent the shear in (a) above **(2mks)**

c)A transformation where matrix is $T = \begin{pmatrix} 0 & 1 \\ 1 & 1.5 \end{pmatrix}$ maps triangle $M^1N^1P^1$ onto $M^{11}N^{11}P^{11}$. Draw the triangle $M^{11}N^{11}P^{11}$

(3mks)

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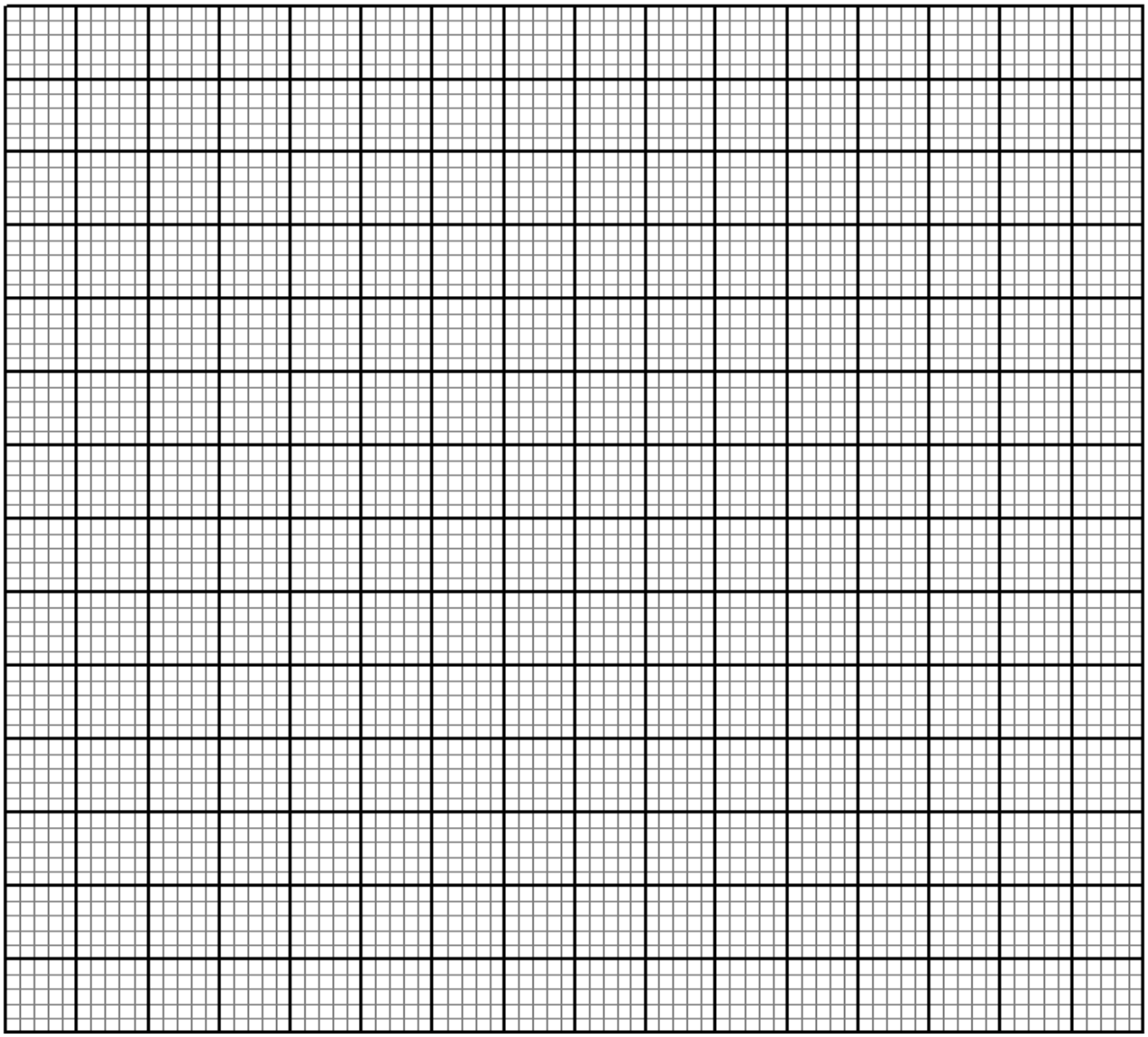
d) Describe fully a single transformation that maps triangle $M^{11}N^{11}P^{11}$ back onto triangle MNP and give its transformation matrix. **(2mks)**

19. Complete the table below for the equation $y = x^3 - 3x^2 - 5x + 7$ **(2mks)**

x	-3	-2	-1	0	1	2	3	4	5
y	-32		8	7	0		-8		32

b) Draw the graph of $y = x^3 - 3x^2 - 5x + 7$ **(3mks)**



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c) Use your graph to estimate the roots of the equation $x^3 - 3x^2 - 5x + 7 = 0$ **(2mks)**

d) Use your graph to solve the equation $x^3 - 3x^2 - 10x + 17 = 0$ **(3mks)**

20. The table below shows marks scored by 40 students in a test

Marks	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
frequency	1	5	8	12	7	4	2	1

a) Calculate the upper quartile and lower quartile **(4mks)**

b) If 30% of students failed the test, find the pass mark **(3mks)**

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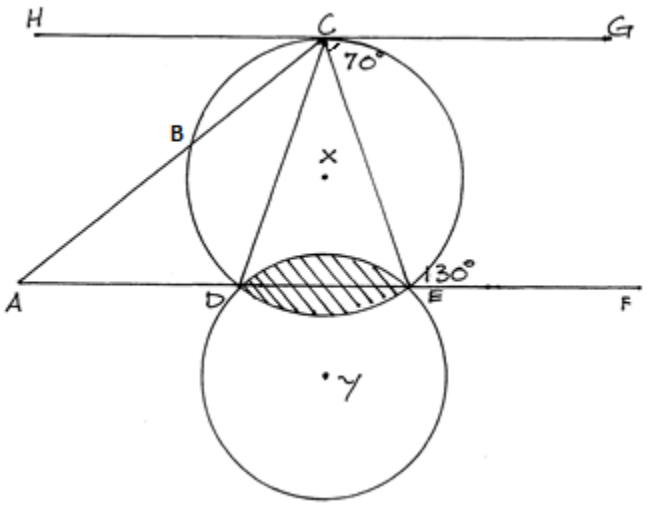
c)The pass mark was set at 25 marks. How many students passed the test. **(3mks)**

21.) The diagram below shows two intersecting circles with centres X and Y. HG is a tangent to the circle centre X at C. Angle GCE=70° and angle CEF=130°. Given that CB=5cm, BA=4cm, AE=12cm and radius DY=6cm.



a)Determine

i) Angle DXE **(2mks)**

ii) Length DE **(2mks)**

iii) Angle DYE **(2mks)**

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b) Calculate the area of the shaded region (take $\pi = \frac{22}{7}$) **(4mks)**

