FORM THREE HYBRID/REFLECTOR END TERM 2 EXAMS



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FORM 3 HYBRID/ REFLECTOR END TERM 2 EXAMS

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Subjects Tested: 1. AGRIC 2.BIO 3.BST 4.CHEM 5. COMP 6.CRE 7.ENG 8.GEOG 9.HIST 10.H-SCI 11.KISW 12.MATHS & 13. PHY Respectively.

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SCHOOL: ……

ADM NO: …… DATE: …… SIGN: ……

FORM 3 AGRICULTURE

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

TIME: 2HRS

INSTRUCTIONS TO ALL CANDIDATES:

a) Write your name and admission number in the spaces provided.
b) This paper consists of section A, B and C.
c) Answer all questions in section A, B and C in the spaces provided.

FOR EXAMINERS USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE SCORE
A	1-19	40	
B	20-23	20	
C	24-26	20	
		20	
	TOTAL	100	

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SECTION A (40MKS) ANSWER ALL QUESTIONS IN THE SPACES PROVIDED.

1. What is olericulture? (1mk)

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2. Name three industrial goods whose market is provided by agriculture.(3mks)

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3. Give three farming practices which can be employed to achieve minimum tillage.(3mks)

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4. Name any four biotic factors that influence agriculture negatively.(2mks)

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5. Give three characteristics of subsoil layer of a soil profile.(3mks)

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6. State the meaning of the following terms as used in pig rearing.(2mks)
   i) Sow`

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   ii) Piglet

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7. Describe three factors that determine the depth of ploughing.(3mks)

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8. State two features of the gizzards that make them efficient in their function.(2ks)

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Distinguish between a straight fertilizer and a compound fertilizer.(2mks)

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9. State any two methods that can be used to detect mineral deficiency in crops.(2mks)

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10. State four disadvantages of broadcasting as a method of planting.(2mks)

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11. Give a reason for carrying out each of the following practices in a cabbage nursery.(2mks)

i) Pricking out.

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ii) Hardening off.

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12. State three reasons for flushing ewes.(3mks)

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13. Describe four reasons for pruning in coffee production.(2mks)

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14. Give two reasons for preferring tilapia fish for rearing in ponds.(2mks)

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15. State four roles played by worker bees.(2mks)

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16. Name a crop that requires the following training
    a) Staking ($^1/_2$mk)

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    b) Trelishing.($^1/_2$ mk)

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17. Give four ways of harvesting water in the farm.(2mks)

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18. Explain the meaning of the term selection as used in livestock production.(1mk)

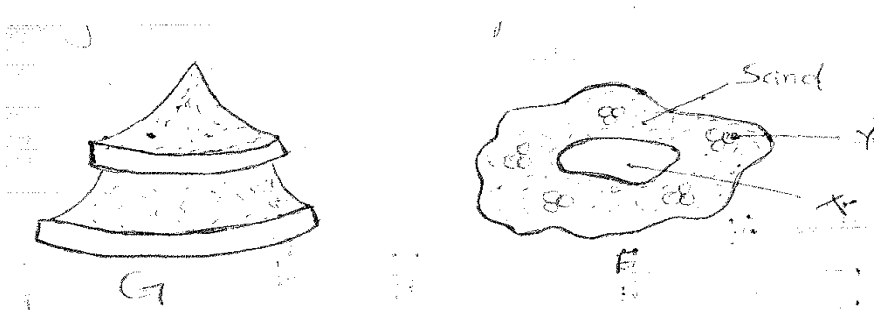
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SECTION B (20MARKS) ANSWER ALL QUESTIONS IN THE SPACES PROVIDED.

19. The diagrams below illustrate some soil structures study them and answer questions that follow.



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a) Identify the soil structures.(2mks)

G-……

F-……

b) Name the parts labeled X and Y in diagram F (2mks)

X-

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Y-

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c) State three ways in which soil structure G influences crop production.(3mks)

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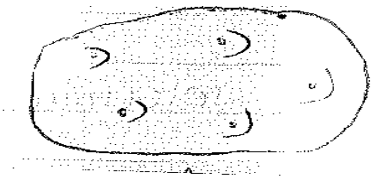
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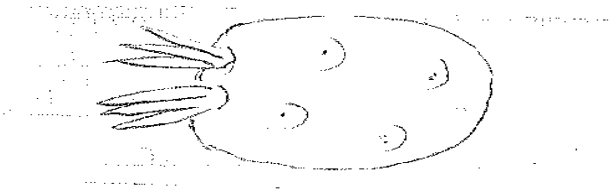
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20. Study the diagrams below and answer the questions that follow



A



B

a) Name the process used to treat Irish potatoes setts in readiness for planting.(1mk)

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b) Which of the two setts A or B is suitable for planting?(1mk)

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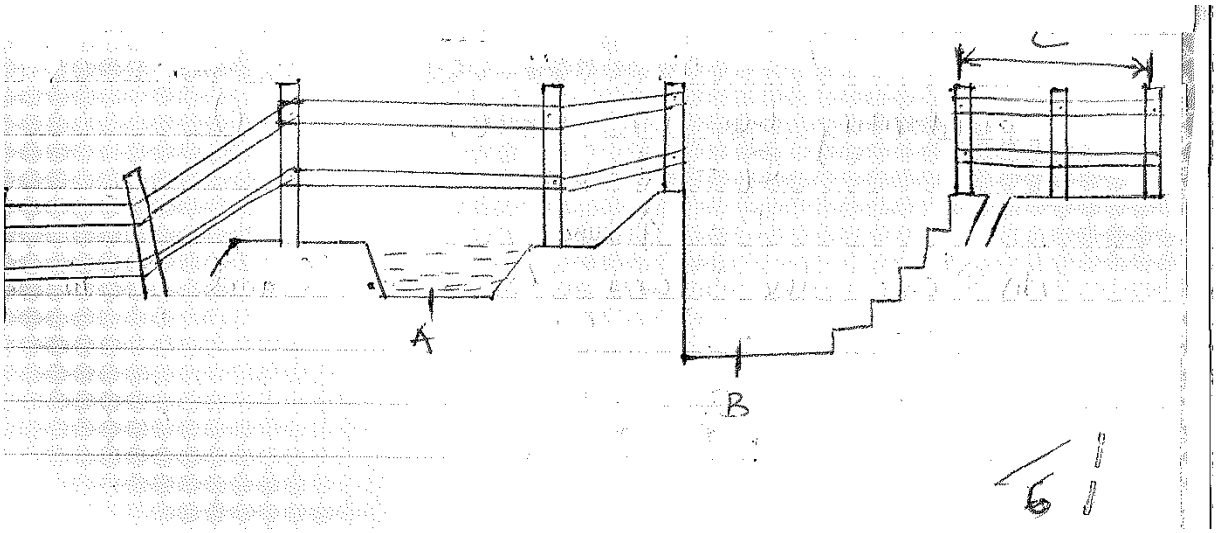
c) Give a reason for your answer in (b) above e.(1mk)

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21. The diagram below shows a plunge dip. Study it and answer the questions that follow.



a) State one use of each of the parts of the dip labeled A,B and C (3mks)

A-

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B-

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C-

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b) Give two ways in which the dipwash in a plunge dip may be exhausted.(2mks)

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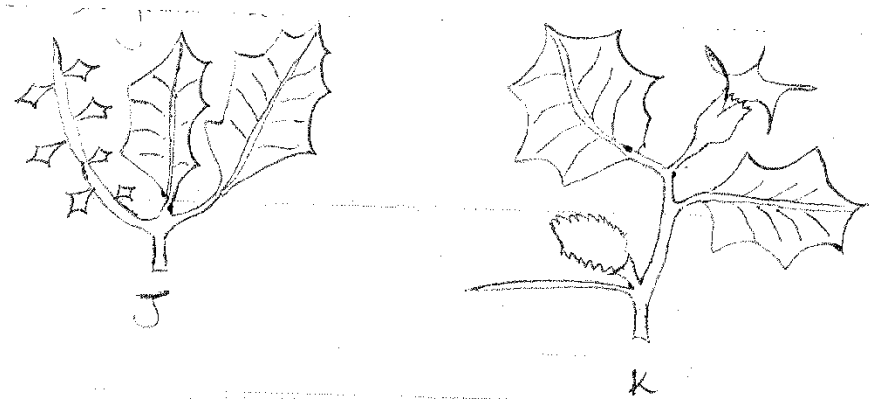
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22. The diagrams below show common farm weeds.



a) Identify the weeds labeled J and K. (2mks)

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b) Classify weed J according to its life cycle. (1mk)

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c) State one harmful effects of weed K to livestock. (1mk)

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d) At what stage of growth of maize is it recommended to control weed labeled K using post emergence herbicides? (1mk)

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SECTION C (40MKS)

ANSWER ANY TWO QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED.

24 a) Explain the physical or structural methods of controlling soil erosion.(8mks)

b) Describe effects of land fragmentation.(6mks)

c) i) Differentiate between soil texture and soil structure.(2mks)

ii) Describe benefits of a good soil structure on crop production.(4mks)

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25 a) Describe production of cabbages under the following subheadings

i) Ecological requirements. (4mks)

ii) Land preparation.(3mks)

iii) Transplanting (6mks)

iv) Disease and pest control.(4mks)

b) State three factors that determine the amount of water taken by an animal.(3mks)

26.a) Describe upgrading as a method of improving indigenous cattle for milk production.(6mks)

b) Describe five effects of crop pests.(5mks)

c) Explain five importance of keeping livestock in good health.(5mks)

d) Describe four effects of high temperature in crop production.(4mks)

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FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

231

BIOLOGY (Theory)

$2\frac{1}{2}$ Hours

KENYA CERTIFICATE OF SECONDARY EDUCATION

FORM THREE BIOLOGY PAPER

Instructions to Candidates

- Write your Name and admission Number in the Spaces Provided.
- Sign and write date of examination in the spaces provided.
- This paper consists of three sections A, B and C.
- Answer all the questions in Sections A, B and C in the spaces provided.
- You should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

SECTION A

1a.Distinguish between homoiotherms and poikilotherms {2 marks}

Homoitherms-

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Poikilotherms-

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b) (i) How is energy stored in a cell? {1 mk}

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(ii). How is the energy released when the cell needs it? {1mk}

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2. Name three kingdoms apart from Plantae and Animalia in order of decreasing complexity {3 marks}

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3. When preparing a temporary slide of black jack stem, Kamau was asked to carry out the following steps. Give a reason why each step was carried out.

a). Use a sharp razor to obtain a thin slice of the stem {1 mk}

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b), Place a drop of water on the slice on the microscope slide {1 mk}

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c). Add a drop of methylene blue dye on to the specimen on the microscope slide {1 mk}

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d) Lower the cover slip gently onto the place over the slice of the stem {1 mk}

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4. List down two factors that maintain populations of animals carrying capacity {2 marks}

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5. State three ways in which atmospheric nitrogen can be"fixed" into nitrates{3 marks}

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6 (a). Reproduction is a characteristic of living things. State two importance of it in living things{2 marks}

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(b) State two ways in which flowering plants prevent self-pollination {2 marks}

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(c) What is the importance of cross pollination? {1 mk}

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7. List down four symptoms of diabetes mellitus {4 marks}

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8. Why are plants able to accumulate most of their waste products for long {2 marks}

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9.List down four roles of liver in homeostasis in the human body {4 marks}

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10. (a) Give one physiological difference between a plant cell wall and a cell membrane (1mk)

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(b) State two structural differences between a cell wall and a cell membrane (2mks)

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11. (a) Give reasons why muscle cells, sperm cells and kidney cells have large numbers of mitochondria. (2mks)

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(b) State the role of cristae found in the mitochondria. (1 mk)

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(c) Name the chemical reaction in which glucose is broken down to form pyruvic acid (1mk)

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12. a) What is the significance of diffusion to plant pollination (1 mark)

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b) Explain why movement of air molecules is not energy driven process (1mark)

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13.A student added equal amounts of blood to equal volumes of salt solutions of different concentrations. She observed and counted the red blood cells under the microscope at the beginning of the experiment and at the end of the experiment. The results were as shown below.

Set up	Concentration of salt	Beginning	After 30 min.
A	0.1%	Normal	Normal but small
B	0.05%	Normal	Very few but large

Account for the results in set up.

(i) Set up **A** (2mk)

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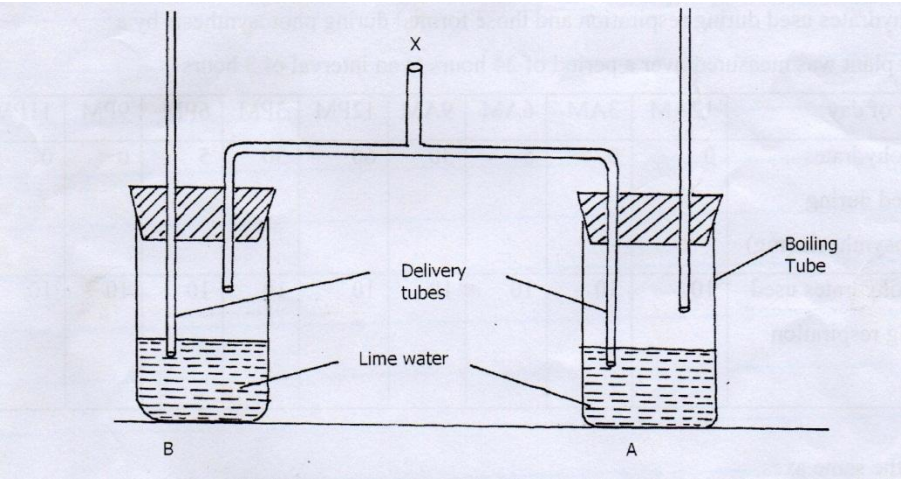
(ii) Set up **B** (2mk)

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14.An experiment was set up as show below.



