EXCELLING STUDENTS FORM 3 END TERM 2 HYBRID EXAMS *(ALL SUBJECTS TESTED)*



EXCELLING STUDENTS FORM THREE END TERM TWO HYBRID EXAMS

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

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

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……..

ADM NO: ……..……. SIGN: ……..… DATE: ……...

AGRICULTURE/443

FORM THREE (3)

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided.

2. This paper consists of three sections. Section A, B and C.

3. Answer all questions in section A and B in the spaces provided.

4. Answer ANY TWO questions in section C in the spaces provided.

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SECTION	TOTAL MARKS	STUDENTS SCORE

PERCENTAGE SCORE

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SECTION A.
Answer all questions in this section in the spaces provided (30 MARKS)

1. State **two** function of the reticulum. **(1mk)**

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2. State **four** factors affecting digestibility. **(2mks)**

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3. State **four** factors that determine amount of food given to livestock. **(2mks)**

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4. Name **two** examples of three-host tick. **(1mk)**

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5. State **two** effects of fleas in poultry. **(1mk)**

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

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7. State **four** factors that affect the pulse rate of an animal. **(2mks)**

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8. State **four** structural requirements for grain silo and Cyprus bins. **(2mks)**

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9. State **four** factors to consider when sitting a beehive. **(2mks)**

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10. State **four** advantages of using a spray race. **(2mks)**

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11. State **four** factors that determine the quality of honey. **(2mks)**

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12. State **two** signs of kindling in rabbits. **(1mk)**

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13. State **four** characteristics of a good layer. **(2mks)**

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14. State **two** disadvantages of branding as a method of identification. **(2mks)**

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15. State **four** disadvantages of embryo transplant. **(2mks)**

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16. State the difference between close breeding and line breeding. **(1mk)**

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17. State **two** advantages of contemporary comparison as a method of selection. **(1mk)**

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18. State what is added to the York at isthmus during egg formation in a hen. **(1mk)**

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19. State the role of prostate glands in the bull. **(1mk)**

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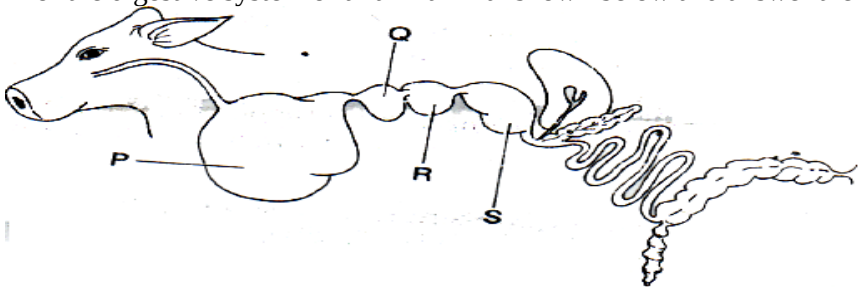
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SECTION B (20mks) Answer all questions in this section in the spaces provided.

20. A farmer wanted to prepare a feed ration containing 20% DCP (Digestible Crude Protein). He used oats which contain 12% DCP and Simsim seed cake which contains 50% DCP. Using the Pearson's square method, compute the amounts of oat and simsim seed cake he would use to make a 100kg ration. Show your working. **(4mks)**

20. Study the diagram of the digestive system of a farm animal shown below and answer the questions that follow.



a) Name the parts labelled P, Q, R and S. **(2mks)**

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b) State the function of the part labelled R. **(1mk)**

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c) Give **two** reasons why livestock with the above parts are able to digest cellulose food material. **(2mks)**

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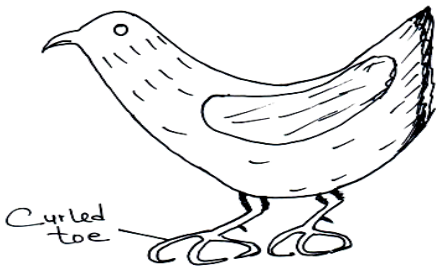
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d) In which parts labelled P, Q, R and S would a nylon paper be found if fed on by an animal with the above digestive system? **(1mk)**

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22. Study the illustration below and answer the question beneath.



(a) What causes curled toe paralysis? **(1mk)**

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(b) State **two** other deficiency symptoms besides curled toe paralysis. **(2mks)**

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(c) State **four** sources of vitamin B_2. **(2mks)**

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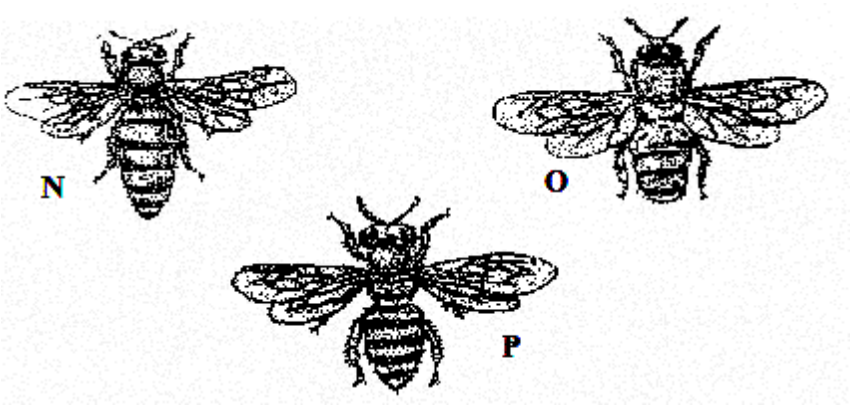
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23. Study the illustrations below and then answer the questions that follow



(a) Name the types of bees labelled **N , O** and **P** . **(1mk)**

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(b) State **two** functions of bee labelled P int the colony. **(1mk)**

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(c) Name **two** parasites that attack the bees in the colony. **(1mk)**