22.a) Wekesa has two fair tetrahedral solids one red and other green. The faces of red solid are numbered 1to 4 while the faces of green solid are numbered 2,3,5 and 6. He tosses the two solids at the same time and recorded the number that is the bottom face of each solid. If **k** is the number that is at the bottom face of red solid while **t** is the number that is at the bottom face of green solid, find the probability that

i) 2k+t=7 **(1mk)**

ii) (2k+t) is at most 9 **(1mk)**

iii) $2k \geq t$ **(2mks)**

b) In a group of 40 people, 10 are healthy and every person of the remaining 30 has either high blood pressure, a high level of cholesterol or both. Given that 15 have high blood pressure, 25 have high level of cholesterol and x have both. If a person is selected at random from this group. What is the probability that he/ she

i) Has high pressure only **(2mks)**

ii) Has high level of cholesterol only **(1mk)**

iii) Hass high blood pressure and high level of cholesterol **(1mk)**

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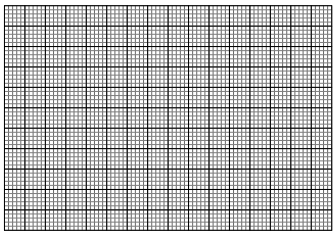
iv) Has either high blood pressure or high level of cholesterol **(2mks)**

23.A company was contracted to transport 1200 tonnes of sand. The company used type A and type B trucks to do the job. Each type A truck carries 10 tonnes of sand per trip while B curries 15 tonnes per trip. The total number of trips must not be less than 70 and type B truck must make at least twice as many trips as type A truck while the later must make not less than 10trips. Taking x to represent the number of trips made by type A trucks and y to represent the number of trips made by type B trucks

a) Write down all the inequalities representing the above information **(4mks)**

b) Represent the inequality graphically **(4mks)**



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c) The company makes a profit of sh2000 per trip made by each type A truck and sh 3000 per trip made by each type B truck.

i) Using a search line, determine the number of trips each type of truck must be made to maximise the profit **(1mk)**

ii) Hence calculate the maximum profit **(1mk)**

24.a) Find the area of the region bounded by the cuver $y = x^3 - x$ and the axes between the point x=-1 and x=1 **(4mks)**

b) At a certain instant a body is moving in a straight line at 20cm/s. Its acceleration during the first 5seconds of the subsequent motion is (30-6t) cm/s^2 where t is the time in seconds. After 5 seconds it travels with a constant speed. Find

i) Its velocity after 2seconds **(2mks)**

ii) The greatest velocity attained **(2mks)**

iii) The distance travelled in 10 seconds **(2mks)**

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SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

232/1
PHYSICS pp1
PAPER 1 (THEORY)
2 HOURS

Instructions to candidates

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

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

(c) This paper consist of **two** section **A** and **B.**

(d) Answer **all** the questions in section **A** and **B** in the spaces provided.

(e) All working **must** be clearly shown.

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

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

For examiners use only.

Question	Maximum score	Candidate's score
1-12	25	
13	10	
14	12	
15	12	
16	12	
17	9	
TOTAL	**80**	

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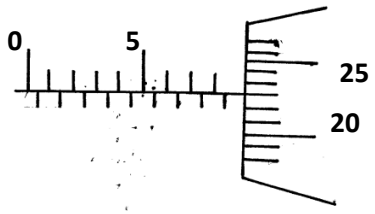
SECTION A (25 MARKS)

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

(Take g=10N/kg or $10m/s^2$)

1.Figure 1 below shows the reading from a micrometer screw gauge that has a zero error of –0.25mm. What is the actual diameter of the object. **(2mks)**

Figure 1.



2. Two table tennis balls hang at the same level suspended from a thread a short distance apart. A stream of air is blown between the balls. State and explain what happen to the balls. **(2mks)**

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3. Give a reason why heat transfer by radiation is faster than heat transfer by conduction. **(1mk)**

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4. Distinguish between density and relative density **(1mk)**

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5. State and explain how the motion of the smoke particles changes when the temperature inside the smoke cell is lowered. **(2mks)**

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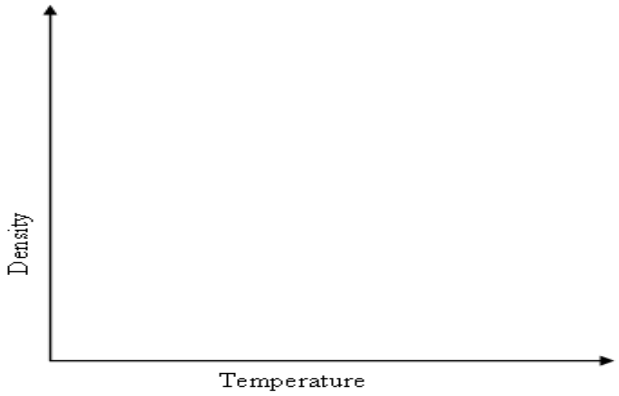
6. On the axes provided sketch density-temperature graph, when water is heated from a temperature of 0°C to 10°C. Show the temperature at which water has the highest density. **(2mks)**



7. A uniform metre rule whose mass is 150g is balanced by suspending a 10g mass and a 20g mass on its ends as shown in figure 2 below.

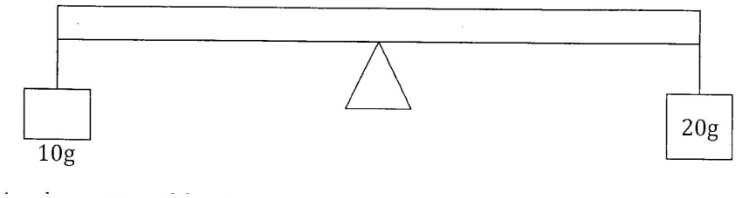


Figure 2.

Determine the position of the pivot. **(3mks)**

8 Figure 3 below represents a simple fire alarm. Explain how it works. **(3mks)**

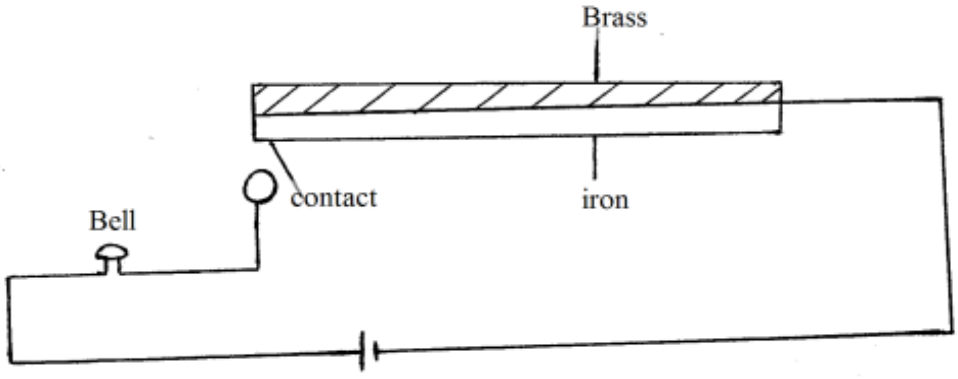


Figure 3.