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(a) A student blew air in and out through point X. Using arrows indicate how air gets in and out of the set up [2mks]

(b) [i] In which of the tube would lime water turn milky first. [1mk]

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ii] Give a reason. [1mk]

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15.Photosynthesis is an enzyme controlled process which occurs within the chloroplasts in plant cells. Where in the chloroplast**;**

i)Is chlorophyll located? (1mk)

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ii)are enzymes located? (1mk)

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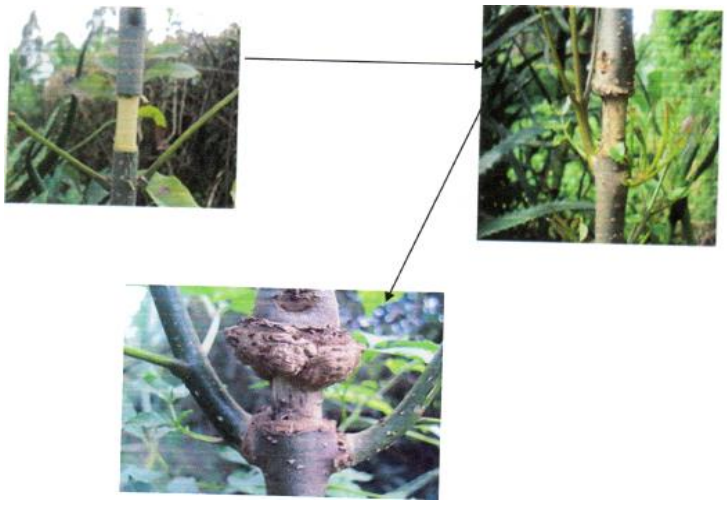
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iii)in what form are carbohydrates transported in the phloem? (1mk)

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16.study the photographs below and answer the questions that follow.



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i) Name the process being investigated. (1 mark)

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ii) Name the plant tissue involved in the physiological process illustrated above. (1 mark)

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iii) Name the physiological process involved in the process illustrated above .(1 mark)

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iv) list one adaptation of the tissue named in (ii) above (1 mark)

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SECTION B

17. You are provided with photographs of plants labeled E, F, G, H, I, J and K

Use them to answer question that follows.















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(i). Complete the dichotomous key below using observable features in the photograph given. (4mks)

1(a] simple leaf……..go to 2

(b) Compound leaf…….. go to 5

2(a) Leaf with parallel veins…… Poaceae

(b) ……..... go to 3

3[a] leaf notched at the base ……..……. Phaseolus

b] Leaf not notched at the base……..…… go to 4

4 Leaf with smooth margin……. Nyctaginaceae

(b) _____..... Rosaceae

5(a) Leaf palmate……..…….. Euphorbiaceae

(b)_____ ……..…….. go to 6

6(a)_____ ……..…… Fabaceae

(b) Leaflets rounded at the …… Bignoniaceae

(ii) Use the completed dichotomous key to identify the plant (7 mks)

Specimen	Steps Followed	Identify
E		

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F

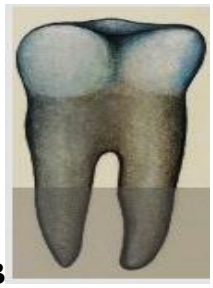
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G

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18. Below are the only types of human teeth found in an individual. Use them to answer the questions
that follow

A  **B**  **C** 

a) Write the order in which the teeth appear from front to back. 1mk

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b) What is the role of teeth in human digestion? 2mks

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c) Are the teeth above from a nursery pupil or a secondary school student? 1mk

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d) The pancreas of a patient was surgically removed. What was the effect on

i) Food digestion? 2mks

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ii) Blood sugar regulation? 2mks

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19. a) Name the essential parts of a flower. (2mks)

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b)i)At what stage of mitosis do chromosomes replicate to form daughter chromatids **(1mark)**

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ii)State three differences between mitosis and meiosis **(3marks)**

Mitosis	**Meiosis**

c) . How are female parts of wind pollinated flowers adapted to perform their function? (2marks)

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20. Describe how xerophytic plants are structurally adapted to their habitat. **(20marks)**

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FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

BUSINESS STUDIES

565

TIME: 2 HOURS

FORM THREE

INSTRUCTIONS

(i) Attempt all questions in Section A and any three questions in **Section B**.

SECTION A

1. State the term given to each of the following disciplines. (3 marks)

(a) Study of how man strives to satisfy his unlimited wants using limited resources.

(b) Study of the process of identifying a business opportunity and acquiring resources to start and operate a business.

(c) Refers to systematic way of recording business activities which are used for decision making.

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2. Outline four ways in which a good filing system may facilitate the operations in an office. (4 marks)

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3. Highlight four factors that a trader may consider when choosing a means of transport. (4 marks)

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(a) Outline four qualities of a successful; salesperson. (4 marks)

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4. Outline four effects of an ageing population. (4 marks)

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5. Outline four circumstances in which a cheque may be used as a means of payment. (4 marks)

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6. State four external factors that may negatively influence the operations of a business. (4 marks)

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7. Outline four advantages of a systematic arrangement of goods in a warehouse. (4 marks)

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8. Highlight four diseconomies of scale that a firm may experience in its expansion. (4 marks)

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9. State four types of information that a manager may communicate to the juniors. (4 marks)

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10. Highlight four circumstances in which the government may be involved in business activities. (4 marks)

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11. Outline four problems faced by consumers as they try to satisfy human wants. (4 marks)

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(a) The following information was extracted from the books of XYZ traders as at 30th June 2011.

	Shs.
Debtors	60,000
Creditors	60,000
Cash	40,000
Bank loan	120,000
Stock	50,000
Machinery	300,000

Required:

Prepare XYZ traders balance sheet as at 30th June 2011. (4 marks)

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12. Highlight four circumstances under which a manufacturer may prefer to sell directly to the consumers. (4 marks)

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(a) Give four reasons why it would be advisable to take an endowment policy instead of whole life policy. (4 marks)

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(a) The participants in a two sector economy are households and firms. Identify the relevant participant in each of the following statements given below. (4 marks)

	Statement	Participant
(a)	Payment for goods and services.	
(b)	Sale of factors of production.	
(c)	Payment for factors of production.	
(d)	Sales of goods and services.	

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13. In the spaces provided below indicate the types of utility created by each of the following commercial activities. (3 marks)

	Commercial activity	Type of utility
(a	Transporting goods.	_____
(b	Selling goods to a consumer.	_____
(c	Making chair from timber.	_____

14. Outline four features of oliogopoly as a market structure. (4 marks)

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SECTION B

Attempt three (3) questions.

15. Using a well labeled diagram, explain the effects of excess demand and excess supply on the market prices. (10 marks)

16. Explain **FIVE** principles that distinguish cooperative societies from other forms of business organizations. (10 marks)

17. Explain **FIVE** reasons why an entrepreneur would find it necessary to prepare a business plan when starting a business. (10 marks)

18. Explain **FIVE** ways in which the government of Kenya may reduce the level of unemployment. (10 marks)

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FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

FORM 3 CHEMISTRY

END OF TERM 2 EXAMINATION

2 ½ HOURS

ANSWER ALL QUESTIONS IN THE SPACES PROVIDED

1. State any two differences between luminous and non – luminous flames (2mk)

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2. Compound Q is a solid with a giant ionic structure. In what form would the compound conduct an electric current. (2mks)

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3. Pentane and ethanol are miscible. Describe how water could be used to separate a mixture of pentane and ethanol. (3mk)

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4. Explain why it is not advisable to leave a Jiko with burning charcoal in a closed room where one is sleeping. (2mk)

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5. In an experiment, ammonia chloride was heated in a test tube. A moist red litmus paper placed at the mouth of the test tube first changed blue then red. Explain these observations.(3mk)

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6. A given volume of ozone, (O_3) diffused from a certain apparatus in 96 seconds. Calculate the time taken by an equal volume of carbon (IV) oxide (CO_2) to diffuse under the same conditions (O = 16.0, C = 12.0) (3mk)

7. How would you obtain a sample of pure iodine from a mixture of iodine and lead sulphate? (2mk)

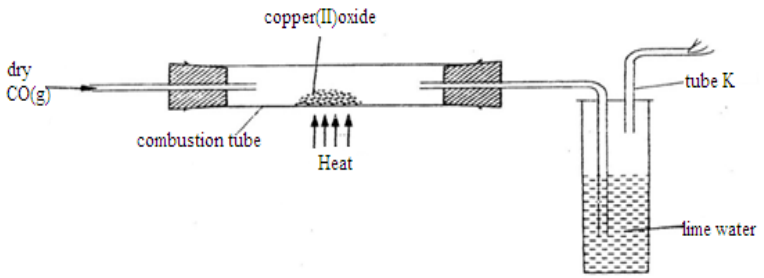
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8. The apparatus shown below was used to investigate the effect of carbon (II) oxide on copper (II) oxide.



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a) State the observation that was made in the combustion tube at the end of the experiment. (1mk)

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b) Write an equation for the reaction that took place in the combustion tube. (1mk)

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c) Why is it necessary to burn the gas coming out of tube K? (1mk)

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9. When potassium nitrate is heated, it produces potassium nitrite and gas C

(a) Identify gas C (1mk)

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(b) Name the type of reaction undergone by the potassium nitrate. (1mk)

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c) Write a balanced chemical equation for the reaction that takes place. (1mk)

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10. Describe how a solid sample of Zinc (II) carbonate can be prepared starting with zinc oxide (3mk)

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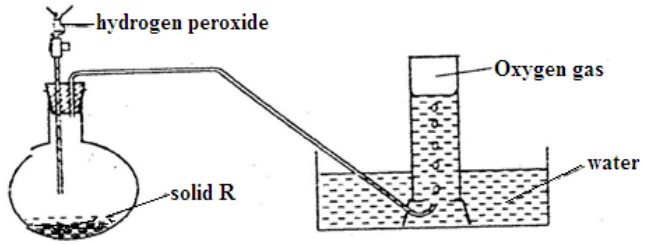
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11. The diagram below is set – up for the laboratory preparation of oxygen gas.



(a) Name solid R (1mk)

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(b) Write an equation for the reaction that takes place in the flask.(1mk)

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(c) Give two commercial uses of oxygen (2mks)

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12. (a) Give a reason why concentrated sulphuric(VI) acid is not used to dry ammonia gas. (1mk)

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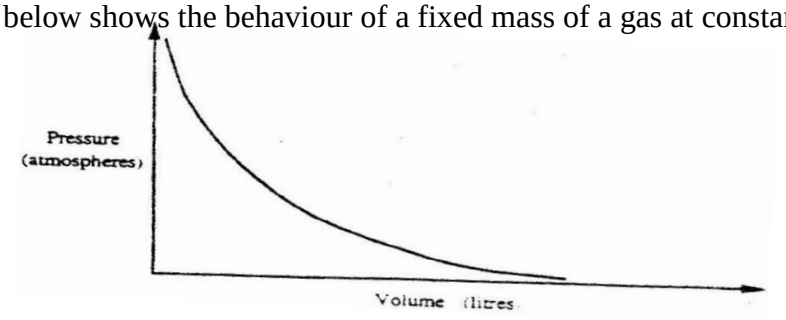
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(c) Name one suitable drying agent for ammonia gas.(1mk)

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13. The graph below shows the behaviour of a fixed mass of a gas at constant temperature.



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a) What is the relationship between the volume and the pressure of the gas? (1mk)

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b) 3 litres of oxygen gas at one atmosphere pressure were compressed to two atmospheres at constant temperature. Calculate the volume occupied by the oxygen gas (2mks)

14. When X cm^3 of a solution of 0.5M magnesium carbonate was reacted with excess hydrochloric acid 8.4g of carbon (IV) oxide gas was evolved.

(a) Write the ionic equation for the reaction that took place(1mk)

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(b) Calculate the value of X. (C = 12.0, Mg 24.0; 016.0 (2mks)

15.Using dots (.) and crosses(x) to represent electrons, show bonding in the compounds formed when the following elements react:

a) Sodium and chlorine (2mks)

b) Silicon and chlorine (2mks)

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16. Use the information in the table below to answer the questions that follow. (The letters do not represent the actual symbols of the elements)

Element	B	C	D	E	F
Atomic number	18	5	3	5	20
Mass number	40	10	7	11	40

a) Which two letters represent the same element? Give a reason. (2marks)

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b) Give the number of neutrons in an atom of element D (1 mark)

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17. When a hydrocarbon was completely burnt in oxygen, 4.2g of carbon (IV) oxide and 1.71 g of water were formed. Determine the empirical formula of the hydrocarbon
(H= 1.0 ; C=12.0 ; 0 = 16.0) (3 mks)

18. (a) What is meant by isomerism? (1mark)

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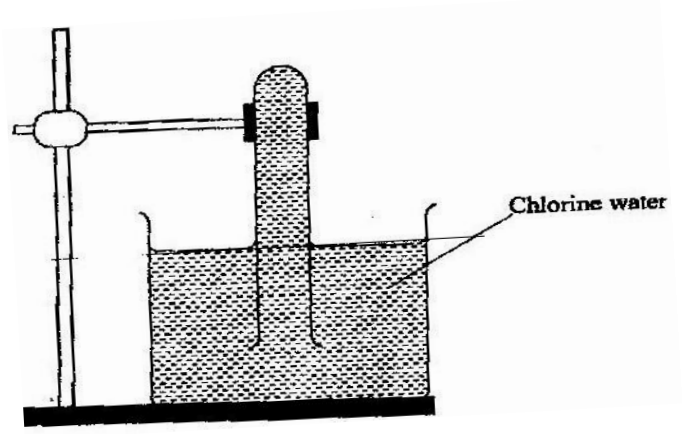
(b) Draw and name two isomers of butane. (2 marks)

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19. The table below shows the relative atomic masses and the percentage abundance of the isotopes L1 and L2 of element L. Calculate the relative atomic mass of L. (3mks)

isotopes	L1	L2
relative atomic mass	69.09	64.93
percentage abundance	62.93	30.91

20. In an experiment, a test-tube full of chlorine water was inverted in chlorine water as shown in the diagram below and the set up left in sunlight for one day.