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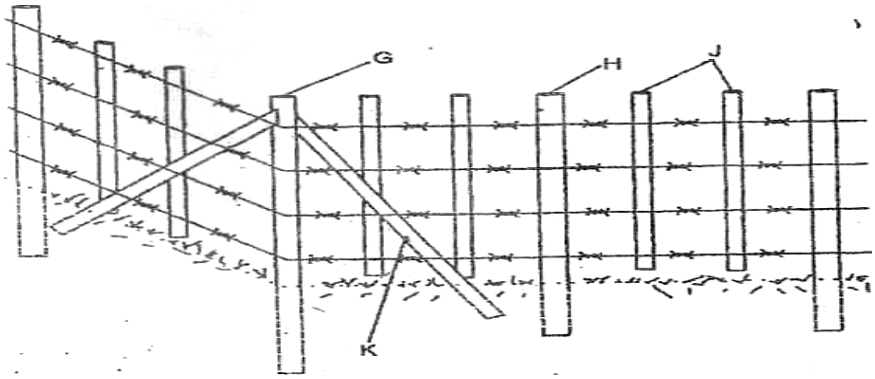
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25. The diagram below shows a type of a fence found in a farm. Use it to answer the questions that follow;



a) Identify the above type offence. **(1mk)**

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b) Name the parts labeled **G, H, J** and **K**. **(2mks)**

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c) State **one** use part labeled **K** in a fence. **(1mk)**

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d) State the appropriate hole depth for posts labeled G and H. **(1mk)**

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SECTION C

Answer only two questions in this section in the spaces provided after question 28

26.

(a) Describe the rearing of a piglet to a mature pig. **(10mks)**

(b) Explain the life cycle of liver fluke. **(10mks)**

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27.(a) Explain 10 signs of good health in livestock. **(10mks)**

(b) State advantages of the top bar hive. **(5mks)**

(c) Describe the procedure of harvesting fish from a pond. **(5mks)**

28 (a) Describe 5 parts of a spray race **(10mks)**

(b) State the structural requirements of a deep litter house in which birds are totally confined. **(5mks)**

(c) Describe the procedure of wax processing. **(5mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……

ADM NO: …….…… SIGN: ……..… DATE: ……..……..

BIOLOGY (QUESTION PAPER)
FORM 3
2 HOURS

INSTRUCTIONS TO CANDIDATES

Write your name and index in the spaces provided.

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

FOR OFFICIAL USE ONLY

QUESTION	MAXIMUM SCORE	CANDINDATES SCORE
1 - 34	80	

1. The equation below shows a reaction that occurs in plants.

$$6CO_2 + 12\,H^+ \longrightarrow C_6H_{12}O_6 + 3O_2$$

(a) Identify the process. **(1mk)**

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(b) In which part of the chloroplast does the process represented by the above reaction occur? **(1mk)**

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2. Write down the part of microscope that plays the following role**.** **(2mks)**

Role played	**Part of microscope**
Movement of stage through large distance	
Attachment of objective lenses	

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3.(a) Blood group AB is a universal recipient. Explain. **(1mk)**

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(b) Describe the characteristics of blood group AB^{+ve}. **(2mks)**

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4. A certain organ **K** was surgically removed from a rat, later drastic increase in glucose level in the blood was reported but when substance **Q** was injected into the animal the whole process was reversed.

Identify:

(i) Organ **K** …… **(1mk)**

(ii) Substance **Q**…… **(1mk)**

5. The following reaction may occur in a forward and backward direction.

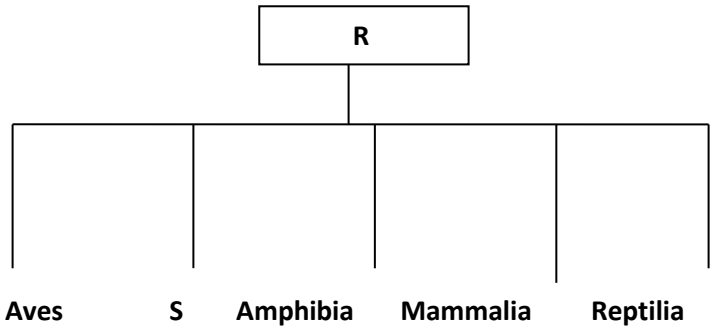
Water + Carbon (IV) Oxide $\rightleftharpoons$ Glucose + Oxygen + Energy

Name the organelle where the reaction occurs in:

(i) Forward direction…… **(1mk)**

(ii) Backward direction…… **(1mk)**

6. Study the classification scheme shown below and answer the questions that follow.



(a) Identify the main characteristics of the taxonomic group ***R*** **(2mks)**

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(b) Name the taxonomic group ***S***. **(1mk)**

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7. State the causative agents of the following diseases: **(2mks)**

(i) Amoebic dysentery

……

(ii) Bilharzia

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8. Briefly describe the leaf phyllotaxy for each of the following plant**.** **(2mks)**



A **B**

A: ……

B: ……

9. Identify the structures of the cell that perform the following functions:- **(2mks)**

(a) Synthesize ribosomes ……

(b) Transport of packaged glycoproteins ……

10. Outline ***two*** physiological changes that occur in the body to lower the level of Carbon (IV) Oxide after vigorous physical exercise **(2mks)**

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11. What are the ***two*** functions of bile salts during the process of digestion? **(2mks)**

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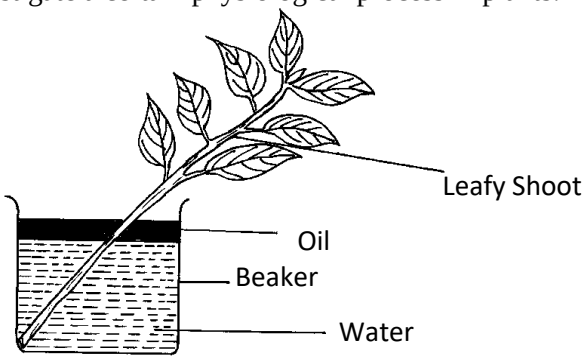
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12. An experiment shown below was set-up to investigate a certain physiological process in plants:-