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9 . Figure 4 below shows a section of a pipe with different cross-sectional areas. If water flows with a velocity of 5m/s in section A, what would be the velocity of water in section B? **(2mks)**

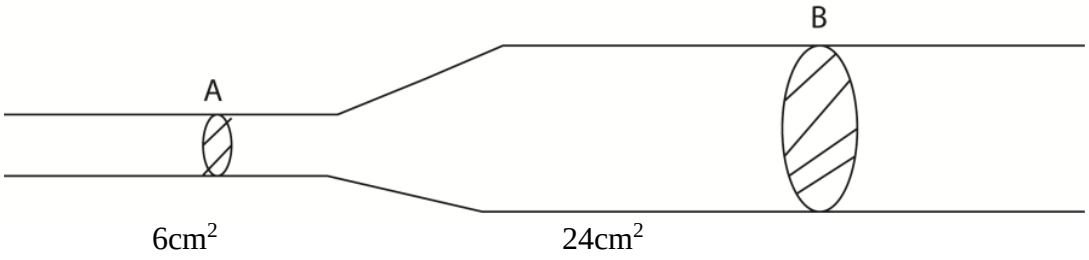

Figure 4.

10. State two factors that would raise the boiling point of a liquid. **(2mks)**

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11. A car of mass 1500kg negotiates a level roundabout of radius 40m at a speed of 72km/h. Calculate the centripetal force acting on the car**.** **(3mks)**

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12. A spring of elastic constant ***K*** has its length increased from 4.00m when unloaded to 4.25m when loaded with a 75N weight. Assuming that the elastic limit is not exceeded, determine the value of K. **(2mks)**

SECTION B (55 Marks)

Answer all questions in this section in the spaces provided

13. (a)(i) State the law of flotation **(1mk)**

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(ii) Explain why a hollow metal sphere floats on water while a solid metal sphere of the same material sinks in water. **(2mks)**

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(b) Figure 5 below shows a uniform block of uniform cross-sectional area of $6.0cm^2$ floating on two liquids A and B. The lengths of the block in each liquid are shown. Given that the density of liquid A is $800kg/m^3$ and that of liquid B is $1000kgm^{-3}$ determine the:

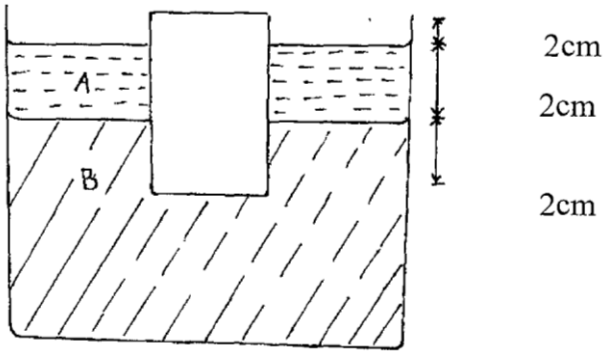

Figure 5.

(i) Weight of liquid A displaced **(2mks)**

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(ii) Weight of liquid B displaced **(2mks)**

(iii) Density of the block **(3mks)**

14. Figure 6 shows a fair ground ride trolley **M** of mass 120Kg carrying two passengers of average mass 40Kg released at point ***P*** of a frictionless curved surface ***S***. Upon reaching the horizontal, it collided with a stationery trolley **N** of mass 140Kg carrying three passengers of average mass 60Kg. If the two trolleys moved together with a common velocity along the horizontal for 1.2 seconds before coming to rest, determine:

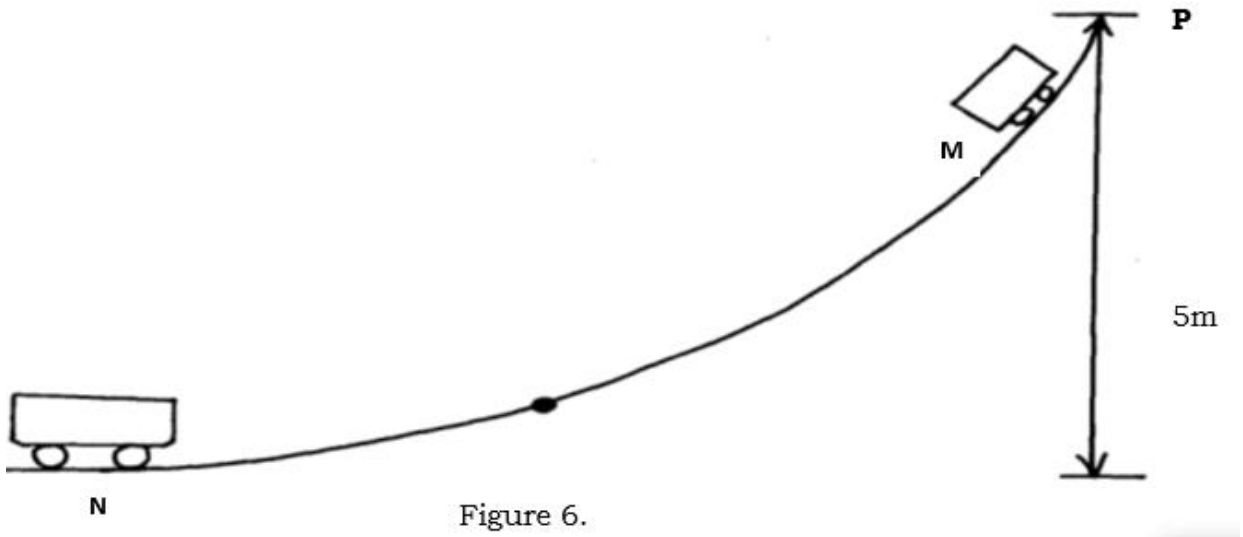

Figure 6.

a) The gravitational potential energy of the trolley at point ***P*** **(3mks)**

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(b) The velocity of trolley ***M*** just before it collides with trolley ***N*** **(3mks)**

(c) The common velocity of the two trolleys after collision**.** **(3mks)**

(d) The impulse **(3mk)**

15 a) State the difference between evaporation and boiling. **(1mk)**

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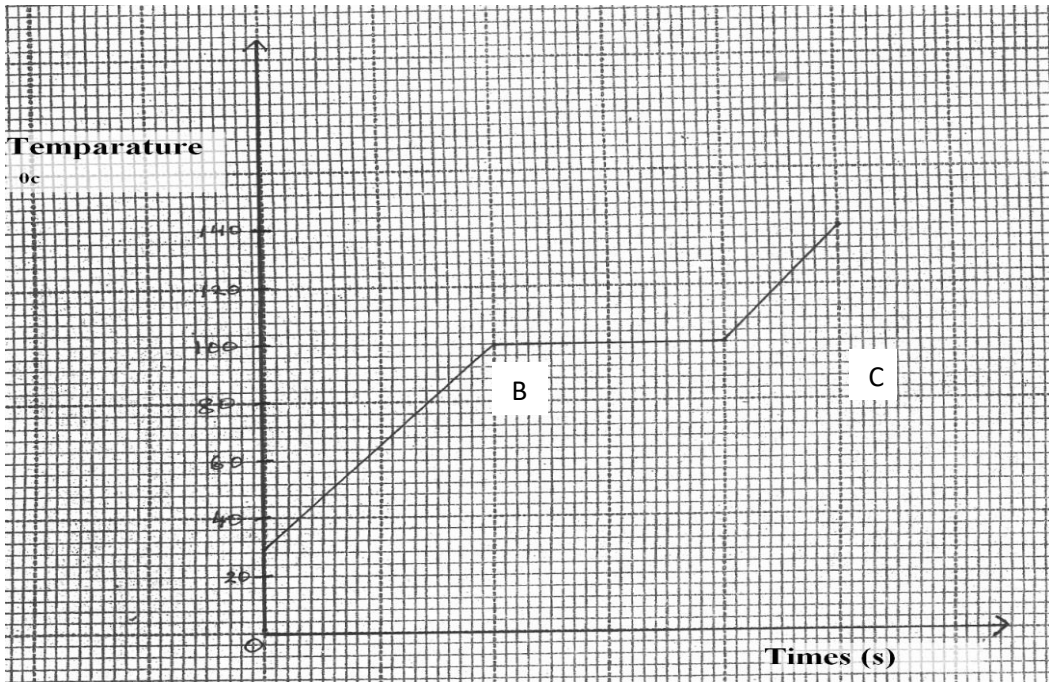
b) The graph below shows the boiling process of water, Use it to answer the questions that follow.