After one day, a gas was found to have collected in the test-tube

a) Identify the gas. (1mk)

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b) What will happen to the pH of the solution in the beaker after one day? Give an explanation. (2mks)

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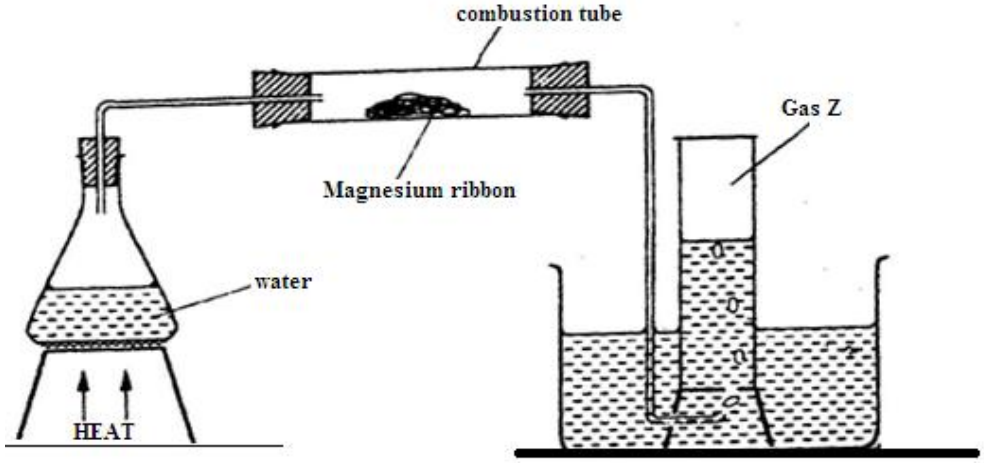
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21. Study the set- up below and answer the questions that follow



(a)Identify gas Z. (1mk)

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(b) Write an equation for the reaction, which take place in the combustion tube. (1mk)

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(c) What property of gas Z allows it to be collected as shown in the diagram (1mk)

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22. Study the information in the table below and answer the questions that follow. The letters do not represent the actual symbols of the elements)

Element	Electrical conductivity	Ductility	Action of water
A	Good	Good	No reaction
B	Good	Poor	No reaction
C	Good	Good	Reacts

Select an element which

(a) Is likely to be used in group II of the periodic table. (1mk)

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(b) Could be used to make electric cables. (1mk)

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(c) Likely to be graphite. (1mk)

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23. (a) State the Gay Lussac's law. (1mk)

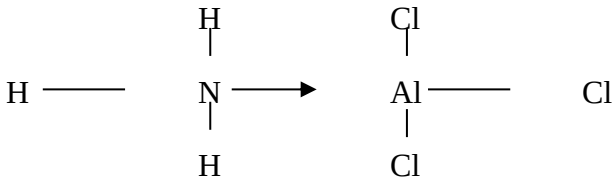
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(b) 10cm3 of a gaseous hydrocarbon C_2H_x required 30cm3 of oxygen for complete combustion .If steam and 20cm3 of carbon (IV) oxide were produced, what is the value of x. (2mk)

24. The diagram below shows the bonding between aluminium chloride and ammonia.



(a)Name the types of bonds that exist in the molecule (1mk)

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(b)How many electrons are used for bonding in the molecule? (1mk)

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25. The table below gives the number of electrons, protons and neutrons in particles.

Particle	Protons	Electrons	Neutrons
A	6	6	6
B	10	10	12
C	12	10	12
D	6	6	8
E	13	10	14
F	17	17	18
G	8	10	8

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(i) Which particle is likely to be a halogen? (1mk)

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(ii) What is the mass number of E? (1mk)

(iii) Write the formula of the compound formed when E combines with G.(1mk)

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(iv) Name the type of bond formed in (iii)above.(1mk)

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(v) How does the radii of C and E compare? Give a reason (2mk)

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(vi) Why would particle B not react with particle D? (1mk)

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26. a) What is meant by the term binary electrolyte? (1mk)

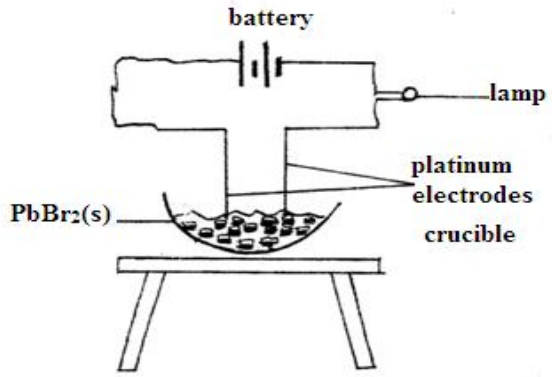
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c) In an experiment to investigate the conductivity of substances, a student used the set – up shown below.



i) The Student noted that the bulb did not light .What had been omitted in the set- up?(1mk)

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ii) Explain why the bulb lights when the omission is corrected . (2 mks)

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iii) Write the equations for the reactions that take place at the anode and at the cathode when the mistake is rectified. (2mks)
Anode

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Cathode

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27. When a few drops of aqueous ammonia were added to copper (II) nitrate solution, a light blue precipitate was formed. On addition of more aqueous ammonia, a deep blue solution was formed.
Identify the substance responsible for the:

(a) Light blue precipitate (1mk)

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(b) Deep blue solution (1mk)

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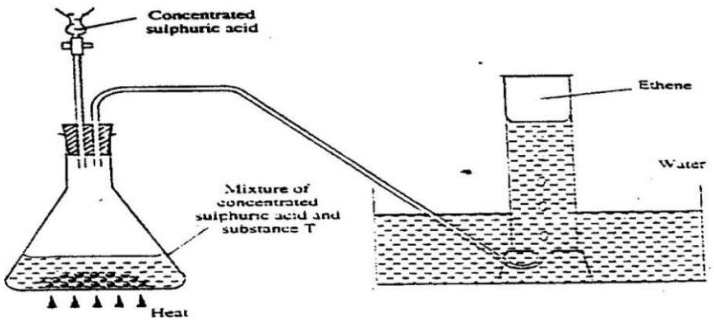
28. Explain why a high temperature is required for nitrogen to react with oxygen (1mk)

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29.a) The set-up below was used to prepare and collect ethene gas. Study it and answer the questions that follow.



(i) Name the substance T(1mk)

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(ii) Give the property of ethane that allows it to be collected as shown in the set up. (1mk)

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b) One of the reactions undergone by ethene is addition polymerization. Give the name of the polymer and one disadvantage of the polymer it forms.(2 marks)
Name the polymer.

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Disadvantage of the polymer

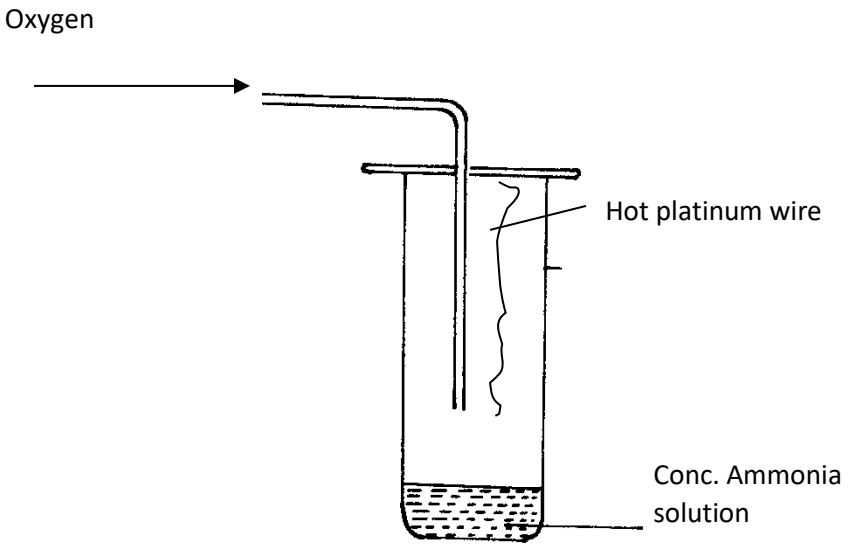
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30. Oxygen was bubbled into concentrated ammonia solution as shown below.



(a) Explain why the platinum wire remained red-hot even though it was no longer being heated. (1mk)

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(b) Brown fumes were observed in the boiling tube. Using chemical equations, explain this observation. (2mks)

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31. Distinguish between a strong and a weak base. Give an example of each (2mk)

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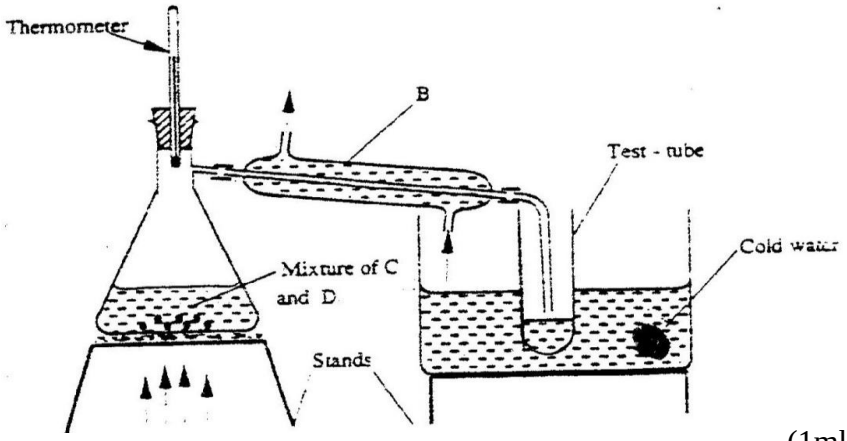
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32. The set – up below represents the apparatus that may be used to separate a mixture of two miscible liquids C and D whose boiling points are 80^0C and 110^0C.



(a) Name B (1mk)

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(b) What is the purpose of the thermometer (1mk)

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(b)Which liquid was collected in the test tube? (1mk)

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34. Define the following terms as used in organic chemistry (2mks)

a) Saturated hydrocarbon

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b) Catalytic cracking

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35. Name two substances that are recycled in the Solvay process. (2mks)

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NAME: ……

SCHOOL: ……

ADM NO: …… DATE: …… SIGN: ……

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

COMPUTER STUDIES
FORM THREE END TERM 2

1. State the two functions of the control unit. (2 marks)

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2. Explain four reasons which make microcomputers suitable for personal computing work.(2 marks)

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3. State the functions of the following keyboard key combinations. (3mks)

a) CTRL + ESC:

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b) ALT + F4:

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c) CTRL + ALT + DEL:

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4. Mambo Leo the CEO of Chai tea factory wishes to computerise activities in the factory. He asked his system analyst to advise him on the areas that needed to be computerised. State three

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reasons why an organisation may opt to develop a new information system. (3mks)

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5. a) Give a reason for enforcing referential integrity. (1mk)

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b) List two main characteristics of a primary key. (2mks)

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6. List any four types of computer crimes. (2mks)

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7. Most supermarkets use bar codes extensively, explain two reasons why this is the case. (2mks)

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7. List any two examples of publications designed using DTP software. (1mk)

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8. a) Explain how a computer system can be protected from intruders. (2mks)

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b) State any two laws governing protection of information. (2mks)

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9.a) What is the meaning of graphics as used in word processing? (1mk)

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b) Give two sources of graphics in the computer. (2mks)

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10. State the cursor action when the following keyboard keys are pressed. (4mks)

i. Delete key

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ii. Insert key

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iii. Pgup (page up) key

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iv. Pgdn (page down) key

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11. a) What is a search engine? (1mk).

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b) Give four examples of search engines you know. (2mks)

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12. a) Define the following terms as used in a worksheet. (2mks)

i) Columns

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ii) Rows

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b) Distinguish between absolute cell reference and relative cell reference (2mks)

Relative Referencing

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Absolute referencing;

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13. a) State two data processing file. (1mk)

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b) Explain any one file named above in a). (2mks)

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15. Give one reason to the growth of communication industry in Kenya. (1mk)

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b) State and explain the 2 main errors made during program development. (2mks)

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C) Study the pseudo-code below and draw a flowchart from it. (7mks)