(a) What process was being investigated? **(1mk)**

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(b) Give the role of the oil layer in this experiment **(1mk)**

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(c) Suggest a suitable control for this experiment **(1mk)**

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13. Explain why respiratory surfaces should be:

(i) Moist **(1mk)**

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(ii) Thin **(1mk)**

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14. State one use for each of the following apparatus in the study of living organisms.

a) Pooter **(1mk)**

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b) Pitfall trap. **(1mk)**

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15. Below is the dental formula of a mammal.

$$\text{i}\ \frac{0}{4}\quad \text{c}\ \frac{0}{0}\quad \text{pm}\ \frac{3}{3}\quad \text{m}\ \frac{2}{3}$$

a) What is the total number of teeth? **(1mk)**

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b) i) What is the mode of feeding in the mammal? **(1mk)**

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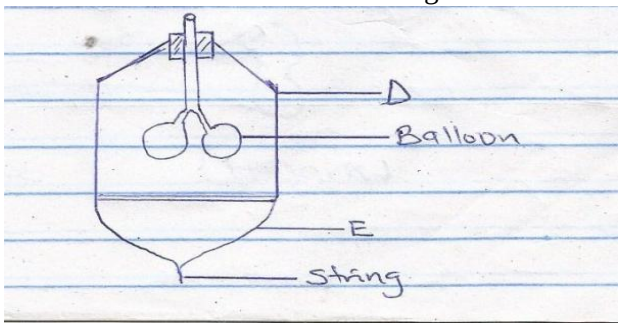
ii) Give one reason for your answer above. **(1mk)**

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16. The diagram below represents a model used to demonstrate breathing in mammals.



a) Name the mammalian structure represented by the parts labeled D and E.

D: ……. **(1mk)**

E: …… **(1mk)**

b) i) State the observation made when the string is pulled downwards. **(1mk)**

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ii) Explain the observation in (b)i) above. **(1mk)**

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17. $5C_{51}H_{98}O_6 + 145CO_2 \rightarrow 102CO_2 + 98H_20 + ENEGY$

The above equation shows an oxidation reaction of food substances.

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a) Determine respiration quotient of the oxidation of food substances. **(2mks)**

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b) Identify the food substances . **(1mk)**

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18. When are two organisms considered to belong to the same species? **(2mks)**

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19. Suggest two reasons why green plants are included in a fish aquarium. **(2mks)**

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20.a) Explain the absence of the following components in urine of a healthy person.

i) Glucose **(1mk)**

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ii) Plasma protein **(1mk)**

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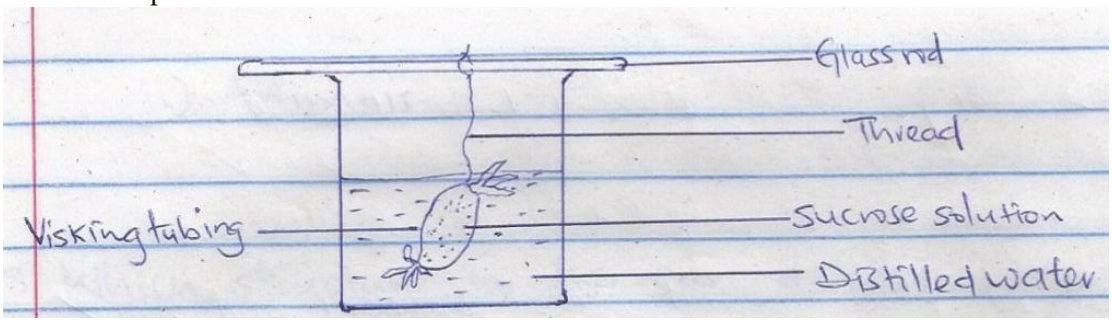
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b) What is the name of the hormone responsible for regulating the level of sodium ions in blood of a mammal**.** **(1mk)**

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21. An experiment was set up as shown below.



The set up was left for 30minutes.

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a) State the expected results **.** **(1mk)**

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

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22. To estimate the population size of mosquitoes in a certain village, visiting researchers caught 400 mosquitoes which they marked and released. After 24 hours 200 mosquitoes were caught out which 80 had the marks.

a) What is the name given to this method of estimating the population size**.** **(1mk)**

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b) Estimate the population size of the mosquitoes in the village. **(2mks)**

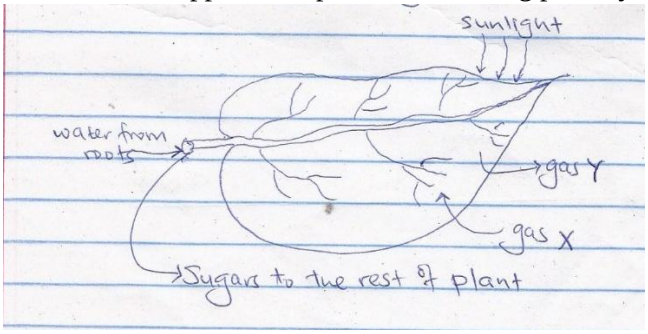
c) State one assumptions that was made during the investigations. **(1mk)**

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23. The following diagram of a leaf shows what happens in a plant leaf during photosynthesis.



a) State one way in which leaves are adapted to absorbs light. **(1mk)**

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b) Name the gases labeled **X** and **Y** . **(2mks)**

X: ……

Y: ……

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24. Explain why it is an advantage for plant to store carbohydrates in form starch rather that as glucose. **(2mks)**

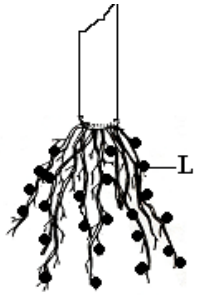
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25. The diagram below shows a part of a leguminous plant .Study it and answer the questions that follow.



i). Name the structure labelled L. **(1mk)**

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ii). Name the micro-organism contained in structure L. **(1mk)**