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(i) State the room temperature from the graph. **(1mk)**

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ii) State what is happening along BC in the graph **(1mk)**

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c) 50g of stream at 100^0C was passed into cold water at 20^0C. The temperature of the mixture was 50^0C. Taking specific heat capacity of water as 4200 J kg^{-1} K^{-1} and specific latent heat of vapourisation of water as 2260 $kJkg^{-1}$ and ignoring heat losses, determine.

i) Quantity of heat lost by the steam. **(3mks)**

ii) Quantity of heat transferred from the condensed steam to the cold water **(3mks)**

iii) Mass of the cold water **(3mks)**

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16. a) Define centripetal acceleration . **(1mk)**

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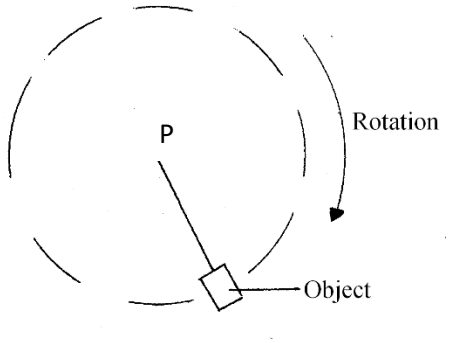
b) An object of mass 400g revolves uniformly on a horizontal frictionless surface. It is attached by a cord 20 cm long to a fixed point P.



i) Mark and label on the diagram the direction of centripetal force **F** and linear velocity ***V***. **(2mk)**

ii) The object makes 6 revolutions per second. Determine the angular velocity of the object. **(2mks)**

c) A stone is tied to a light string of length 0.5 m. If the stone has a mass of 20g with a uniform angular velocity of 6 revolutions per second, determine.

i) The period **(2mks)**

ii) The tension of the string when the stone is at the bottom of the swing. **(3mks)**

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d) State **two** factors affecting centripetal force. **(2mks)**

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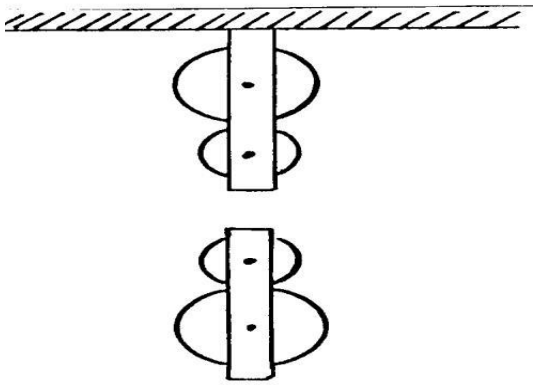
17. a) Complete the diagram below to show how the pulley can be used to raise a load, **L** by applying an effort, **E**. **(1mk)**



a) The pulley system above has a mechanical advantage of 3. Determine;

(i) the velocity ratio of the system**.** **(1mk)**

(ii) the efficiency of the system**.** **(2mks)**

(iii) the effort when a load of 60N is raised. **(2mks)**

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(c) The reading on a mercury barometer at a place is 700 mm. The barometer contains some air which exerts a pressure of $10N/m^2$. Determine the pressure at that place in N/m^2 **(3mks)**

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SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

232/2
PHYSICS
FORM FOUR
PAPER 2 (THEORY)
2 HOURS

Instructions to candidates

(a) *Write your name and Admission number in the spaces provided above.*
(b) *Sign and write the date of examination in the spaces provided above.*
(c) *This paper consist of **two** section **A** and **B.***
(d) *Answer **all** the questions in section **A** and **B** in the spaces provided.*
(e) *All working **must** be clearly shown.*
(f) *Mathematical tables and electronic calculators may be used.*
(g) ***Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***

For examiners use only.

Question		Maximum score	Candidate's score
SECTION A	1-14	25	
	15	13	
	16	12	
	17	11	
	18	9	
	19	10	
TOTAL		80	

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SECTION A (25MKS)

Answer all questions in this section

1. Figure 1 below shows an object O placed in front of a plane mirror. A ray of light is drawn coming from object O and striking the mirror at P. After striking the mirror, the ray of light is reflected

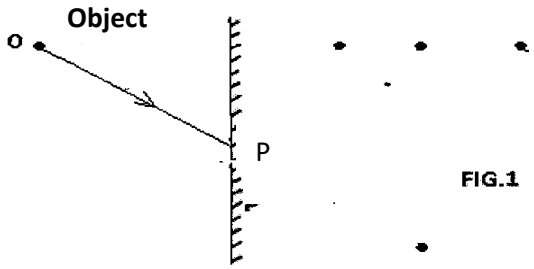

FIG.1

(i) Which of the four dots represents correct position of the image of O? label this dot **Q** **(1mk)**

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(ii) By drawing a line on the diagram above to represent ray at P, mark the angle of reflection and label it r. **(1mk)**

2. A charged conductor is slowly brought near the cap of a positively charged electroscope. The leaf first collapses and then diverges. State the charge on the conductor **(1mk)**

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3. Give a reason why it is necessary to leave the caps of the cells open when charging an accumulator. **(1mk)**

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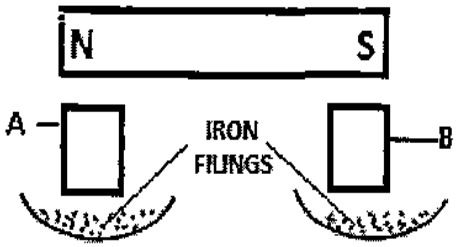
4. Figure 2(a) and 2(b) below shows a simple experiment using a permanent magnet and two metal bars A and B. The permanent magnet was placed close to the iron fillings as shown in Fig 2(a) and then removed. The metal bars attracted the iron filings as shown in Fig 2b.



During attraction

FIG. 2a



After

Fig 2b

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

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5.Figure 3 below shows two parallel current carrying conductors P and Q placed close to one another. Current flows in the opposite directions



Fig. 3

Sketch on the figure the magnetic field pattern formed by the two conductors (1mk)

6.Figure 4 below shows two identical lamps lamps **L1** and **L2** connected to a battery.