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START
    PRINT ENTER CAR NUMBER
    INPUT CAR NUMBER
    PRINT ENTER NUMBER OF DAYS
    INPUT NUMBER OF DAYS
    IF NUMBEROFDAYS>=7 THEN
        AMOUNT=(NUMBER OF DAYS X 2500) – (NUMBER OF DAYS X 2500) * 25%
    ELSE
        AMOUNT=NUMBER OF DAYS * 2500
    END IF
    DISPLAY CAR NUMBER, NUMBER OF DAYS, AMOUNT
STOP
```


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17. a) Explain three parameters that determines the magnitude of a number. (6mks)

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b) Using two's complement, show how the arithmetic below would be carried out on a 8 - bit computer system. (+54) - (+29) (5mks)

c) State and explain any two strategies that may be employed to mitigate threats to data integrity. (4mks)

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18. a) What is the meaning of integrated software? (2mks)

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b) State and explain three advantages of using robots to perform tasks. (6mks)

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c) Differentiate between toggle keys and home row of the keyboard giving examples: (4mks)

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d) What is proofreading? Give an example of proofreading tools used in word processors.(3mks)

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19. a) Distinguish between a computer drive and computer driver. (2mks)

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b. State any four factors to consider when selecting an operating system. (4mks)

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c) Explain any four factors that dictate how the operating system organizes data in a computer. *(4mks)*

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d) Define the term file in relation to the operating system. (2mks)

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e) The operating system stores details of a file for easy identification and retrieval of files. Explain any three file details the operating system uses to search and identify a file. (3mks)

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Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

CHRISTIAN RELIGIOUS EDUCATION

NAME: ……

SCHOOL: ……

ADM NO: …… DATE: …… SIGN: ……

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

Instruction to the students

- **Answer any five questions**
- **All answers must be written in English.**

1 a) How did Prophet Samuel promote the worship of Yahweh in Israel? (7mks)

b) Explain how king Jeroboam contributed to schism between Judah and Israel. (6mks)

c) Give seven factors that have led to increase of Christian denominations in Kenya (7mks)

2 a) Outline Nathan's prophecy about the messiah (7mks)

b) Give the message of Angel Gabriel about John the Baptist to Zachariah during the annunciation of John's birth (7mks)

c) How do Christians play the role of John the Baptist today (6mks)

3 a) Explain how unity of believers is expressed in the image of body of Christ (7mks)

b) In what ways can Christians identify those who are led by the Holy Spirit. (6mks)

c) State reasons why some Christians find it hard to help the needy. (7mks)

4 a) List eight gifts of the Holy Spirit. (8mks)

b) In what ways was the life of Peter transformed during the day of Pentecost. (6mks)

c) In what ways do Christians in Kenya show unity? (6mks)

5 a) Highlight similarities between traditional African prophets Old Testament prophets. (7mks)

b) Briefly explain Prophet Amos teachings on social justice and responsibility. (7mks)

c) Outline the relevance of prophet Amos teachings on social justice and responsibility to Christians today. (6mks)

6 a) Explain four Symbolic acts by Jeremiah to represent Gods judgement against Israel. (8mks)

b) What evils did prophet Jeremiah condemned in Israel? (7mks)

c) Explain six challenges faced by church leaders today. (5mks)

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

NAME: ……

SCHOOL: ……

ADM NO: …… DATE: …… SIGN: ……

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

101/1
ENGLISH COMBINED PAPER

Time: 2 hours

FORM 3

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) Answer all the questions in this paper.

(d) All your answers must be written in the spaces provided in the question paper.

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

(f) Candidates must answer the questions in English

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Student's Score
1	**20**	
2	**10**	
3	**20**	
4	**20**	
5	**20**	
6	**10**	
Total Score	**100**	

This paper consists of 14 printed pages

Prefer Calling Sir Obiero Amos @ 0706 851 439 for Marking Schemes

1. FUNCTIONAL SKILLS (20 MKS)

You are the president of your school. There has been a decline in performance in languages in the national examinations over the last three years in your school. The Principal appoints you the secretary of the committee which is to investigate the cause and provide possible remedies to the problem. You are to report to her/him in two weeks. Write the report.

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2. **CLOZE TEST (10 MARKS)**

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

Are violent crimes against women on the increase or are (1) **……** being over-reported? That is the (2) **……** many are asking in the wake (3) **……**reports on the (4) **……** of young women in what appears to be (5) **……**emerging trend in crimes of passion.

According to the (6) **……** from police, there were 2,774 homicides in 2017, a slight increase from the (7) **……** year.

In the same year, 1,213 men were reported to have (8) **……** murders compared to 222 women. (9) **……** of seven reported murders, six had been committed by men, and only one by a woman.

In 2014, the Kenya Demographic and Health survey published some (10) **……** statistics showing that 44 percent of women reported that they had experienced physical violence by men since turning 15.

3. **<u>COMPREHENSION (20 MARKS)</u>**

<u>Read the following passage and then answer the questions that follow</u>

The question is at least as old as Socrates: If we know what the right thing to do is, why do we not do it? It is an especially acute question when applied to global warming. The science showing that carbon dioxide emissions are already changing the planet's climate, and are likely to have severe effects (melting ice caps, sea-level rise and species extinction), is compelling and now barely disputed. Almost 90% of Europeans say they recognize climate change as a major issue, and 75% identify fossil fuel emissions as a major cause.

And yet, as was widely discussed at a conference of environmentalists, geologists and writers in May 2006 Ankelohe, Germany, public understanding has not translated into even the simplest of public actions. Less than 1% of Britons, for example, have switched their home electricity to renewable sources, even though it requires little more than a phone call to one's existing provider. Proportions on the continent are slightly higher, but there is clearly no rush to go green or shudder stopdriving cars. — —

Why such a disconnect between information and action? Part of the problem is that environmental advocates emit mixed messages. In mid-May 2006, Britain's Guardian published a front-page story showing that five companies in Britain produce more CO_2 pollution in a year than all the country's motorists combined. That is a strong argument for targeting industries, but the average reader could hardly be blamed for thinking, "Why should I bother to cut down my driving?"

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Similarly, not enough though has been devoted to the best role for government. Climate change is too vast a problem for individuals to solve alone, and some big businesses have an incentive not to solve it. That leaves government to take the lead, which is tricky, because over-reliance on government can allow individuals to fob off their own responsibilities. What is worse, government power seems to tickle autocratic fantasies. In my experience, environmentalists spend far too much energy advocating hard-line government 'solutions' that do not stand a chance of being enacted. Sure, it might be good for the planet if governments banned the use
of sports-utility vehicles or, for that matter, of all fossils fuels. Yet not only is it hard to sell outright prohibitions to voters, but the sad truth is that governments have a woeful record in even the mildest interventions. One of the most significant innovations in the last decade has been European's carbon-emission trading scheme: some 12 000 companies, responsible for more than half of the EU's emissions, have been assigned quotas. Companies with unused allowances can sell them; the higher the price, the greater the incentive for firms to cut their use of fossil fuels. The system seemed to work for about a year – but now it turns out that Europe's governments allocated for too many credits, which will likely hinder the program's effectiveness for years.

Perhaps the real reason that well-intentioned consumers do not change is that they do not see any benefit. Climate change may be a frightening, irreversible calamity, but its worst effects w3ill not be felt next week or next year. The planet looks the same regardless of whether we use environmentally friendly technology or we do not care how much CO_2 we emit. But sure as the sun rises and sets every day, if we do not cut down on carbon emissions, then we may not have a planet to hand over to the next generation.

(Adopted from Times, June 5, 2006)

(a) According to the passage, what are the effects of global warming? (4 mks)

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(b) What, according to the passage is the main cause of global warming? (3 mks)

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(c) How does Britain encourage people to use renewable electricity? (3 mks)

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(d) Paraphrase the following sentence: That is a strong argument for targeting industries, but the average reader could hardly be blamed for thinking, 'Why should I bother to cut down my driving?' (4 mks)

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(e) What message does the writer communicate in this passage? (2 mks)

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(f) Explain the meaning of the following words and expression as used in the passage.(4 mks)

(i) fob off

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(ii) incentive

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(iii) calamity

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4. **ANSWER EITHER QUESTION**

Read the Fathers of Nations excerpt below and answer questions that follow(25 mks)

"I'm leaving" she said. The bed creaked.

"What do you mean you are leaving? "Professor Kimani asked. He knew the answer: She didnot want to stay with him anymore. He pressed her. "What's going on, Asiya?"

"Newbom has asked me to marry him," she said.

This part he did not know. "Newborn Walomu?" he asked. Then he sat up in his half of thebed.

"Yes, Newborn Walomu. I'm leaving tomorrow."

"But why, Siya?" He did not wait for her answer. "Ah! It is his money, isn't it?"

"How dare you, Karanja!" she shouted. Then she also sat up in her half of the bed and turneda bedside lamp on and glowered at him. "For you, I've done without money for over thirty years. Repeat: thirty years! And now you have the gall to say money is the reason I want to leave?"

"Well, isn't it?" he retorted. "Look, Siya, money doesn't guarantee happiness."

"Ha!' she scoffed. Then she slid back into bed, turned to her other side, and wiggled away from him. The bed roared. "You talk of happiness. You! Have you no shame? You couldn'ttell what happiness was if it fell on your lap and cried out its name." She wiggled farther away. "Then you say money doesn't guarantee happiness. Never having had it, how would you know that it doesn't?"

"All I'm saying, Siya, is..." He slid back into bed as well. The bed protested. " trouble. Plus,more trouble from their wealth."