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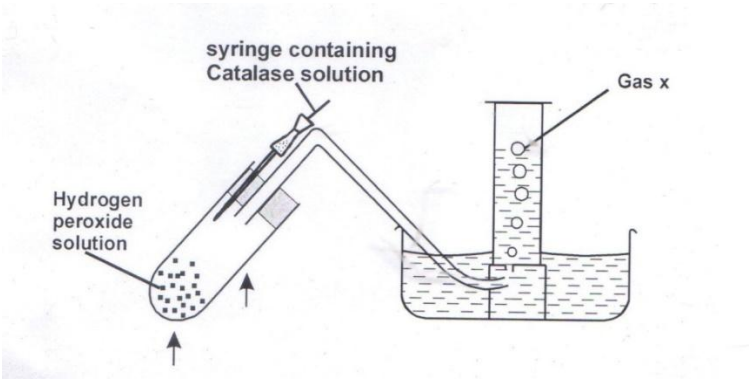
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iii) What is the significance of the micro- organism named in (ii) above. **(1mk)**

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26. The apparatus shown below was set up by form two students in a certain school



(a) Name the gas X **…..** **(1mk)**

(b) Write down a word equation for the reaction which produces the gas **(1mk)**

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(c) Where in human body does this type of reaction occur **(1mk)**

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27. How is it possible that organism in kingdom Monera and Protoctista survive without a circulating system? **(2mks)**

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State two ways in which guard cells adapted to their function. **(2mks)**

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





a) Name the phylum in which the organisms belong. **(1mk)**

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b) Name the part labeled K. **(1mk)**

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c) State one observable difference between the organisms P and N. **(1mk)**

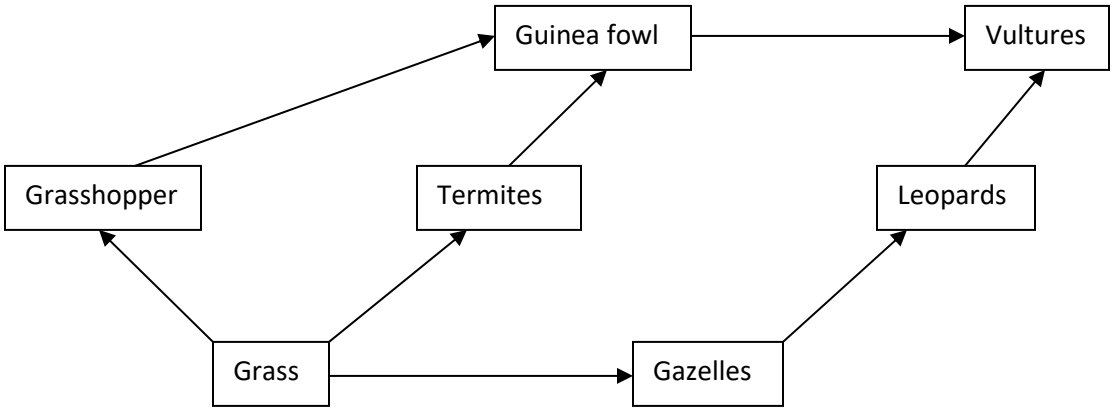
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30. The diagram below shows the feeding relationship in an ecosystem. Study it and answer the questions that follow.



(a.)i) Name the organisms through which natural energy enters the ecosystem. **(1mk)**

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ii) In what trophic level are leopards? **(1mk)**

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(b.) What would be the effect if caterpillars and locusts were introduced in the ecosystem? **(1mk)**

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31. Why is it not possible to breathe while swallowing**.** **(2mks)**

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32. Explain why athletes practicing at high attitude zones have a higher number of red blood cells than those at sea level. **(2mks)**

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33. a) Name causative agent of each of the following diseases. **(2mks)**

i. Pneumonia

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ii. Tuberculosis.

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b.) Name the vector that transmit disease causing microorganism for malaria. **(1mk)**

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34. a) Why are the fish gills highly vascularized **(1mk)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……..

SHOOOL: ……..

ADM NO: …… SIGN: ……..… DATE: ……

BUSINESS STUDIES
565
FORM THREE (3)
Time: 2½ Hours

ANSWER ALL QUESTIONS

1. Identify any four characteristics of human wants **(4mks)**

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2. List four special delivery mail services offered by Post Office **(4mks)**

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3. Give three reasons why transporting oil by pipeline has become popular than roads **(3mks)**

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4. Compute the missing figures in the table below **(3mks)**

	Capital	Assets	Liabilities	
a)		50,630	90,450	_____
b)		_____	30,420	11,110
c)		20,560	_____	30,480

5. State four functions of an entrepreneur **(4mks)**

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6. State three circumstances under which a manufacturer would not require a lot of warehousing facilities **(3mks)**

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7. For each of the following types of accounts, Indicate by writing DR or CR, the side of record for increase and decrease **(4mks)**

Type of account	Increase	Decrease
Assets		
Capital		
Revenue		
Expense		

8. Give four features of parastatals **(4mks)**

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9. Identify four ways in which commercial banks facilitates payment on behalf of their customers. **(4mks)**

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10. State four disadvantages of concentrating industries in one area within a country. **(4mks)**

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11. State four factors that may cause an increase in the supply of a product **(4mks)**

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12. The following details were available in the books of Sambu Traders as at 30/12/2001**.** **(4mks)**

	Kshs
Premises	28,000
Fixtures and fittings	14,000
Creditors	6,000
Bank overdraft	4,000
Cash in hand	2,300
Debtors	4,600
5 year loan	8,000
Stock	4,000
Capital	34,900

Prepare a balance sheet as at 31st December 2001 **(5mks)**

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13. Give four demerits of using television in advertising **(4mks)**

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14. Munda insured his shop against the risk of fire for Kshs 80,000 to cover the goods valued at Kshs 240,000. Fire destroyed his property valued at Kshs 90,000.

i) Compute how much he would be paid by the insurer **(3mks)**

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15. Mention four circumstances in which oral communication may be used **(4mks)**

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16. Give five reasons why filing is important in an office. **(5mks)**

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17. State any four services of retailers to consumers **(4mks)**

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18. In the spaces provided below state the business document to which each of the following statements relate. **(4mks)**

	Statement	**Document**
a)	Informs the buyer when goods were dispatched and by what means	
b)	Request by seller for payment in advance	
c)	Used to correct an undercharge in an invoice	
d)	Shows details of the transactions between a seller and a buyer during a given period	

19. Explain five benefits a trader would enjoy by operating a business alone**.** **(10mks)**

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20. Explain five business malpractices that consumers used to be protected against by the government. **(10mks)**

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21. Discuss the factors to consider when choosing a channel of distribution **(10mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……..……. SIGN: ……..……..… DATE: …….……..