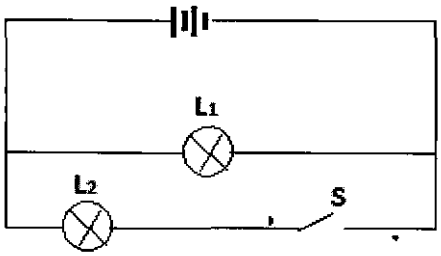

Fig 4

(a) Using an arrow, indicate on the diagram above the direction of the convectional current **(1mk)**

(b) State the effect if any, of closing switch S on L1 **(1mk)**

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7. Figure 5 below shows a ray light incident on water-kerosene interphase

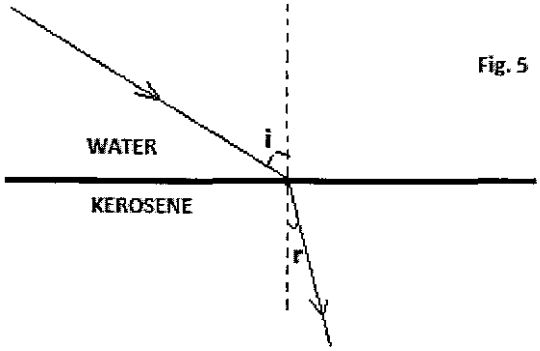

Fig. 5

Fig 5

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State which one of the two liquids has a higher absolute refractive index **(1mk)**

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8.The table in figure 6 below shows part of the electromagnetic spectrum in order of decreasing wavelength.

A	B	INFRA RED RADIATION	VISIBLE LIGHT	C	D

Fig. 6

(a) How are waves **C** produced? **(1mk)**

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(b) State one use of the wave **D** **(1mk)**

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9.The source of sound and two listeners are position close to a tall building as shown in the fig.7

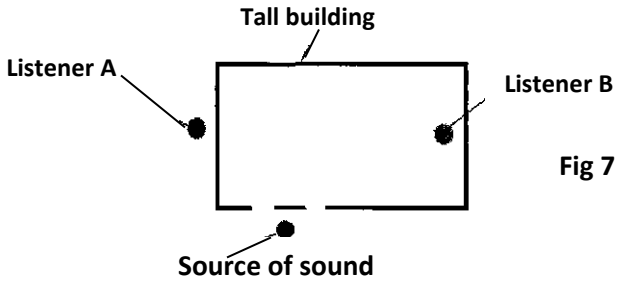

Fig 7

(h) State the property of sound by which Listener A is able to hear the sound produced **(1mk)**

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(ii) Listener **B** is moving directly towards Listener **A** and has a problem hearing the sound produced. Explain **(2mks)**

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10. A house has a lighting circuit operated from a 240V mains supply. Four bulbs rated 40W, 240V and six bulbs rated 100W, 240V are switched on for 5 hours a day. Determine the monthly bill for the consumer given that the cost of electricity is at Kshs.5.50 per unit.
(*Take 1 month= 30 days and the standing charge is sh.150)* **(3mks)**

11. State **two** properties of x-rays similar to those of visible light. **(2mks)**

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12. State any **one** condition under which a pinhole camera may form an image on its screen which has the same size as the object. **(1mk)**

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13.(a) Define the term work function **(1mk)**

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(b) Explain how the intensity of radiation affects the photo-electric effect **(1mk)**

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14. Figure 8 below shows an eye defect

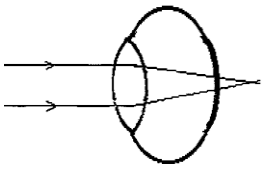

Fig 8

Use a ray diagram to show how the defect above could be corrected **(2mks)**

SECTION B (55 MARKS)

15.a) An object **O** stands on the principal axis of a concave mirror as shown in figure 9 below

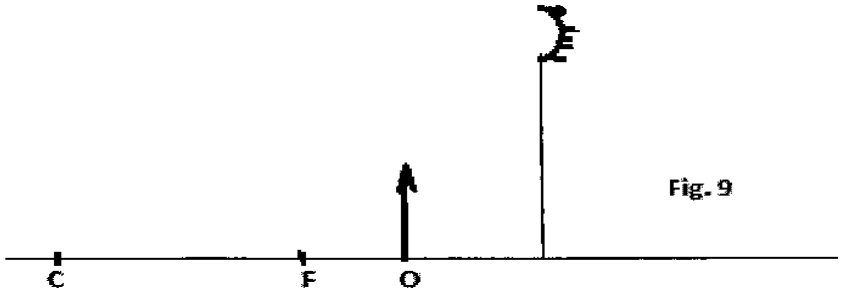

Fig. 9

(i) By drawing suitable rays, show the position of the image **(3mks)**

(ii) Determine the magnification of the image formed **(3mks)**

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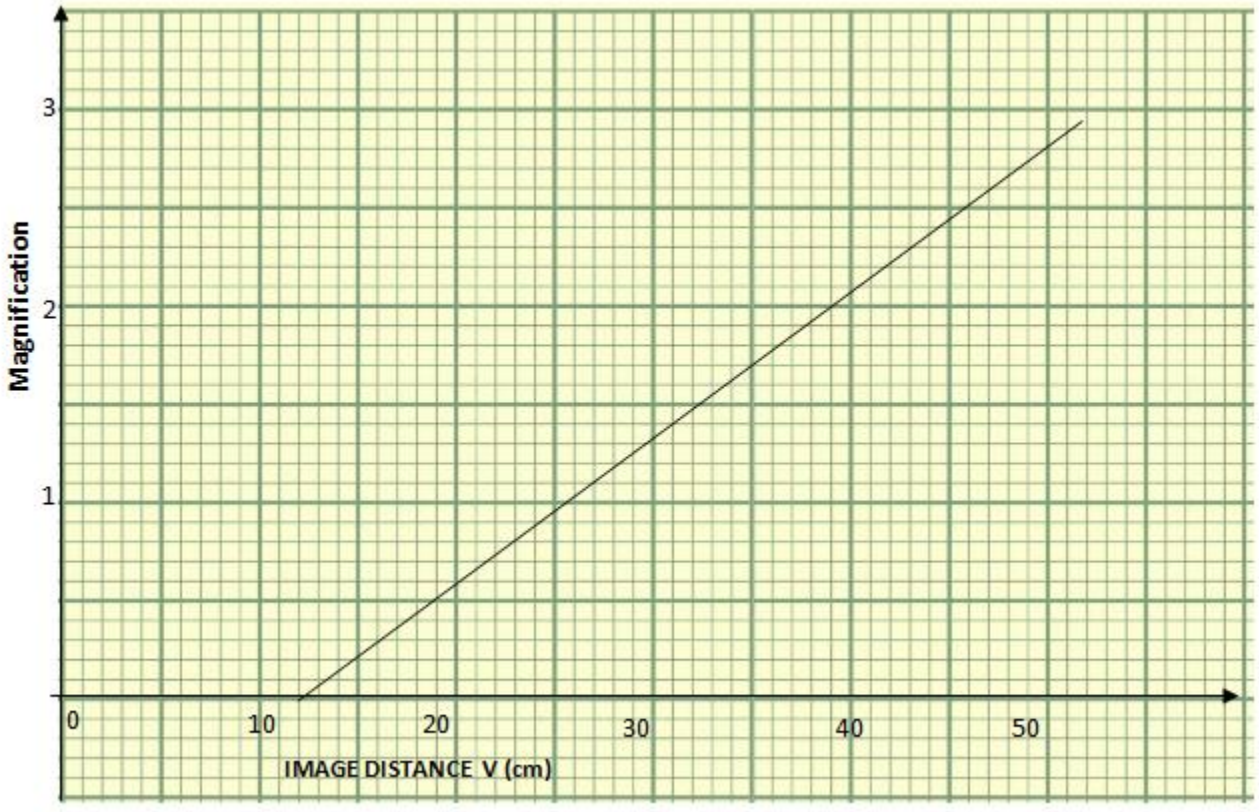
(b) In experiment to determine the focal length of a concave mirror, a group of form two students collected some data and used the results to plot the graph shown in figure 10 below.