"Ha! If their wealth were a problem, why don't they simply give it away?"

He tried a different approach-Tuni. "In any case, is this a good time for us to part, so soonafter the death of our daughter?"

"Leave Tuni out of this!" she shouted. "She would still be alive if you had a real car," That really hurt.

"Tuni didn't die in our car, Siya,"he said limply in self-defence. Then hetried another angle-age.

"What happened to couples aging together gracefully anyway? Sixty is no age to part, surely,is it?"

"You mean I should have left earlier, before I turned sixty? Well, 'l did not' does not mean 'lshould not', nor does I did' mean 'l will'. That is why if I did not leave before, now I should.And it is why if I did stay then, now I will not."

She left the following morning.

EXCERPT QUESTIONS

a) Place the excerpt in its immediate context. **(4mks)**

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b) Describe the cause of Tuni's death. **(4mks)**

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c) Discuss one thematic concern evident in the excerpt. **(2mks)**

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d) Who is Newborn Walomu? **(2mks)**

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e) Identify and illustrate three styles used in the excerpt. **(6mks)**

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f) How has Asiya been portrayed in this excerpt**?** **(4mks)**

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g) "Money doesn't guarantee happiness." Why is this statement ironical coming fromKaranja? **(2mks)**

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h) Provide a question tag. **(1mk)**

He knew the answer,… **.....?**

6. **ORAL SKILLS (10 MKS)**

Read the poem below and then answer the questions that follow.

Lisa had a **blue** cat
Who **……** inside her hat
Lisa had **eight** cats
Who often **……** lots of rats
The cats **made** a big mess one day
And then the **……** began to say.
"You have **too** many cats!
…… on your head
And seven under your bed"
Now Lisa **knows** all this
So she tapped her **……** and said
"Hey Miss!
My dear maid, everything you say
Is true
So I'll trade my nine cats for nine
…… that's what I'll do!"

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(a) Fill each blank space with the word pronounced exactly the same way as the word boldfaced just before it. (6 mks)

(b) From the poem, identify a word whose pronunciation differ with one sound with(4 mks)

(i) Cat **……**

(ii) Rats **……**

(iii) Day **……**

(iv) You **……**

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FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

312/1
GEOGRAPHY PP1
FORM 3
END OF TERM II EXAM
TIME: 2 ¾ HRS

Instructions

1) This paper has section A and B. Answer all the questions in section A.
2) In section B, answer questions 6 and any other two questions.
3) Answers should be written in the answer booklet provided.
4) Provided your answers in English
5) Follow the instructions as provided.

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SECTION A

Answer all questions in this section

1)a) What are natural leaves? (2mks)

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b) List three conditions necessary for the formation of a delta (3mks)

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2)a) What is a lake? (2mks)

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b) State any three ways through which lakes are formed (3mks)

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3)a) What is climate? (2mks)

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b) Explain three effects of climate change on the physical environment (3mks)

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4)a) Name one active volcano in Kenya (1mk)

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b) Describe how a geyser is formed? (4mks)

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5)a) Name the two types of deltas (2mks)

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b) Name the three parts of a wave (3mks)

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SECTION B

Answer questions 6, and any other two

6) Study the **map of Taita hills (sheet 189/4)** provided and answer the following questions

a)i) Give the four figure grid reference of the Mwatunge hilltop (2mks)

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ii) What was the magnetic variation of the map? (2mks)

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iii) What is the general direction of Mwatate Wundanyi C104 all weather road-bound surface (2mks)

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b)i) Name three physical features found along the Northing 22 from 330220 to 370220 (3mks)

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iii) Draw a rectangle 16cm by 12cm to represent the area enclosed by the Eastings 24 and 40 and Northings 20 and 30 (1mk)

- On the rectangle, mark and name the following:
  - Mganga Hill (1mk)
  - A rock outcrop (1mk)
  - All weather road, bound surface (1mk)
  - Ronge forest (1mk)

c) Citing evidence from the map, explain three factors that may have favoured the establishment of Taita Sisal Estates in the Southern parts of the area covered by the map (5mks)

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d) Describe the distribution of settlements in the area covered by the map (5mks)

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7)a) Identify two types of high level clouds (2mks)

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ii) Name two types of clouds that give rise to rainfall in the tropical regions (2mks)

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b)i) Give two factors that influence relative humidity (2mks)

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ii) Outline the steps followed when measured humidity using a hygrometer (4mks)

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c)i) Draw a diagram of the earth and on it label the North Pole and South Pole (3mks)

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ii) Explain two reasons why the intensity of the insolation is higher at the equator than at the two poles (4mks)

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d)i) Draw a map of Africa, and on it label the following currents (3mks)

- Mozambique (1mk)
- Benguela (1mk)
- Guinea (1mk)

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ii) State two effects of a warm ocean current on the adjacent coastlands (2mks)

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8)a)i) Name two features that result from horizontal earth movements (2mks)

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ii) Give three causes of horizontal earth movements (3mks)

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b)i) List any two large plates (2mks)

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ii) What is subduction? (2mks)

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c)i) Explain the formation of the fold mountains according to the plate tectonic theory(4mks)

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ii) Name three fold mountains each from a separate continent (3mks)

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d)i) A part from fold mountains, mention three resultant features due to folding (3mks)

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ii) Explain three significance of folding to the physical environment (6mks)

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9)a)i) What is an arid area? (2mks)

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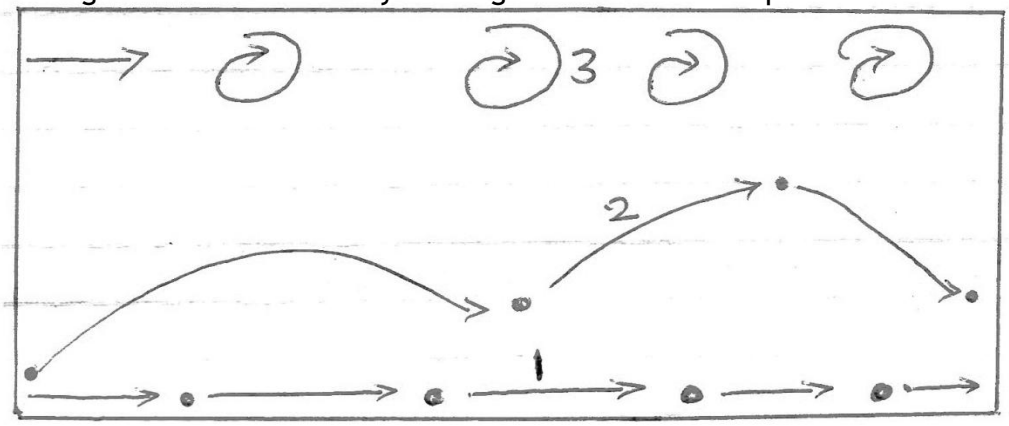
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ii) The diagram below shows ways through which wind transport its load



Name the three ways labeled 1, 2 and 3 (3mks)

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b)i) Apart from Barchans, identify two types of sand dunes (2mks)

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ii) Name five features of a Barchan (5mks)

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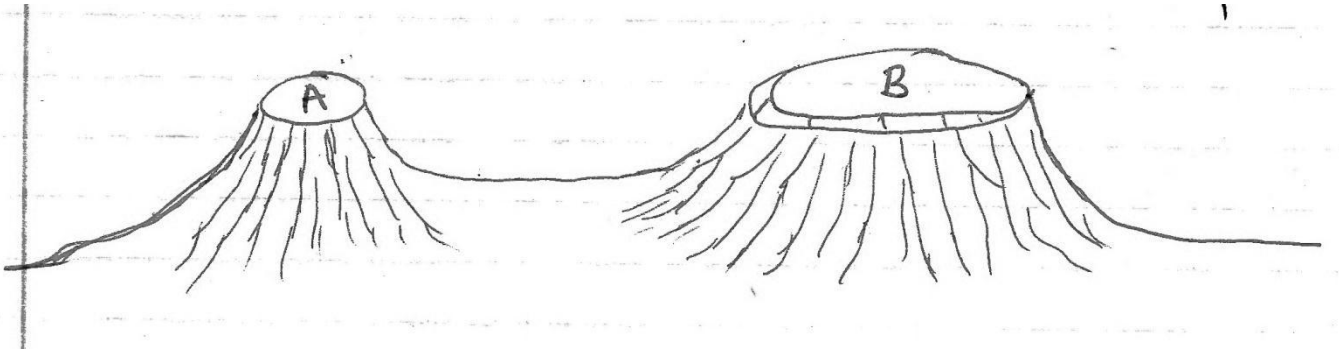
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c) Study the diagrams below and answer the questions that follow below:



i) Name the two desert erosive features labeled A and B above (2mks)

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ii) Name three counties in Kenya where the named features in C (i) above can be found(3mks)

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iii) Explain any four negative significance of desert features to human activities (8mks)

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10) i) Apart from weathering, name any two process that sculpture the Earth surface (2mks)

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ii) What is mechanical weathering? (2mks)

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b)i) Explain the carbonation process of weathering (6mks)

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ii) Identify any three biological factors that influence weathering (3mks)

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c) You are planning to carry out a field study in a rocky landscape around the school

i) Name three relevant tools that you would require for the field study (3mks)

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ii) Identify three methods that you would use to collect data (3mks)

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iii) Explain any three problems likely to be encountered during the field study (6mks)

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HISTORY AND GOVERNMENT

FORM THREE

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Write your name and admission number in the space provided above.
2. The paper consists of three sections, A, B and C.
3. Answer all the questions in the spaces provided after each question.
4. Candidates should answer the questions in English.

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SECTION A

ANSWER ALL THE QUESTIONS IN THIS SECTION.

1. Define the term archaeology (1 mk)

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2. State two theories that explain the origin of man (2 mks)

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3. Who invented selective breeding during the Agrarian revolution in Britain? (1 mk)

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4. Name the African community that represents the river lake nilotes in Kenya. (1 mk)

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5. State two functions of the council of elders among the Agikuyu. (2 mks)

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6. Identify two earliest mission stations in Kenyan coast. (2 mks)

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7. State two limitations to the rights and freedom of movement of citizens in Kenya. (2 mks)

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8. Other than Trans – Saharan trade, name the other regional trade. (1 mk)

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9. Identify two examples of traditional forms of water transport.(2 mks)

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10. State two uses of bronze in ancient Egypt (2 mks)

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11. State one challenge facing London today. (1mk)

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12. Give two functions of saza chiefs among the Buganda. (2 mks)

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13. State two factors that determine the form of a constitution. (2 mks)

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14. Name one way in which direct democracy is exercised in Kenya. (1 mk)

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15. Why was Egypt strategic during the scramble and partition of Africa? (1 mk)

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16. Name the chartered company that administered East Africa on behalf of Britain. (1 mk)

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17. Name the first missionary who represented the Africans in the LegCo. (1 mk)

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SECTION B. (45 marks)