CHEMISTRY (QUESTION PAPER)

FORM 3

2 HOURS

Instructions to Candidate

- *This paper consists of **11** printed pages. Ensure all pages are there before doing the paper*
- *Answer **all** questions in this paper*
- *Answer all questions in the spaces provided*

For Examiners' Use Only

Questions	Maximum Score	Candidate's Score
1 – 21	80	

1. Give a reason why the neck of a volumetric flask is narrow **(1Mk)**

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2. Define the following terms as used in Chemistry: **(2Mks)**

a) Saturated solution

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b) Solvent front

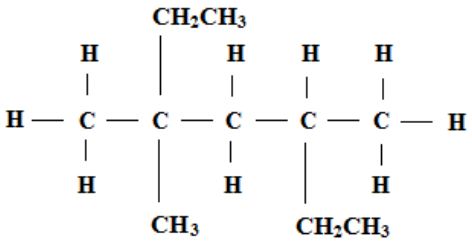
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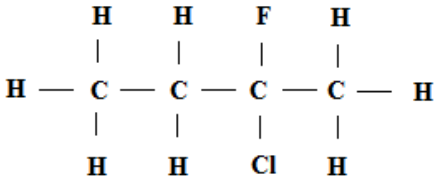
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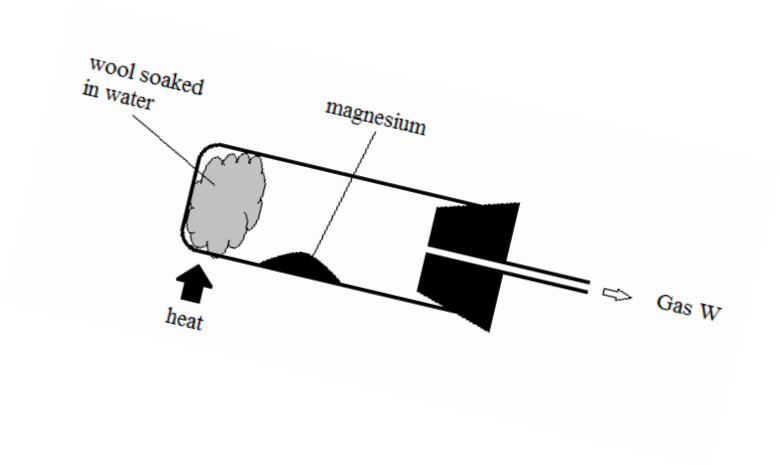
3. Give the systematic names of the following compounds: **(2Mks)**





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4. Study the diagram below and answer the questions that follow:



a) Write an equation for the reaction that forms **gas W** **(1Mk)**

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b) State a **chemical test** for **gas W** **(1Mk)**

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c) What is the effect of replacing magnesium with potassium metal? **(1Mk)**

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d) What is the observation made when pure **gas W** is ignited? **(1Mk)**

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5. The grid below represents part of the periodic table. Study it and use it to answer the questions that follow:

A							**T**
Q	**W**				**X**	**Z**	
		V					
R	**M**						

a) Write the formula of the compounds formed when the following elements combine: **(2Mks)**

Z and **V** ……

W and **X** ……

b) What is the most likely effect of the compounds formed between the following elements on red and blue litmus paper when dissolved in water? **(3Mks)**

Q and **Z**

……...

X and **W**

……

Z and **X**

……

6. Draw a setup to show how a mixture of ammonium chloride and magnesium chloride can be separated **(2Mks)**

7. Cracking of petroleum is a major source of hydrogen for industrial use.

a) What is cracking? **(1Mk)**

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b) Which are the two main methods of cracking? **(1Mk)**

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c) Which are the three possible products of cracking? **(3Mks)**

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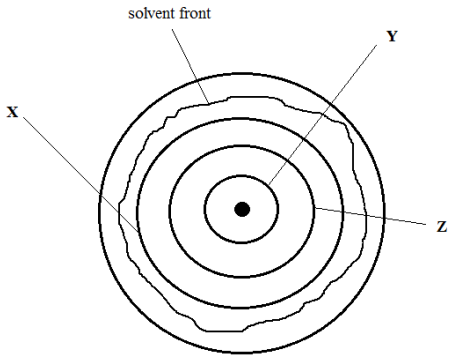
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8. Study the chromatogram of dyes **X**, **Y** and **Z** then answer the questions that follow:



a) State the properties that make it possible for the dyes to be separated by chromatography **(1Mk)**

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b) Which dye is **least** adsorbed? **(1Mk)**

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9. A solution was prepared by adding 10.6g of sodium carbonate to 100ml distilled water in a volumetric flask and topping the solution with more distilled water to make 250ml of solution.