Using the graph above, determine:

(i) The object position when the image position is 45cm **(2mks)**

(ii) Slope of the graph **(3mks)**

(iii) The focal length of the mirror**.** **(2mks)**

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16. (a) Students set up a mass attached to a spring such that when it oscillates it taps on water surface in a wide shallow tank as shown in figure 11 below.

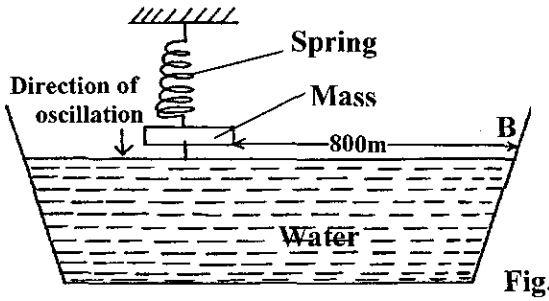

Fig. 11

The students measured time for 20 oscillations and found that the mass takes 36 seconds

Determine

(i) The periodic time of mass **(2mks)**

(ii) The frequency of the waves produced on the water surface **(1mk)**

(iii) The speed of the waves if the students counted four ripples between the mass and end B of the tank **(3mks)**

(b) State any **one** factors that would increase the speed of sound in air **(1mk)**

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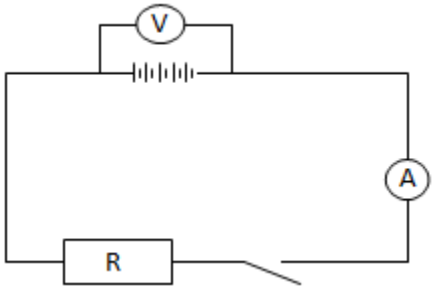
c) It was noted that for the circuit diagram below when S was open the voltmeter gave a reading of 12V but when the switch was closed the voltmeter reading drops to 10V.



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i) Explain why there is a difference in the reading on the voltmeter when the switch is open and when it is closed. **(2mks)**

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ii) Name one example of a non ohmic coductor **(1mk)**

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iii) If the ammeter gave a reading of 0.8A when S is closed, determine the value of R**.** **(2mks)**

17.(a)(i) Define capacitance of a capacitor. **(1mk)**

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(ii) Figure 12 below shows a pair of parallel plates of a capacitor connected to a battery

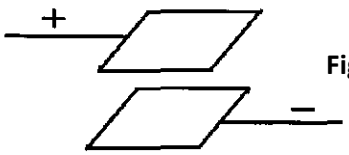

Fig 12

State with a reason the effect of moving the positive plate on the capacitance. **(2mks)**

(I) Vertically downwards

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(II) Horizontally to the left **(2mks)**

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(b) The circuit diagram in figure 13 below shows four capacitors connected between two points **A** and **B**

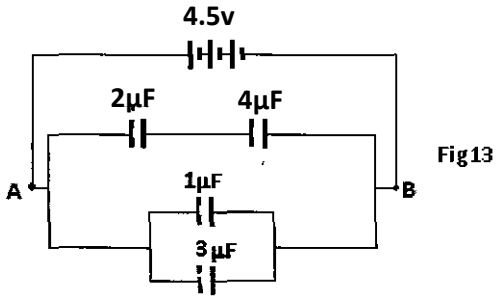

Fig 13

Fig13

i) Determine the capacitance across **AB** **(3mks)**

(ii) Calculate the total energy stored in the 4μF capacitor **(3mks)**

18.(a) A student is provided with two resistors of value 2Ω and 6 Ω

(i) Draw a circuit showing the resistor connection that provides the greatest current flow **(2mks)**

(ii) Calculate the total resistance of the circuit *(assume negligible internal resistance)* **(2mks)**

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(c) Given that the battery in your circuit in a(i) has an e.m.f of 3V and internal resistance 1.2Ω. Calculate the current through

(i) The 6Ω resistor **(3mks)**

(ii) The 2Ω resistor **(2mks)**

19. The graph in the figure 14 below shows the relationship between the attractive forces of an electro magnetizing current

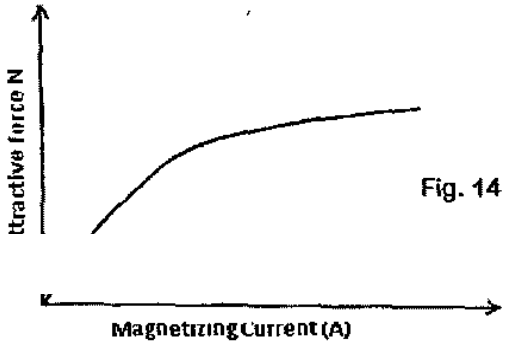

Fig. 14

Fig 14

(a) Give reasons for the shape of the graph by domain theory **(3mks)**

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(b) On the same fig.14, sketch a graph for the case where the soft iron core is replaced with steel. **(2mks)**

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(c) Two similar razor blades were placed one on a wooden block and the other on an iron block as shown in figure 15.

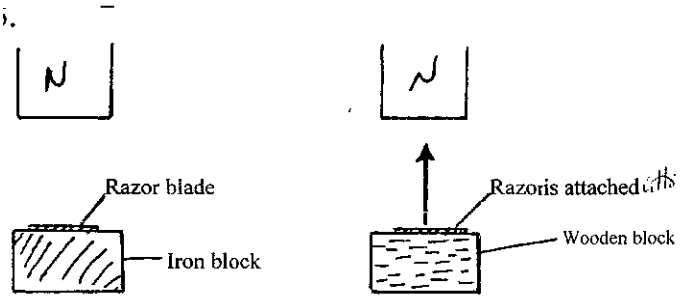

Fig. 15

State and explain the observation on the razor blade;

(i) On the iron block **(3mks)**

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(ii) On the wooden block **(2mks)**

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SCHOOL: ……..

INDEX NO: ……... SIGN: ……..……. DATE: …….

EXCELLING STUDENTS K.C.S.E 2023
PREDICTION SERIES 1

231/3
PHYSICS
PAPER 3
(PRACTICAL)
TIME: 2½ hours

232/3
PHYSICS
PAPER 3
PRACTICAL
TIME: 2½ Hours

Instruction to The Candidates

(a) Write your name and Index number in the space provided above.