ANSWER ALL THE QUESTIONS IN THIS SECTION.

18(a). State five importance of rock art to the early man (5 mks)

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(b). Describe five ways in which homo erectus attempted to improve his way of life in the middle stone age period. (10 mks)

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19(a). Name three main sources of energy before the industrial revolution. (3 mks)

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(b). Explain six reasons why industrial revolution began in Britain. (12 mks)

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20(a). State five methods used by colonial government to obtain African labour for settlers farms. (5 mks)

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(b). Explain five factors that led to migration of Africans to the urban areas during colonial times. (10 mks)

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SECTION C (30 marks)

ANSWER ALL THE QUESTIONS IN THIS SECTION.

21(a). State three communes in Senegal where assimilation policy was applied (3 mks)

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(b). Explain five reasons why assimilation policy was not successful in West Africa (10 mks)

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22(a). State three national holidays in Kenya as per the 2010 constitution of Kenya. (3 mks)

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(b). Explain six merits of democracy. (12 mks)

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THIS IS THE LAST PRINTED PAGE.

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FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

HOMESCIENCE THEORY FORM THREE

PAPER 1

441/1

Instructions:

a) **This paper consists of 3 sections A B and C**
b) **Answer all questions in sections A and B and any 2 in section C.**
c) **Ascertain no page is missing.**
d) **Answer all questions in English.**

For examiners use only

Section	Question	Maximum score	Candidate's score
A	1 - 18	40	
B	19	20	
C	20 - 22	20	
		20	
Total score		**100**	

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Section A: Answer all questions in the spaces provided

1. State one function of sebum in the skin. (1mk)

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2. List down drying equipment. (2mks)

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3. Identify 2 inorganic refuse that can be recycled. (2mks)

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4. Name any 2 decorative stitches used to hold a hem. (2mks)

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5. Differentiate between bungalows and maissonattes. (2mks)

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6. Outline 2 characteristics of calabashes. (2mks)

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7. Identify three categories of clothes that are soaked/steeped before washing. (3mks)

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8. State three basic instructions given on medicines. (3mks)

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9. Mention the 2 main types of flour mixtures. (2mks)

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10. Differentiate between sponging and spotting. (2mks)

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11. Mention any 3 nutritional disorders associated with lifestyle. (3mks)

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12. Mention the 3 main functions of an opening. (3mks)

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13. Name any 2 vaccines that are given to a baby immediately after birth. (2mks)

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14. State any three sources of consumer information. (3mks)

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15. Name any 2 methods of controlling fullness that can be used at the waist of a skirt. (2mks)

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16. State 2 dangers posed by poor disposal of household refuse. (2mks)

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17. State any 3 conditions that favour the growth of yeast. (3mks)

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18. State any 2 qualities of a short crust mixtures. (2mks)

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SECTION B (COMPULSORY QUESTION (20MKS)

19. Your mother is going away to visit your grandmother for the weekend. Giving reasons describe how you would:- (20mks)

    a) Thorough clean her white canvas shoes.

    b) Launder her woolen sweater.

    c) Dry clean a silk scarf.

SECTION C (ATTEMPT ANY TWO QUESTIONS)

20. a) Explain any 5 problems related to weaning. (10mks)

    b) Describe 5 types of play and their importance to a growing child. (10mks)

21. a) Discuss any five advantages of using plastic basins in laundry. (10mks)

    b) Describe three qualities of a good laundry soap. (6mks)

    c) Give four reasons for ironing clothes. (4mks)

22. a) Discuss five important points to observe when planning meals for an expectant mother. (10mks)

    b) State any 5 considerations to make when buying a family house. (5mks)

    c) Give any 5 merits of breast feeding. (5mks)

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JINA: ……

SHULE: ……

NAMBARI YA USAJILI: …… TAREHE: …… SAHIHI: ……

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

102/2

KISWAHILI

KIDATO CHA TATU

MUDA: SAA 2 ½

MTIHANI WA MWISHO WA MUHULA WA PILI – KIDATO CHA TATU

MAAGIZO

(a) Andika jina lako na nambari yako katika nafasi ulizoachiwa hapo juu.

(b) Tia sahihi yako na uandike tarehe ya mtihani katika nafasi ulizoachiwa hapo juu.

© Jibu maswali yote katika karatasi hii.

(d) Andika majibu yako katika nafasi zilizoachwa katika kijitabu hiki cha maswali.

(e) Majibu yote yaandikwe kwa lugha ya Kiswahili.

Kwa matumizi ya mtahini pekee

	SWALI	**UPEO**	**ALAMA**
1	Ufahamu	15	
2	Ufupisho	15	
3	Matumizi ya Lugha	40	
4	Isimujamii	10	
	JUMLA	**80**	

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A: UFAHAMU (ALAMA 15)

Soma taarifa ifuatayo kisha ujibu maswali

Tokea muundo mpya wa serikali ya ugatuzi uanze kutekelezwa miaka miwili iliyopita, kumeendelea kushuhudiwa

Matatizo mengi hali iliyopelekea kushuhudiwa kwa msururu wa migomo na maandamano ya raia. Fujo za karibuni kabisa ni zile zinazoshuhudiwa katika miji mikubwa za wachuuzi na wafanyibiashara wakipinga hatua za serikali za kaunti kuwatoza ushuru takriban kwa kila huduma na bidhaa ikiwemo wanyama, kuku na ndege. La kuhuzunisha zaidi katika baadhi ya majimbo imeripotiwa kuwa raia wamelazimishwa kulipa ushuru kwa kutaka tu kuona maiti za jamaa zao kwenye vyumba vya kuhifadhia maiti.

Wanasiasa wameonekana kuwa na wakati mgumu kutetea mfumo huu mpya wa ugatuzi huku baadhi wakisema kwamba matatizo yanayoshuhudiwa kwa sasa yametokana na ugeni wa mfumo huo. Wengine wameinyoshea kidole serikali ya kitaifa kwamba ndiyo inayosambaratisha muundo huu. Wengine wanahoji kuwa bado ni mapema na kwamba kunatajika muda mrefu ili kufaulu.

Ni wazi kwamba kumekosekana nidhamu bora ya kusimamia maisha ya raia nchini Kenya. Matatizo yanayokumba raia kwa sasa ni dalili kuwa mfumo wa serikali ya ugatuzi umeongezea chumvi kwenye kidonda badala ya kutibu. Swali la je, hadi lini nidhamu ya kusimamia raia itakuwa ni suala la majaribio na makosa?.

Hatua ya kuwarundikizia raia ushuru mkubwa ni kitendo cha unyonyaji na cha dhuluma kinachofaa kupingwa. La kufahamishwa hapa ni kwamba ushuru ndio njia kubwa ya kuzalisha mapato ya serikali zinazojifunga na mfumo wa kimagharibi wa kiuchumi wa kibepari ikiwemo Kenya. Asilimia 90 ya mapato ya serikali za kibepari huegemea ushuru. Kwa hivyo hatua ya serikali za kaunti katika kuwanyonya raia kwa kuwalipisha ushuru si ajabu bali ni thibitisho kuwa jamii ya Kenya inaongozwa na nidhamu ya kiuchumi ya ubepari mfumo wa unyonyaji na ukandamizaji. Ukweli unabakia kuwa ndani ya serikali za kibepari raia ndio hubebeshwa mzigo wa ushuru unaoishia matumboni mwa viongozi.

Miito ya mabadiliko ya katiba nay a miundo mipya ya kiutawala si lolote ila ni moja tu ya hatua za mfumo wa kibepari kujipa muda wa kuishi na kuziba aibu zake za kushindwa kusimimia maisha ya watu. Kufeli huku kwa mfumo huu kunashuhudiwa hadi kwenye nchi kubwa za

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kibepari kama marekani na Uingereza hivyo nazo zimekumbwa tele na maandamano na fujo za raia wakilalamikia hali ngumu ya maisha.

Maswali

(a) Yape makala haya anwani mwafaka. (alama 1)

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(b) Eleza mtazamo wa wanasiasa kuhusu utepetevu wa mfumo huu. (alama 3)

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© "Ugatuzi nchini Kenya ni mfumo wa kibepari" Thibitisha kauli hii kwa kurejelea makala. (alama 4)

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(d) Migomo ni zao la matatizo yaliyogatuliwa kutoka serikali kuu. Toa sababu zinazosababisha migomo katika serikali za ugatuzi. (alama 4)

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(e) Thibitisha jinsi mfumo wa ugatuzi umeongeza chumvi kwenye kidonda badala ya kutibu. (alama 2

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(f) Eleza maana ya maneno yafuatayo. (alama 2)

(i) Ugatuzi:

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(ii) Kibepari:

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B: UFUPISHO (ALAMA 15)

Soma makala yafuatayo na ujibu maswali

Mojawapo kati ya misingi na nguzo za maendeleo ulimwenguni ni viwanda. Viwanda ni muhimu kwa kuwa ndivyo vinavyoigeuza malghafi yanayopatikana na kuwa bidhaa zinazoweza kutumiwa na watu. Katika nchi zinazoendelea, ambazo hazina uwezo mkubwa wa mitaji, viwanda vinavyoimarika ni vile vidogo. Hivi ni viwanda ambavyo huhusisha amali za mikono.Kuimarika kwa viwanda hivi vidogo kunatokana na sababu mbalimbali.

Nchi zinazoendelea huwa na masoko finyu hasa kwa kuzingatia uwezo wa ununuzi wa wanaolengwa na bidhaa za viwanda. Katika msingi huu, viwanda vikubwa vitawiwa vigumu kufanya biashara katika mazingira ambako masoko yake ni finyu au utashi wa bidhaa zake sio mkubwa.

Viwanda vidogo pia vina uwezo wa kuwaajiri wafanyakazi wengi hasa kwa kuwa havina uwezo wa kugharamia mashine. Uajiri huu wa wafanyakazi wengi ni muhimu katika maeneo mengi ambako tatizo la uajiri ni mojawapo wa matatizo sugu. Tofauti na mataifa ya kitasnia, mataifa yanayoendelea hayana mifumo imara ya kuwakimu watu wasiokuwa na kazi. Utegemezi wa jamaa wanaofanya kazi kwa hivyo unakuwa nyenzo ya pekee ya kuyamudu maisha.

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Kuanzisha viwanda vidogo hakuhitaji mtaji mkubwa tofauti na viwanda vikubwa. Hali hii inasahilisha uwezekano wa watu wengi kujasurisha shughuli yoyote ile. Sambamba na suala hili ni kuwa ni rahisi kujaribisha bidhaa mpya kwa kiwango kidogo cha kiwanda kidogo. Ikiwa mzalishaji yeyote atazalisha bidhaa mpya kwa mapana, kwa mfano kama ilivyo kwa viwanda vikubwa, pana uwezekano wa kupata hasara kubwa. Huenda utashi wa bidhaa hizo uwe mdogo ukilinganishwa na ugavi wa bidhaa zenyewe.

Majaribio mazuri huwa ni kwa kiwango kidogo. Kuwepo kwa viwanda vidogo huwa ni chocheo kubwa la usambazaji wa viwanda hadi maeneo ya mashambani. Hali hii inahakikisha kuwa nafasi za ajira zimesambazwa nchini hali ambayo inasaidia kuhakikisha kuwa pana mweneo mzuri wa kimapato nchini. Mweneo huu wa mapato unachangia katika kuboresha uwezo wa kiununuzi wa umma. Huu ni msingi muhimu wa maendeleo. Upanuzi na ueneaji wa viwanda vidogo vidogo ni msingi mkubwa wa kujitegemea kiuchumi. Aghlabu viwanda vikubwa huegemea kwenyemitaji ya mashirika ya kimataifa na huwa msingi wa kuendelezwa kwa utegemezi wa kiuchumi.

Licha ya faida zake, uenezaji au kutanda kwa viwanda hukabiliwa na matatizo mbalimbali. Tatizo la kwanza linahusiana na mtaji. Lazima pawepo na mbinu za kuweka akiba ili kuwa na mtaji wa kuanzisha biashara.

Njia mojawapo ya kufanya hivi ni kwa kutegemea masoko ya mitaji ambayo katika mataifa mengi hayajaendelezwa vyema. Inakuwa vigumu katika hali hii basi kupata pesa kwa uuzaji wa hisia kwenye masoko hayo.