(Na = 23, C = 12, O = 16)

a) Determine the concentration of this solution in moles per litre **(3Mks)**

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b) Determine the volume of 1.5M sulphuric (VI) acid that would completely react with 25ml of the sodium carbonate solution **(3Mks)**

c) How many hydrogen ions were present in this volume of sulphuric (VI) acid solution? **(3Mks)**

(Na=23, C=12, O=16, S=32, H=1, L = 6.023×10^{23})

10. Explain the following observations:

a) Hydrogen sulphide (**H_2S**) exists as a gas at room temperature while hydrogen oxide (**H_2O**) exists as a liquid at room temperature. **(2Mks)**

(H = 1, S = 32, O = 16)

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b) Magnesium chloride conducts electricity in the molten state while aluminium chloride does not conduct electricity in any state **(2Mks)**

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11. Write ionic equations for the following reactions: **(3Mks)**

a) Sodium sulphate solution and lead (II) nitrate solution

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b) Sodium hydroxide solution and hydrochloric acid solution

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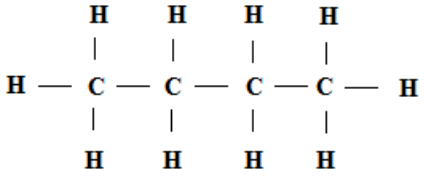
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c) Magnesium ribbon and iron (II) sulphate solution

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12. A mole of the following compound was mixed with 2 moles of chlorine gas.



When the mixture was exposed to sunlight, the colour of chlorine disappeared

a) Name the type of reaction that took place **(1Mk)**

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b) Write a balanced equation for the overall reaction that took place **(1Mk)**

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c) Draw and name **one** possible structure of the resultant organic compound: **(2Mks)**

d) What is the role of sunlight in the reaction? **(1Mk)**

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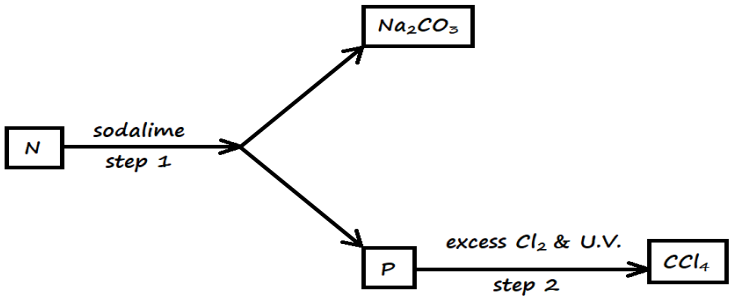
e) Write an equation for the complete combustion of the initial hydrocarbon **(1Mk)**

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13. Study the flow chart below and answer the questions that follow **(2Mks)**



Identify **N** and **P**

N: ……

P: ……

14. Comment on the following pairs of properties and explain your answer in each case:

a) Atomic radii of sodium and argon **(2Mks)**

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b) 1st ionization energies of lithium and potassium **(2Mks)**

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c) Reactivity of sodium and aluminium **(2Mks)**

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15. Equal volumes of carbon (IV) oxide and carbon (II) oxide can diffuse through the same medium. Calculate the relative rate of diffusion of carbon (II) oxide (C = 12, O = 16) **(2Mks)**

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16) The table below gives some information on some hydrocarbons. Study it and answer the questions that follow:

Hydrocarbon	Number of carbon atoms	Relative molecular mass
A	1	16
B	2	30
C	3	44
D	4	58
E	5	72
F	6	86

a) Name the homologous series to which the compounds belong **(1Mk)**

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b) Write the condensed structural formula of the compound represented by **E** **(1Mk)**

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c) The compound represented by **F** is a liquid at room temperature while **B** is a gas at room temperature. Explain **(2Mks)**

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d) Name the third member of this homologous series **(1Mk)**

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16. A bottle containing nitric (V) acid (**HNO_3**) has a label with the following information:

- Density = $1.44gcm^{-3}$
- Relative formula mass = 63
- Percentage purity = 65%

a) Calculate the concentration of the nitric (V) acid solution in moles per litre **(3Mks)**

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b) What will be the concentration of a solution prepared by diluting $20cm^3$ of the concentrated acid to make $250cm^3$ of the acid solution? **(3Mks)**

17.

a) What is isomerism? **(1Mk)**

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b) Draw any three isomers of C_7H_{16} **(3Mks)**

18. Molten lead is a conductor of electricity but not an electrolyte whereas molten lead (II) iodide is a conductor of electricity and an electrolyte. Explain **(2Mks)**

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19. Study the information in the table below and use it to answer the questions that follow.

Substance	Solid state	Molten state	Mixed with water
X	Conducts electricity	Conducts electricity	Not soluble
Y	Does not conduct electricity	Conducts electricity	soluble
Z	Does not conduct electricity	Does not conduct electricity	Not soluble

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a) Give the type of structure and bond of substance **X** **(1Mk)**

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b) Explain your answer in **a)** above **(1Mk)**

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c) Which of the substances is likely to be plastic? **(1Mk)**

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d) Which particles are responsible for electrical conductivity in **substance Y**? **(1Mk)**

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20. When $100cm^3$ of a gaseous hydrocarbon ($\mathbf{C_xH_y}$) burns in $400cm^3$ of oxygen, $100cm^3$ of oxygen is unused, $200cm^3$ of carbon (IV) oxide, and $200cm^3$ of steam are formed.

a) Determine the equation for the reaction **(2Mks)**

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……

b) Determine the values of **x** and **y** **(2Mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……..

ADM NO: ……..…… SIGN: ……..… DATE: ……..

COMPUTER STUDIES

(THEORY)

451/1

FORM THREE

Time: 2½ Hours

INSTRUCTIONS TO CANDIDATES

1. **Write your name and class in the space provided above.**
2. **This paper consists of TWO sections: A and B.**
3. Answer all the questions in section **A.**
4. **Answer question 16 and any other 3 questions from section B.**
5. **All answers should be written in the spaces provided on the question paper.**

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SECTION	QUESTIONS	
A	1-15	
B	16	
	17	
	18	
	19	
	20	
TOTAL MARKS		

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SECTION A (40 MARKS)

1. Define the following terms as used in Computer studies:

(i) Nibble **(1mk)**

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(ii) Word **(1mk)**

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2. State the difference between Batch and real time processing then give an example in each case **(3mks)**

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3. Mr. Baraka games teacher at Chianda High School wants to invite several schools for the hockey tournament. He was advised to use mail merging technique to create invitation letters for the respective schools identified. State three benefits of this technique **(3mks)**

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4. The final activity in data processing cycle is producing the desired output. Mention three ways of disseminating the desired output (**3mks)**