(b) Answer all questions in the space provided in the question paper

(c) You are supposed to spend the first 15 minutes of the 2½ hours allowed for this paper reading the whole paper carefully before commencing your work.

(d) Marks are given for clear record of the observation made, their suitability accuracy and the use made of them.

(e) Candidates are advised to record their observation as soon as they are made.

(f) Non-programmable silent calculators and mathematical tables may be used.

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Question 1

Part	h(iii)	V	Vi	V(I)	V(II)	Total
Max score	1	6	5	3	3	18
Students score						

Question 2 A

part	a	b	C(i)	C(ii)	e	f	g	h	Total
Max score	1	2	1	2	2	1	3	3	15
Student's score									

Question 2(B)

part	c	e	f	g(I)	g(II)	Total
Max score	1	1	1	2	3	7
Student's score						

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1 You are provided with the following:

a) Two biconcave lenses,

b) Two lens holders

c) lit candle

d) White screen, I (with cross-wire)

e) White screen (II)

f) A meter rule

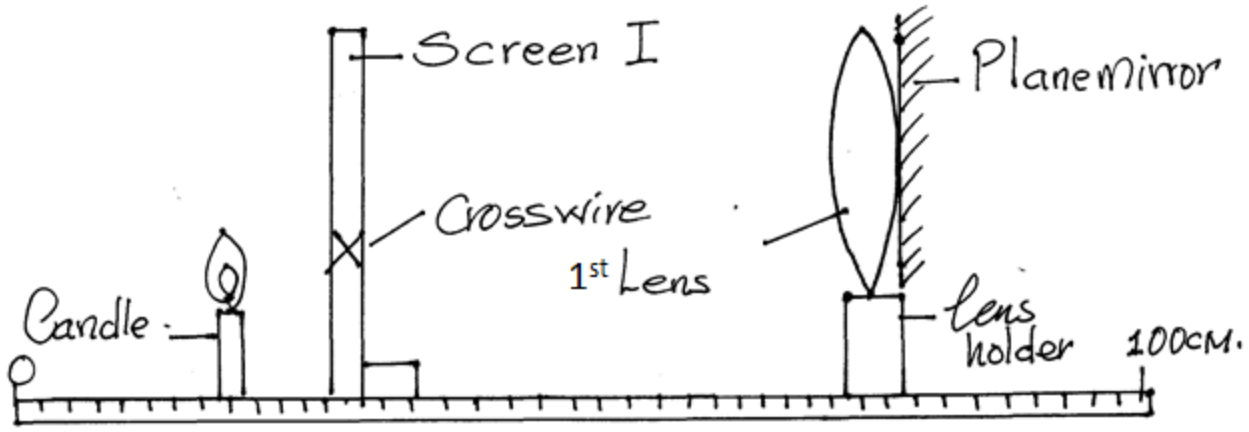
g) A plane mirror

h) Cellotape

Procedure

i) Mount 1st lens in the lens holder. Fix the plane mirror at the back of the lens using cellotape

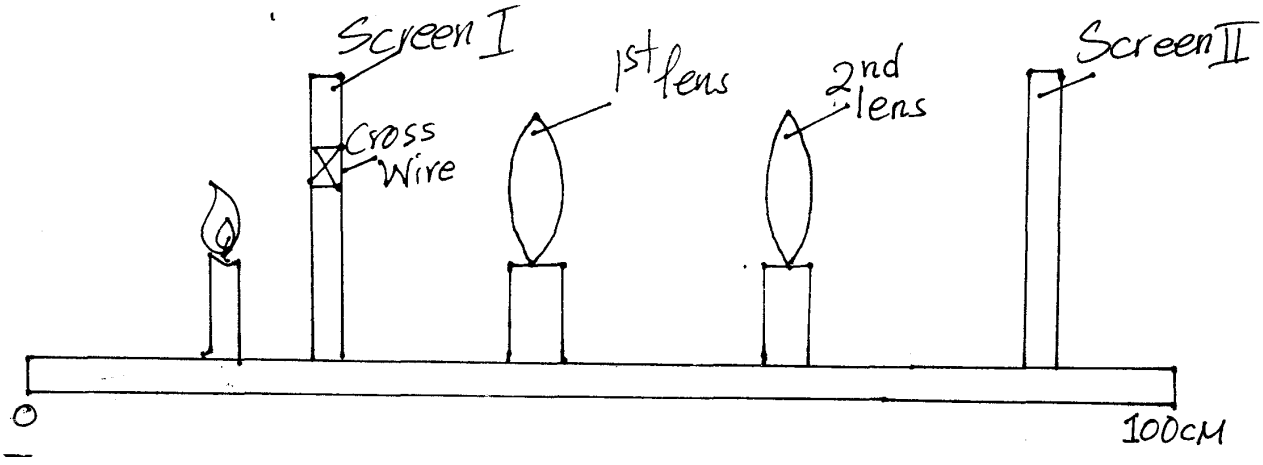
ii) Arrange the setup as shown in figure below.



iii) Adjust the position of the lens with the mirror using a sharp image of the cross-wire is formed on the screen I beside the cross-wires, measure the distance L_1 between screen I and lens A

L_1 …… (1mk)

iv) Remove the mirror from the lens. Re-arrange the candle, screen I, screen II 1st lens and 2nd lens as in the figure below.



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v) Set the distance between screen I and 1st lens to be 40cm ensure this distance is maintained throughout the rest of the experiment. Set the distance between 1st and 2nd lens to be 30cm. Adjust the position of the screen II to obtain a sharp image of the cross – wire on it. Measure the distance V between 2nd lens and screen II. Record values in the table below.

d(cm)	30	35	40	45	50	55	60	65	70
V(cm)									

(6mks)