Tatizo jingine linalotokana na ukosefu wa mikopo ya muda mrefu ya kibiashara kwa wenye viwanda vodogo vidogo. Mikopo ya aina hii huwa muhimu hasa pale ambapo anayehusika ana mradi wa kununua vifaa kama mashine. Mikopo ya muda mfupi inayopatikana kwenye mabenki huweza kuwashinda wengi kutokana na viwango vya riba kuwa juu. Haimkiniki kwa viwanda kama hivi kukopa kutoka nje ya nchi zao. Juhudi za kuendeleza viwanda hivi huweza pia kukwamizwa na tatizo la kawi kama vile umeme. Gharama za umeme huenda ziwe juu sana. Isitoshe, si maeneo yote ambayo yana umeme. Matatizo mengine huhusiana na ukosefu wa maarifa ya kibiashara, ukosefu wa stadi za ujasiriamali au kuwa na ujasiri wa kujiingiza kwenye shughuli Fulani na miundo duni.

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Ili kuhakikisha kuwa viwanda vimekuzwa na kuendelezwa pana haja ya kuchukua hatua kadha. Kwanza, kuwepo na viharamisho kwa wanaoanzisha viwanda vidogo vidogo kama vile punguzo la kodi, kuhimiza kuanzishwa kwa viwanda vidogo vidogo na kusaka kuyapanua masoko kwa ajili ya bidhaaa zinazozalishwa na viwanda hivyo. Aidha kuanzishwa na kupanuliwa kwa taasisi za kuendeleza upanuzi huo. Pana haja ya kuwekeza kwenye rasilimali za kibinadamu; kuelimishwa na kupanua uwezo wao wa kuyaelewa mambo mbalimbali. Miundo msingi haina budi nayo kupanuliwa na kuimarishwa. Upo umuhimu pia wa kuongeza kasima inayotengewa maendeleo na ukuzaji wa viwanda ili kuharakisha maendeleo yake pana umuhimu wa kupambana na ufisadi unaoweza kuwa kikwazo kikubwa. Inahalisi kutambua ikiwa viwanda vitatanda nchini, uchumi wan chi nao utawanda.

Maswali

(a) Kwa maneno 65 – 75, eleza ujumbe muhimu unaopatikana katika aya ya pili hadi ya nne. (alama 8,1 utiririko)

MATAYARISHO

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(b) Kwa maneno 50 – 55, fafanua mambo yanayotinga ukuaji wa viwanda. (alama 7, 1 utiririko)

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C:MATUMIZI YA LUGHA (ALAMA 40)

(a) Andika konsonanti mbili ambazo ni irabu (alama 2)

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(b) Tofautisha mofimu huru na mofimu tegemezi kwa mfano mwafaka (alama 2)

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© Eleza sifa mbili za kitenzi kishiriki kikamilifu. (alama 2)

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(d) Fafanua matumizi mawili ya herufi za mlazo. (alama 2)

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(e) Tunga sentensi mbili zinazoanza kwa: (alama 2)

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(i) Kiwakilishi nafsi huru:

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(ii) Kiwakilishi nafsi kiambata:

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(f) Ichanganue sentensi ifuatayo kwa vistari. (alama 4)

Wale wane watapelekwa shuleni kesho.

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(g) Eleza matumizi ya ‘ki’ katika sentensi hii. (alama 3)

Kitoto chake kikila kitalala.

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(h) Nyambua vitenzi vifuatavyo katika hali zilizo kwenye mabano. (alama 2)

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(i) Tua (Tendana)

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(ii) Fumba (tendata)

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(I) Tunga sentensi mbili tofauti kwa kutumia neno walakini kama: (alama 2)

(i) Kiunganishi:

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(ii) Nomino

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(J) Tambua shamirisho katika sentensi hii. (alama 2)

Juma alimuuzia mtalii wa kichina leso za kimasai.

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(k) Andika udogo wingi wa sentensi ifuatayo. (alama 2)
Njia hii inafaa zaidi kuliko ile.

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(L) Geuza sentensi iwe katika usemi wa taarifa. (alama 3)

"Nitawatembelea mwaka ujao," Moraa alituahidi.

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(M) Andika upya sentensi kwa kutumia ‘O’ rejeshi tamati. (alama 2)

Lori liloanguka si lile unalozungumzia.

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(N) Tunga sentensi moja kutofautisha vitate vifuatavyo. (alama 2)

(i) Chaka

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(ii) Shaka

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(O) Onyesha maana mbili za neno change katika sentensi. (alama 2)

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(p) Tunga majina mawili kutokana na dhuru. (alama 2)

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(Q) Tofautisha sentensi zifuatazo. (alama 2)

(i) Ungekimbia ungemfikia:

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(ii) Ungelifikia ungelifikia

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(r) Fafanua maana mbili zinazojitokeza katika sentensi ifuatayo. (alama 2)

Alitukimbilia sana.

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D: ISIMU JAMII (ALAMA 10)

MHUSIKA I: Nidhamu , Mheshimiwa Sudi. Hili ni onyo dhidi ya tabia hiyo.

MHUSIKA II: Nisamehe Bwana……..

MHUSIKA I: sasa ninakaribisha swali la tatu. Mheshimiwa Mambo, uliza swali lako.

MHUSIKA III: Ninaomba kufahamishwa ni kwa nini Waziri wa Maji ameshindwa kusambaza huduma za maji katika kijiji cha Walalahoi.

Maswali

1. Bainisha sajili ya makala haya. (alama 2)

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2. fafanua sifa za sajili hii. (alama 8)

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NAME: ……

SCHOOL: ……

ADM NO: …… DATE: …… SIGN: ……

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

FORM 3

MATHEMATICS

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

Kenya Certificate of Secondary Education

MATHEMATICS

INSTRUCTIONS TO CANDIDATES

1. Write your name, admission number and school in the spaces provided.
2. This paper consists of two sections; **Section I** and **Section II.**
3. Answer ALL the questions in Section I and ONLY FIVE questions in Section II.
4. All answers and working must be written on the question paper in the spaces provided below each question.
5. Show all the steps in your calculations, giving your answer at each stage in the space provided below each question.
6. Marks may be given for correct working even if the answer is wrong.
7. Non programmable silent electronic calculators and **KNEC** mathematical tables may be used except where stated otherwise.
8. 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

SECTION I

Question	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**TOTAL**
Marks																	

SECTION II

Question	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**TOTAL**
Marks									

Grand Total

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SECTION I (50 Marks)

Answer all the questions in the spaces provided.

1. Without using tables or a calculator evaluate; (3 marks)

$$\frac{-24 \div -8 \times 5 - (-30)}{-16 \times 4 \div 2 + (-8)}$$

2. Factorize completely $3x^2 - 2xy - y^2$ (2 marks)

3. A Kenyan bank buys and sells foreign currencies as shown below.

Currency	Buying (Ksh)	Selling (Ksh)
1 Hong Kong dollar	9.84	9.87
100 Japanese yen	76.08	76.12

A tourist arrived in Kenya with 100 500 Hong Kong Dollars and changed the whole amount to Kenyan shillings. While in Kenya he spent Ksh. 430 897 and changed the balance to Japanese yen before leaving for Tokyo. Calculate the amount in Japanese Yen that he received. (3 marks)

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4. Use logarithm tables to evaluate (4 marks)

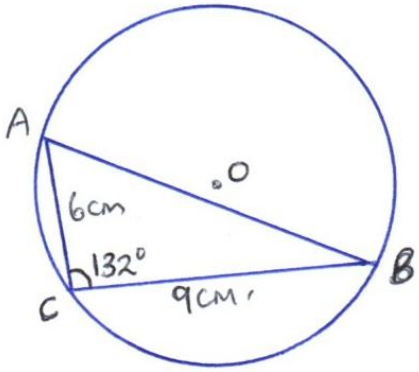
$$\sqrt[3]{\frac{0.7432 \times 80.23}{(4.125)^2}}$$

5. The sides of a triangle were measured to 1 decimal as 6.5cm, 7.4cm and 8.2cm respectively. Calculate the percentage error in its perimeter (4 marks)

6. Line L_1 passes through points $A(2, -4)$ and $B\ (6, -8)$. Find the equation of the line L_2, the perpendicular bisector of AB leaving your answer in the form $ax + by + c = 0$. (3 marks)

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7. In the figure below, O is the centre of the circle. AC = 6 cm, BC = 9 cm and $\angle ACB = 132°$



a) Calculate length AB correct to 2 decimal places. (2 marks)

b) Calculate the area of the circle. (2 marks)

8. Evalute, without using mathematical tables or the calculator, the expression. (3 marks)

$2\log_{10} 5 - \frac{1}{2}\log_{10} 16 + 2\log_{10} 40$

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9. Rationalize the denominator and leave your answer in surd form. (3 marks)

$$\frac{3}{2\sqrt{5}+\sqrt{2}}$$

10. Solve the quadratic equation $6a^2 = 5a + 4$ using completing the square method. (3 marks)

11. The hire purchase terms of a cupboard is a deposit of Ksh 4,400 and six monthly installments of Ksh 900 each. The hire purchase price is 175% of the cost price while the cash price is 25% more than the cost price .Calculate the cash price of the cupboard. (3 marks)

12. Construct triangle PQR in which $PQ = QR = 5\ cm$ and $\angle PRQ = 35°$. Measure PR. (3 marks)

13. **A** and **B** are two matrices. If $\mathbf{A} = \begin{bmatrix} 1 & 2 \\ 4 & 3 \end{bmatrix}$ find B given that $\mathbf{A^2} = \mathbf{A} + \mathbf{B}$. (3 marks)

14. Make n the subject of the formulae in $\mathrm{A} = \mathrm{P}\left(1 + \frac{\mathrm{r}}{100}\right)^{\mathrm{n}}$ (3 marks)

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15. Solve the following inequality and show your solution on a number line. (3 marks)

$$4x - 3 \leq \frac{1}{2}(x + 8) < x + 5$$

16. The sixth term of an arithmetic progression is 27 and the tenth term is 43. Find the 16^{th} term. (3 marks)

SECTION II (50 Marks)

Answer ONLY five the questions in the spaces provided.

17. Mr. Omwega is employed. His basic salary is Kshs. 21, 750 and is entitled to a house allowance of Kshs 15, 000 and a travelling allowance of Kshs 8, 000 per month. He also claims a family monthly relief of Kshs 1, 056 per month. Other deductions are;

    Union dues Kshs 200 and

    Co-operative shares Kshs 4, 500 per month.

The table below shows the tax rates for the year.

Income (Kshs per annum)	**Tax rates**
1 – 116, 600	10%
116, 161 – 225, 600	15%
225, 601 – 335, 040	20%
335, 041 – 444, 480	25%
Over 444, 480	30%

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Calculate;

a) Mr. Omwega's annual taxable income. (2 marks)

b) The tax paid by Mr. Omwega in the year. (6 marks)

c) Mr. Omwega's net income per month. (2 marks)

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18. a) Complete the table below giving your values correct to 2 decimal places. (2 marks)

$x°$	-90	-75	-60	-45	-30	-15	0	15	30	45	60	75	90
$3\cos 2x°$	-3	-2.6		0	1.5		3	2.6		0	-1.5		-3
$\sin(2x + 30°)$	-0.5		-1	-0.87		0	0.5		1		0.5	0	-0.5

b) On the grid provided, draw on the same axes the graph of $y = 3\cos 2x°$ and $y = \sin\ (2x + 30°)$ for interval $-90° \leq x \leq 90°$. Take the scale 1 cm represent $15°$ on x – axis and 2 cm represent 1 unit on the y – axis. (4 marks)

(PROVIDE A GRAPH PAPER)

c) Use the graph in (b) above to solve the equation;

i. $3\cos 2x° = \sin(2x + 30°)$ (2 marks)

ii. $6\cos 2x° + 5 = 0$ (2 marks)

19. Triangle ABC has coordinates $A\ (-4,1), B\ (-1,2)$ and $C\ (-3,4)$.

a) On the grid provided, draw triangle ABC. (1 mark)

(PROVIDE A GRAPH PAPER)

b) Triangle $A'B'C'$ is the image of triangle ABC under an enlargement with scale factor -1 about the origin. On the same grid draw triangle $A'B'C'$ and state its coordinates. (3 marks)

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c) Triangle $A''B''C''$ is the image of triangle $A'B'C'$ under a rotation of $-90°$ about the origin. On the same grid draw triangle $A''B''C''$ and state its coordinates. (3 marks)

d) Under a certain translation T, the image of points $A''B''C''$ are mapped onto triangle $A'''B'''C'''$ such that point A'' is mapped onto $A'''(2, 3)$.

i. Find the translation T. (1 mark)

ii. Find the coordinates of the image points B''' and C''' and plot triangle $A'''B'''C'''$ on the same grid. (2 marks)

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20. A parent has two children whose age difference is 5 years. Twice the sum of the ages of the two children is equal to the age of the parent.
    a) Taking x to be the age of the elder child, write an expression for
        i. The age of the younger child. (1 mark)

        ii. The age of the parent (1 mark)

    b) In twenty years' time, the product of the children's age will be 15 times the age of their parent