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5. Convert AAFH to Octal number system **(2mks)**

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6. A company has decided to computerize their operations. They have decided to purchase packages standard software instead of developing their own programs. Give three advantages of standard software. **(3mks)**

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7. A computer student from Bondo Technical defined multitasking as a concept where computer process more than one tasks at the same time. Agree or disagree with this student and support your answer (**2mks)**

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8. $0110_2+x_2=1010_2$ Find the value of x in base 10 and 16 **(4mks)**

9. State the functions of the following disk management operation.

(i) Partitioning **(1mk)**

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(ii) Disk defragmentation **(1mk)**

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10. List two limitation of low-level programming languages **(3mks)**

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11. Demonstrate three ways in which -21_{10} can be represented in a binary form **(3mks)**

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12. Describe the concept of binary search method as used in sequential file organization **(2mks)**

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13. Mention three advantages of electronic data processing **(3mks)**

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14. Bena has a new laser printer to print letters for his business. Bena connects his printer to his computer using the USB port. Give three benefits of using the USB port to connect the printer to the computer **(3mks)**

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15. State two ways of resolving windows related problem like missing operating system **(2mks)**

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SECTION B: (60 MARKS)

(ANSWER QUESTION 16 AND ANY OTHER THREE QUESTIONS FROM THIS SECTION)

16.

(a) Define the following terms as used in programming:

(i) Programming **(1mk)**

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……

(ii) Syntax **(1mk)**

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(iii) Bug **(1mk)**

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(b) Mention three items available in a fourth-generation programming language environment which make programming an easier task than the Third-generation languages **(3mks)**

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(c) Describe three methods of testing a program for errors **(3mks)**

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(d) Describe three language processors used by computer programmers when developing a new program (**3mks)**

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(e) Describe three main features of a good algorithm **(3mks)**

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17.

(a) The binary pattern 110100010101 can be interpreted in more than one way.

(i) State the hexadecimal equivalent **(2mks)**

(ii) State the denary equivalent if it represents two complement of a binary number **(2mks)**

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(b) Convert 214.625_{10} to binary **(3mks)**

(c) Use twos compliment to subtract 20_{10} from 10_{10} and write your answer in decimal notation **(4mks)**

(d) Evaluate $1010011_2 + 10010_2 - 01010_2$ **(2mks)**

(e) State two difference between Ones and Twos complements **(2mks)**

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18. A database was used to keep results for a class of students. Part of the database is shown below in Table called MARKS.

Name	School Number	Math	English	Science	History	Geography
Paul	017	70	55	65	62	59
Ravi	0009	29	34	38	41	44
Chin	0010	43	47	50	45	52
John	0013	37	67	21	28	35
Diana	001	92	88	95	89	78
Rosanna	0016	21	13	11	27	15

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(a) Mention the most appropriate data type for field Class ID **(2mks)**

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(b) State the number of records in the table above **(2mks)**

(c) Identify the key field to be used in the table **(2mks)**

(i) Give a reason for choosing the field in c above **(2mks)**

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(ii) Suggest how you can set an input mask for the name field such that data entered in the field is automatically change to title case **(2mks)**

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(iii) Show how the dynaset will appear if the following parameters are set as shown in the query extract below **(3mks)**

Field Name	Name	History	Geography	Science	Math
Table	MARKS	MARKS	MARKS	MARKS	MARKS
Sort					
Show	√	√	√		
Criteria		>60			
Or			>60		

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(iv) Write an expression that when typed at the builder will compute total marks per subject for the students **(2mks)**

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19.

(a) Study the worksheet below then answer the questions that follows:

	A	B	C	D	E	F	G
1	Item code	Type	Qnty	Price	Total		
2	001	Sugar	3	100	300		
3	002	Tea Leaves	5	50	250		
4	003	Salt	4	20	80		
5	004	Rice	2	80	160		
6	005	Book	10	20	200		
7							
8							
9							
10				10%			
11							

(i) Write a formula at cell E2 to calculate Total amount for sugar **(1mk)**

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(ii) The formula =Countif (c2:c6 >=5) was placed at cell C7, what will be the result **(1mk)**

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(iii) Prices for all items are to be increased by 10%, write a function at cell F2 to show the new price increase per item to be copied to F3, F4, F5 and F6 **(2mks)**

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(iv) Identify the data types in cell E3, C6 and A1 **(3mks)**

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(b) List four hardware or software requirement that enable a computer to have multimedia capability **(2mks)**

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(c) Mentioned two methods of checking genuineness, validity and legitimacy of a computer software **(2mks)**

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(d) State four factors to consider when upgrading the computer memory modules **(4mks)**

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20.

(a) Describe how the operating system handle the following in a computer system:

(i) Data and program protection **(1mk)**

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(ii) Interrupt **(1mk)**

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(iii) Deadlock **(1mk)**

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(b) Kingjames saved a document in his computer during the lesson. At the end of the lesson the teacher instructed him to delete the document, Kingjames looked for the document and was not able to locate the document. Describe three parameters that would help him located the document (**3mks)**

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(c) Give a reason to justify why operating systems are the first software to be installed in a computer **(2mks)**

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(d) Describe three parameters used to measure data integrity **(3mks)**

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(e) Masala Complex is a small financial institution based in a rural in Kisumu County. The institution carries out transactions with both international and local financial organization. State four measures that the institution need to adopt to minimize threats to its data integrity **(4mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……..……. SIGN: ……...… DATE: ……..

FORM THREE CHRISTIAN RELIGIOUS EDUCATION
TIME: $2^{1/2}$ Hours

INSTRUCTIONS TO CANDIDATES:

1) Write your name and index number in the spaces provided above.
2) This paper consists of **SIX** questions.
3) Answer any five questions on the foolscaps provided.
4) Each question carries 20 marks.