vi) Plot a graph of V against d **(5mks)**

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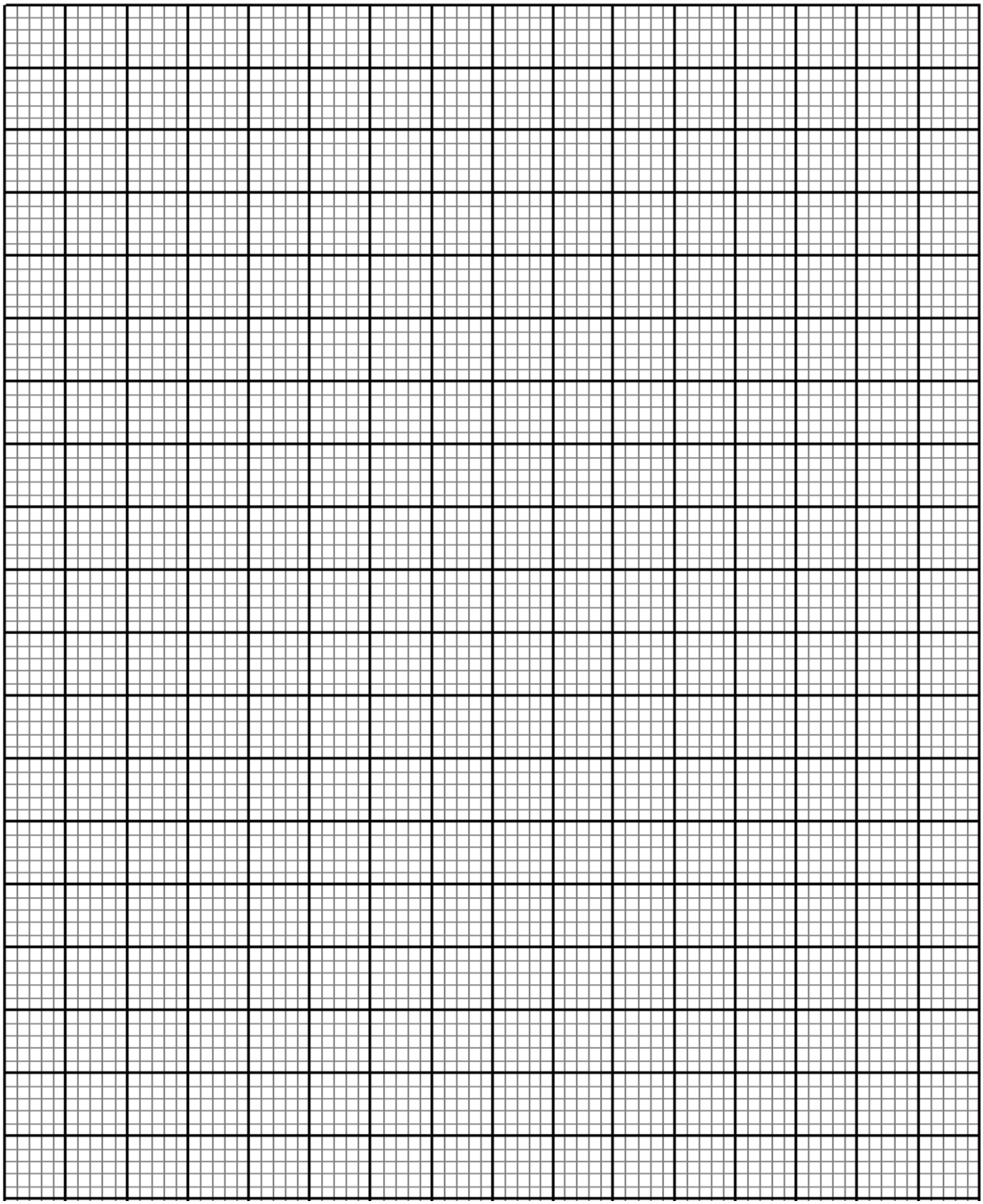

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vii) From the graph, at d=50cm, determine

I)The slope s of the graph **(3mks)**

II) The value of k, given that $K(s-60)^2 = -590$ **(3mks)**

2.A) You are provided with the following.

- A voltmeter
- An ammeter
- A switch
- 2 dry cells
- Cells holder
- Resistor R
- A nichrome wire mounted on mm scale
- 7 connecting wires
- Micrometer screw gauge

Proceed as follows

a) Measure the E.M.F, **E** of a cell **(1mk)**

E=……..

b) Draw the set up you have used to measure the E.M.F. **(2mks)**

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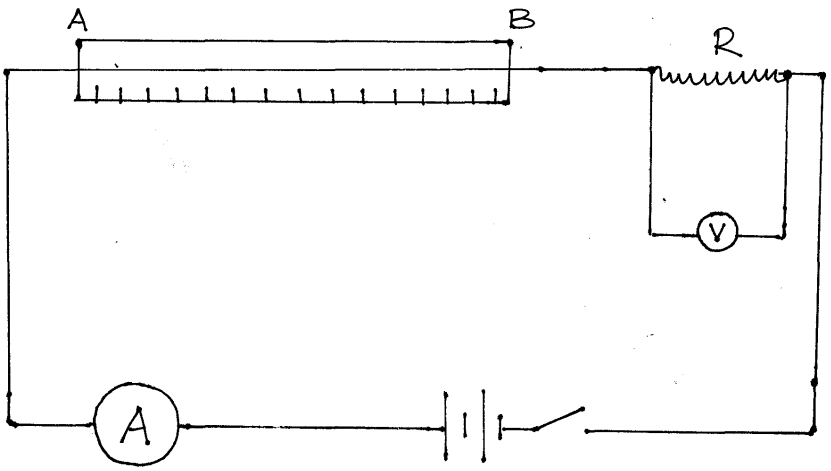
c)I Using micrometer screw gauge provided measure the diameter d of the nichrome wire

d=……mm **(1mk)**

II Determine the radius r of the nichrome wire **(2mks)**

r=……..m

d)Arrange the apparatus as shown below



e)Close the switch and record V_R, the pd across resister and I_R, the current in the circuit

V_R…… **(1mk)**

I_R…… **(1mk)**

f) Connect the voltmeter across nichrome wire AB and record the pd, V_N

V_N…… **(1mk)**

g)Determine the value of resistance R **(3mks)**

h)Calculate the value of constant Q given that $\frac{QRL_0}{V_N} = 100$ **(3mks)**

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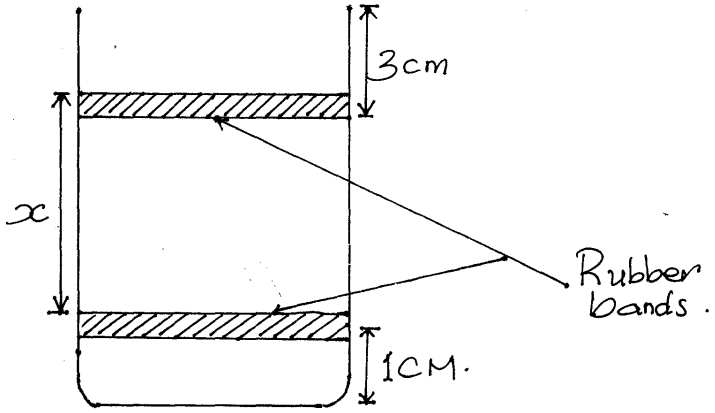
2.B) You are provided with the following set of apparatus.

- measuring cylinder
- Glycerine
- Two rubber bands
- One meter rule
- Steel ball bearing
- A magnet
- A micrometer screw gauge
- A stop watch
- A piece of tissue paper

a)Set the apparatus as shown



b)Adjust the lower ruber band so that x=25cm.

c)Release the steel ball from the surface of the liquid and obtain the time, t it takes to travel the distance x =25cm

t_1……. **(1mk)**

d)Use The magnet provided to remove the steel ball from the liquid.

e)Repeat procedure b, c and d for x= 15cm to obtain t_2

t_2=……. **(1mk)**

f) Measure the diameter, D of the steel ball using micrometer screw gauge.

D=……..m **(1mk)**

g)I Calculate the average value of x and t

$\mathbf{t_{av}} =$ **(1mk)**

$\mathbf{X_{av}} =$ **(1mk)**

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II) Using the average value obtained above, determine the viscosity of the glycerine using the equation below

$$n = \frac{D^2 tg(\rho - 6)}{18x}$$ **(3mks)**

Where g=acceleration due to the force of gravity =10m/s^2

ρ =density of steel bell = 7.0×10^3kg/m^3

D= Density of glycerin =1.26×10^3kg/m^3

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