        i. Form an equation in x and hence determine the present possible ages of the older child. (4 marks)

        ii. Find the present possible ages of the parent. (2 marks)

        iii. Determine the possible ages of the younger child in twenty years' time. (2 marks)

21. The masses of 40 students were measured to the nearest kilogram and recorded as shown below.

52	58	54	51	59	53	56	51
43	41	53	58	54	65	58	59
49	63	49	49	47	45	46	52
52	55	52	55	49	57	53	63
42	45	46	48	60	49	48	53

a) Use this data to complete the table below. (4 marks)

Mass in Kg	Class mid point x	Frequency f	fx
$41-45$			
$46-50$	48	10	480
$51-55$			
$56-60$			
$61-65$	63	3	189
		$\sum f = 40$	$\sum f x =$

b) Calculate ;

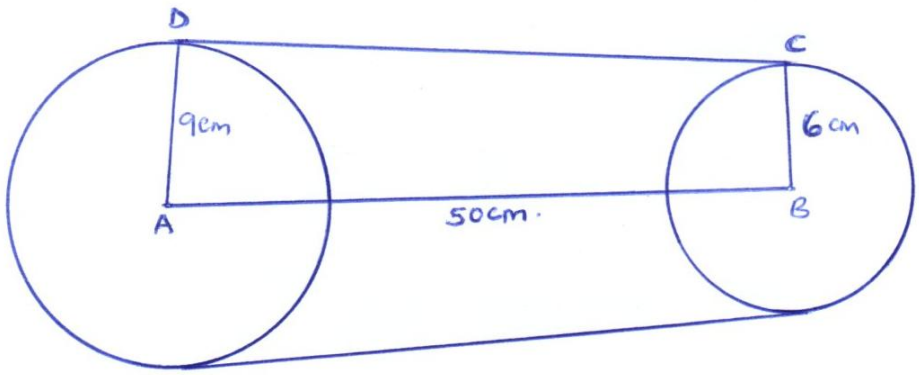
i. The mean mass. (2 marks)

ii. The median mass (2 marks)

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c) Draw a frequency polygon for the distribution. (2 marks)

22. The figure below shows two pulleys with centres A and B of radii 9 cm and 6 cm respectively. C and D are contact points of the belt with the pulleys. The distance between the centres of the two pulleys is 50 cm. a belt is tied around the two pulleys as shown.



Calculate,

a) Length DC (2 marks)

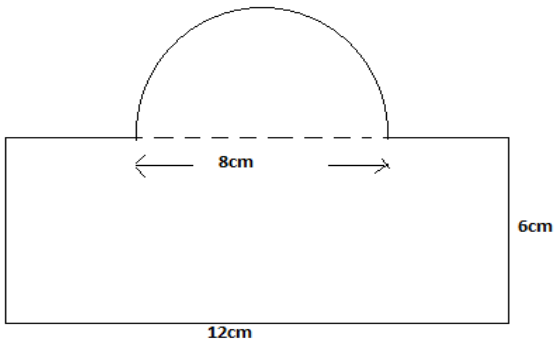
b) The length of arc DE (3 marks)

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c) The length of arc CF (3 marks)

d) The total length of the belt. (2 marks)

23. The figure below shows a rectangle attached to a semi-circle



a) Calculate;

i. the area of the figure (3marks)

ii. the perimeter of the figure (3 marks)

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b) If the figure represents a cross-section of a steel girder of length 9m, determine the volume of the steel girder in cubic centimetres (2 marks)

c) If the mass of the steel girder is 306kg, calculate its density in g/cm^3. (2 marks)

24. Five towns P,Q, R S and T are situated such that Q is 200 km east of P. R is 300 km from Q on a bearing of 150° from Q. S is 350 km on a bearing of 240° from R. T is 250 km from S and its bearing from P is 160°.
    a) Using a scale of 1 cm to represent 50 km, draw a diagram representing the position of the towns. (5 marks)

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b) From the diagram, determine:

i. The distance in km from P to T. (1 mark)

ii. The bearing of S from Q. (1 mark)

c) A plane heading to town R takes off from town P and flies upward at a constant angle which is less than 90°. After flying a distance of 100 km in the air, it sees a town R at angle of depression of 50°. By scale drawing, find the horizontal distance of the plane from R at this point. (3 marks)

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SCHOOL: ……

ADM NO: …… DATE: …… SIGN: ……

FORM 3 END TERM 2 HYBRID/REFLECTOR EXAMS

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PYSICS FORM 3

END TERM 2

TIME 2 HRS

INSTRUCTIONS

i) Answer All questions in the spaces provided.

ii) Use the following CONSTANTS where applicable.

iii) All working must be clearly shown for numerical questions.

iv) Candidates should check to ascertain that all questions and pages are available.

Constants

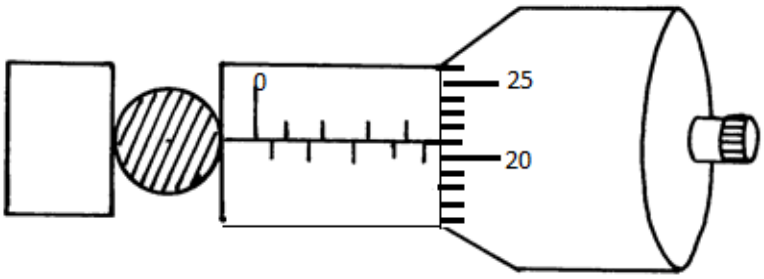
i) Density of water = 1g/cm3 or 1000kg/m^3.

ii) Gravitational acceleration = 10m/s^2.

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SECTION A (50 MARKS)

1. A spherical ball bearing of mass 0.0024 kg is held between the anvil and spindle of a micrometer screw gauge. The reading on the gauge when the jaws are closed without anything in between is 0.11mm. Use this information and the position of the scale in the figure below to answer the questions **(a)** and **(b)** below:



a) What is the diameter of the ball bearing? (1 mk)

b) Find the density of the ball bearing correct to 3 significant figures (3 mks)

2. Figure 2 shows two identical thermometers. Thermometer **A** has a blackened bulb while thermometer **B** has a silvery bulb. A candle is placed equidistant between the two thermometers

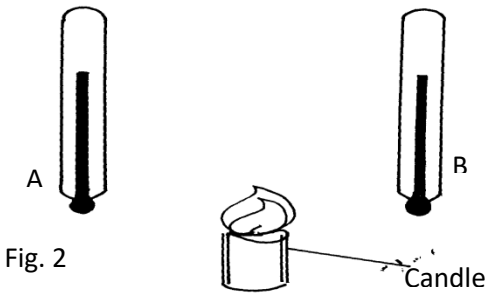


Fig. 2

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State with a reason the observations made after some time. (2 mk)

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3. A density bottle weighs 23.5 g when empty and 63.1g when partly filled with soil. When water is added to the soil to completely fill the bottle, the new weight was 98.1g. If the weight of the bottle when filled with water only is 73.5g, calculate the density of the soil. (3mks)

4. A boat sends a sound signal in the middle of Lake Victoria and an echo is heard after 6 seconds. Determine;

   i) The depth of the lake. (2mks)

   ii) The frequency of the signal stated in (i) above. (2mks)

   (Take speed of sound in water = $1440ms^{-1}$, wavelength = 0.4m)

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5. The graph in the figure below shows the relationship between the attractive forces of an electromagnet and the magnetizing current. Give reasons for the shape of the graph by domain theory. (2mrks)

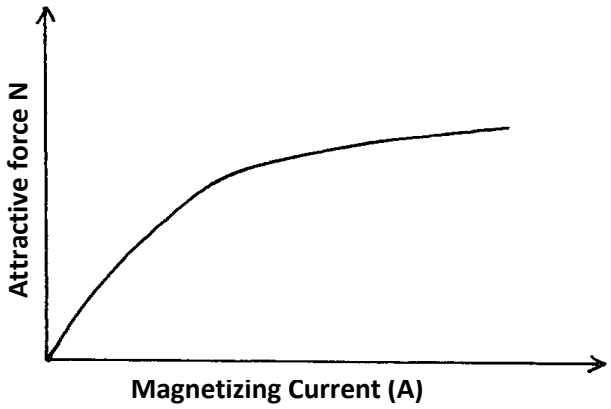
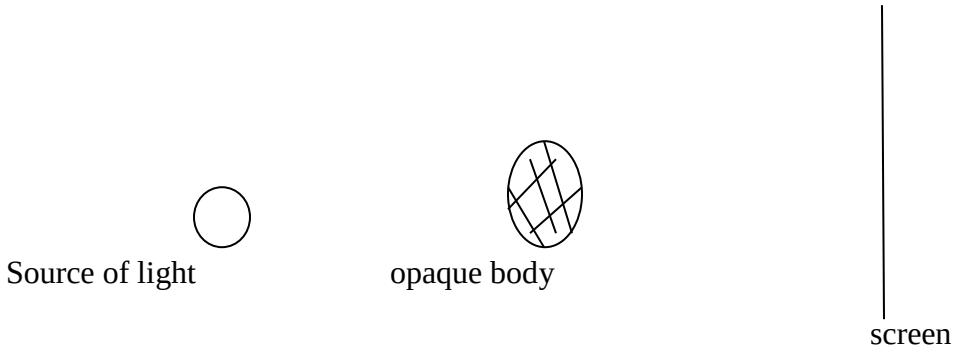


Fig 2

6. An opaque object is placed before a light source as shown in figure 2 below.



Draw rays in the diagram to show how the shadow is formed. (2mks)

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7. Explain why an electric kettle with shinny outer surface is more efficient than one with a dull outer surface. (2mks)

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8. The stability of a body can be increased by increasing the base area and lowering its center of gravity. State **one** way of lowering its center of gravity. (1mk)

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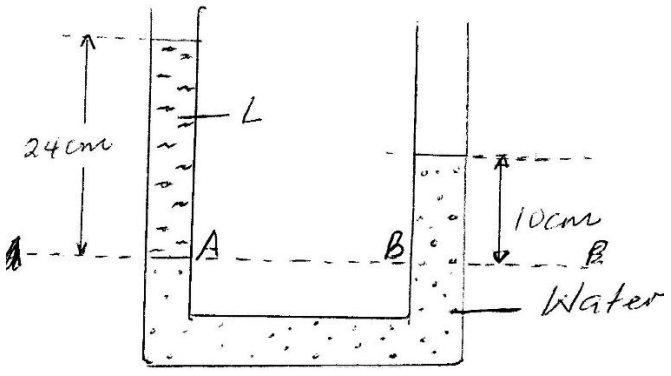
9. Name **one** force that determines the shape of a liquid drop on a solid surface (1mk)

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10. Using the idea of particles, differentiate between solid and liquid in terms of intermolecular distance. (2mks)

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11. Two immiscible liquid water and liquid L are put in a U tube as shown below.



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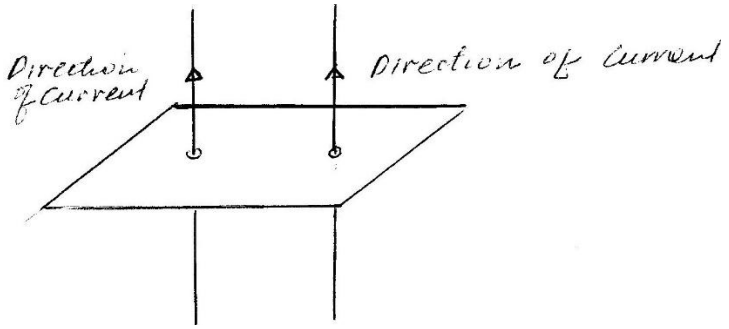
i) Use the diagram to find;

A) Pressure at B (2mks)

B) Pressure at A. (1mk)

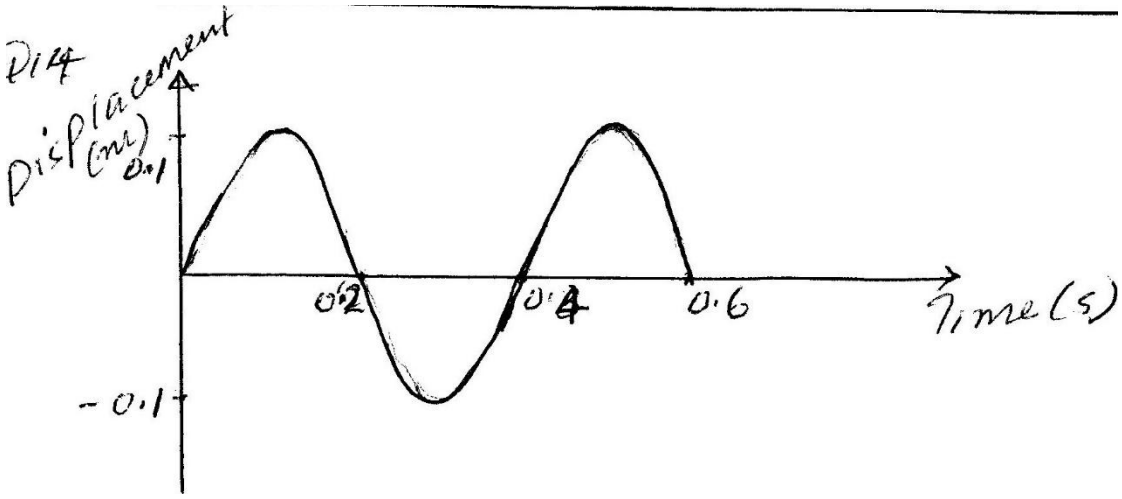
C) Density of liquid L. (2mks)

12. Draw the magnetic field pattern around the two parallel conductors shown below. (2mks)



13. Water flows at a velocity of 48cm/s in a drainage pipe with non-uniform cross sectional area at a point where the radius of the pipe is 2.1cm. calculate the diameter of the pipe in a section in which the velocity becomes 32cm/s. (3mks)

14. The figure below shows a graph of displacement against time for a wave.



Determine;

i) Periodic time (1mk)

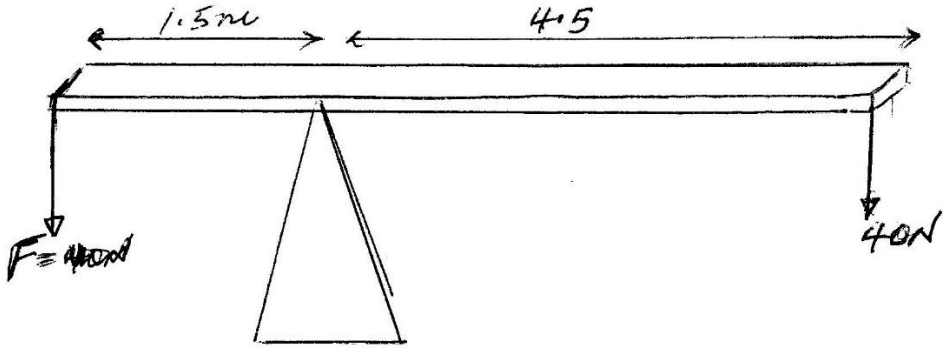
ii) Frequency (2mks)

iii) Amplitude (1mk)

15. a) State the principle of the moments. (1mk)

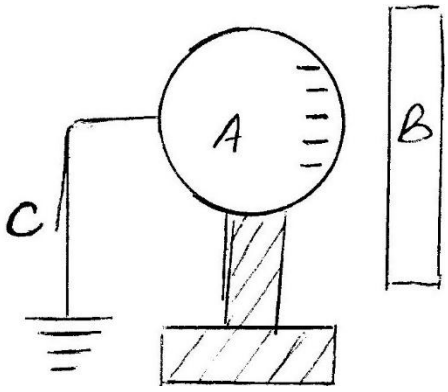
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b) The figure below shows a uniform bar of length 6m in equilibrium under the action of two forces 40N and F.



If the weight of the bar is 20N Calculate the force F (3mks)

16. The figure below represents a step in charging a material A by induction.



i) What is charge on B. (1mk)

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ii) Explain what happens at C (1mk)

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17. A form one student has the following apparatus two cells, a switch, connecting wires and two bulbs. Draw a possible circuit diagram for the arrangement that will allow the two bulbs to light simultaneously. (2mks)

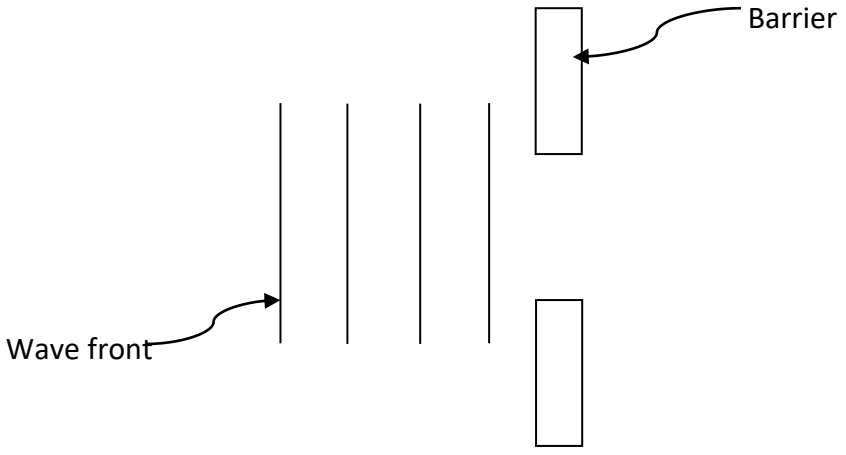
18. (a) Define diffraction with respect to waves. (1 mark)

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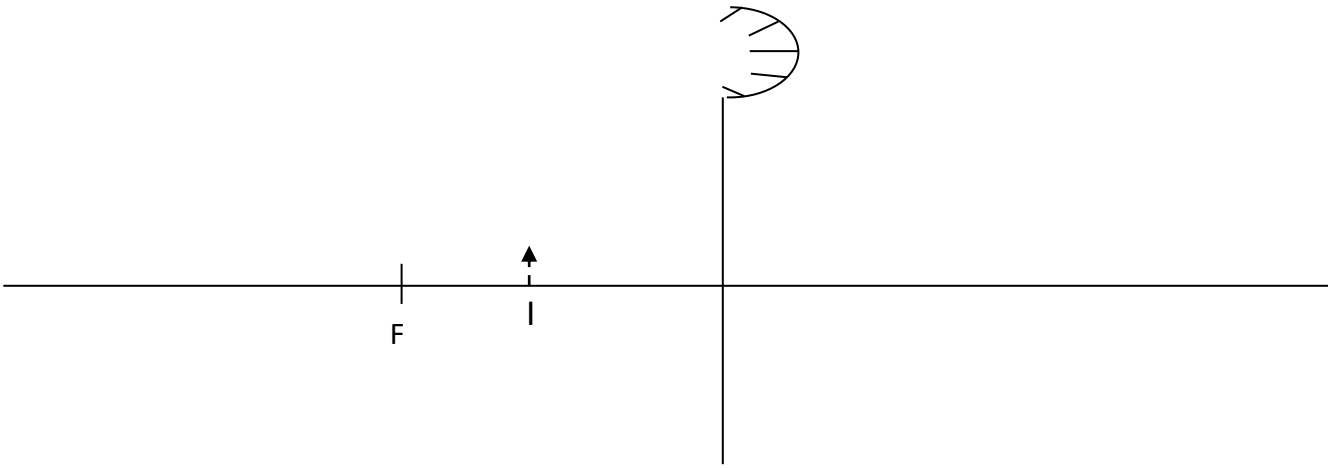
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(b) In the diagram below the size of the aperture at the barrier is 10cm while the distance between two consecutive wave fronts is 3cm. If the waves are moving towards the barrier, draw the wave fronts as they appear after passing through the aperture. (2 marks)



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19. The figure below (drawn to scale) shows the image I, formed by a convex mirror. F is the virtual principal focus of the mirror.



Using ray diagrams locate the position of the object and draw the object. (2 marks)

SECTION B (50 MARKS)

20. (a) Distinguish between elastic and inelastic collision (1mk)

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(b) A ball **X** of mass 0.1kg moving with a velocity of 6m/s collides directly with a ball **Y** of mass 0.2kg at rest. **X** bounces back with a velocity of 2m/s in the opposite direction after collision.

Determine: -

(i) The velocity of **Y** after collision (3mks)

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(ii) The kinetic energy of **Y** after collision (2mks)

(c) Figure 6 below shows a tape made from a ticker tape timer running at 50Hz.

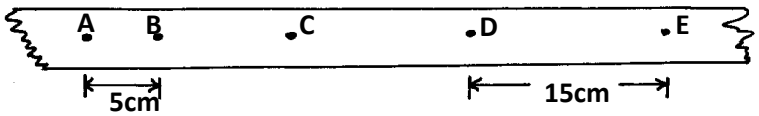


Fig. 6

Find.

(i) The time taken for one tick interval (1mk)

(ii) The velocity between points **AB** and **DE** (2mks)

(iii) The acceleration of the body over the interval **AE**. (3mks)

21. a) List **two** effects of force. (2mks)

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b) Define mechanical advantage and velocity ratio of a machine. (2mk)

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c) A man uses an inclined plane to lift 100kg load through a vertical distance of 8m. The inclined plan makes an angle of 30^0 with the horizontal. If the efficiency of the machine is 80%, calculate;

i) The velocity ratio of the machine. (1mk)

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ii) The effort needed to move the load up the inclined plane at a constant velocity. (2mks)

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d. A force of 20N acts on the suspended block of wood of mass 1kg for 1.2 seconds shown below.

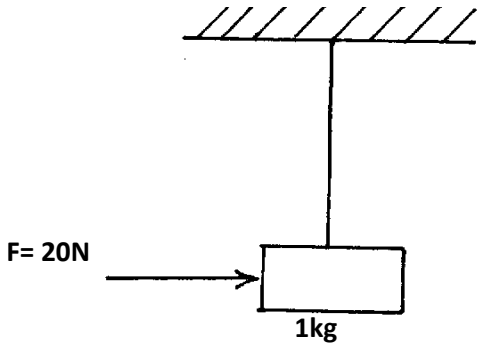


Fig.8

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Assuming the air resistance is negligible, how high will the block rise as it swing(3mrks)

22. a) i) State Ohms law (1mk)

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ii). Give one example of ohmic conductor and non ohmic conductor. (2mks)

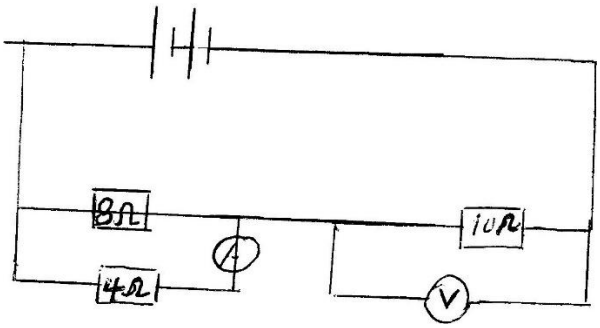
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b). The figure below shows a circuit with an ammeter reading 1.5A.



Determine;

I) Potential difference across the 4-ohm resistor. (2mks)

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II) The current through 10-ohm resistor. (2mks)

III) Voltmeter reading (2mks)

c) An electric heater has a resistance of 100 ohms and is connected to a 240 v mains. Determine;

i) Current flowing in the heater. (2mks)

ii) Power rating of the heater (2mks)

23. State Snell's law. (1mk)

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(b) A coin is placed beneath a transparent block of thickness 10cm and refractive index 1.56. Calculate the vertical displacement of the coin. (3mks)

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(c) The speed of green light in a prism is 1.94×10^8m/s.

(i) Determine the refractive index of the prism material.
(Speed of light in air = 3.0×10^8m/s). (2mks)

(ii) Determine the critical angle of the prism material. (2mks

(d) State **one** advantages of using optical fiber in communication. (1mks)

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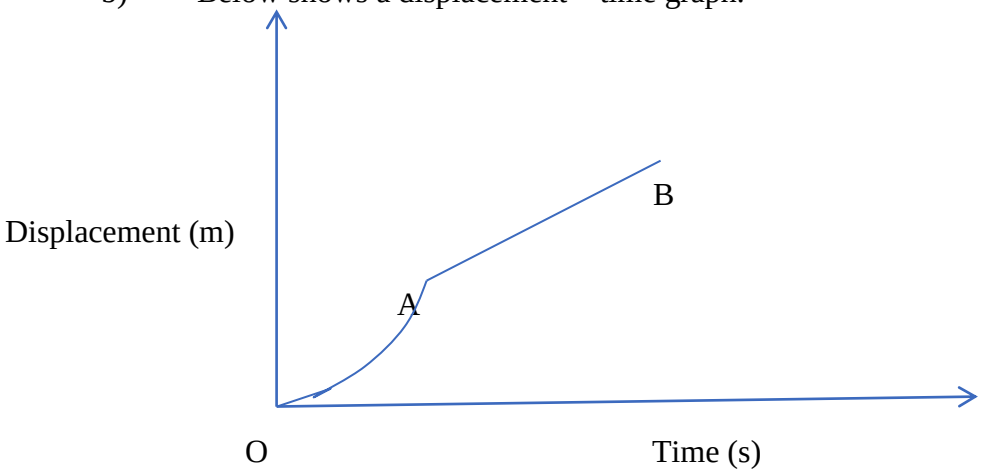
24. a) Define velocity. (1mk)

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b) Below shows a displacement – time graph.



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Describe the motion of the body between points:

OA**……** (1 mk)

AB**……**(1 mk)

c). An object dropped from a height, h, attains a velocity of 6m/s just before hitting the ground. Find h. (3mks)

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