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Questions	1	2	3	4	5	6	TOTAL
Score							

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FORM THREE CHRISTIAN RELIGIOUS EDUCATION

1a) State four reasons why the Bible had to be compiled into its present for by the early Christian **(8Mks)**

b) State six challenges that Prophet Elijah faced in Israel **(6mks).**

c) What lessons can Christians learn about social justice from the story of Naboth's vineyard? **(6mks)**

2a) Outline the activities carried out by the Israelites on the night of the Passover. **(7Mks)**

b) Explain the conditions given to the Israelites during the renewal of the Sinai covenant. **(7Mks)**

c) How do Christians show their respect for God? **(6Mks)**

3a) Outline what Angel Gabriel revealed about John Baptist when he announced his birth to Zechariah.

(6Mks)

b) Describe the incident in which Jesus forgave the sinful woman in Luke 7:36-50

(8Mks)

c) Outline the lessons that Christians learn from the incident when Jesus went to pray with his disciples on the Mount of Olives **(6Mks)**

4 a) Explain what the teaching of Jesus about the vine and the branches in John 15:1-10 reveal about the unity of believers. **(8Mks)**

b) Give reasons why prophet Amos was against the way the Israelites worshipped God **(7Mks)**

c) State five ways in which Christians are able to identify those who possess the gift of the Holy Spirit **(5Mks)**

5 a) Explain the significance of the symbolic act of buying of land by prophet Jeremiah. **(8Mks)**

b) In what ways did Prophet Jeremiah suffer while carrying out his work in Judah? **(6Mks)**

c) List six moral values that a Christian can acquire from the life of Prophet Jeremiah. **(6Mks)**

6 a) What was the role of rainmakers in the African community? **(7Mks)**

b) Explain how wealth was acquired in African Traditional Society. **(7Mks)**

c) Identify moral values taught to the youths during initiation to adulthood in traditional African communities. **(6Mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……..

SHOOOL: ……..……

ADM NO: ……..……. SIGN: ……..…..… DATE: …….…….……..

TERM 2

English (Hybrid test)

Form Three

Time: 2 ½ hours

INSTRUCTIONS TO CANDIDATES

- The exam has ***FIVE*** sections.
- All the sections are ***compulsory.***
- Write your answers in space provided.
- The exam carries ***100 marks.***

FOR EXAMINER'S USE ONLY

S/NO	SECTION	MAXIMUM MARKS	STUDENTS SCORE
1	Functional Writing	20	
2	Excerpt	25	
3	Cloze test	10	
4	Oral Skills	30	
5	Poetry	15	
Grand Total		100 marks	

QUESTION 1: FUNCTIONAL SKILLS (20MKS)

Imagine you are the secretary of your school's health club. Your club recently attended a COVID-19 sensitization workshop at Kisumu Hotel in Kisumu. During the workshop, the following presentations were made: COVID-19 prevention measures in school, handling COVID-19 cases in schools and mental health care. Write a report on the COVID-19 sensitization workshop. In your report, also include the problems the club experienced while attending the workshop and recommendations for future workshops.

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QUESTION 2: <u>FATHERS OF NATIONS</u> (25 MARKS)

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

"Then, answer my question."

"l see I had totally misjudged you, Ms. McKenzie." He had seen a Iamb: vulnerable. Now hesaw a lioness: dangerous. "l thought you were a proper good-mannered journalist. Instead, I just see one of those fire eaters who confuse journalism with bad manners."

"Dr. Afolabi, you haven't answered my..."

"What joy do you get out of being rude to those you interview? You like watching them explode from anger and then bleed, is that it? Fine, but we have just met? What did I do thatoffended you?"

"Let me put my question another way, Dr. Afolabi; Why did you come to this summit? "Correction: I didn't come; I was invited. That means presidents wanted me here, Repeat: presidents. They saw merit in the book you dismiss as pessimistic and wanted me to assure them that Way Omega agrees with it. So who cares what you think? What do you know aboutbooks, anyway? Let me tell you something else, Ms.

McKenzie..." He changed his mind-a voice inside him was saying he had become too defensive. "On further thought, let me not. I don't think I have to defend my book beforeanyone, least of all before a third-rate reporter for the Zambian News:

"Gambian, she said.'Whatever!"

"All right, Dr. Afolabi. Now can you think through your book and give me an example, aspecific example, on which Way Omega agrees with your book?"

'Yes, I can."

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<u>EXCERPT QUESTIONS</u>

a) 'Then answer my question.' Which question has Ms. McKenzie asked Dr. Afolabi? **(2mks)**

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b) Dr. Afolabi says that he does not think he has to defend his book before anyone. What isthe title of his book? **(1mk)**

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c) From the information in this excerpt, describe the character of Dr. Afolabi. **(6mks)**

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d) Using clear illustrations, identify two styles used in the excerpt. **(4mks)**

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e) What is Dr. Afolabi's role during the heads of state summit? **(2mks)**

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f) From what Dr. Afolabi explains to Ms. McKenzie, describe what Way Omega entails. **(3mks)**

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g) What happens immediately after this excerpt? **(3mks)**

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h) Give the meaning of the following words as used in the excerpt. **(4mks)**

(i) Vulnerable

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(ii) Pessimistic

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(iii) Defensive

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(iv) Third-rate

……

……

QUESTION 3: <u>CLOZE TEST</u> 10 MARKS

<u>Fill in each of the blank spaces in the passage below with the most appropriate word.</u>

We all have certain goals in life. Goals vary among people. For one person a goal would be to get (1)_____ of debt, while for another person it would be to (2)_____a house, while for someone else; it could be a (3)_____ in an exotic location. (4)_____**,** a bad goal can sap your energy and distract you (5**)**_____making progress. A good goal, on the other hand, can provide the clarity and motivation you need to (6)_____ your dreams. (7)_____**,** people confuse a goal (8)_____ a wish. A goal is (9)_____ from a wish. For example, you may want to be a rich person; this is a wish and not a goal. A goal has to be realistic, measurable and has to be (10)_____within a specific time frame.

QUESTION 4: <u>ORAL SKILLS</u> (30 MARKS)

Read the poem below and answer the questions that follow

(a) She dwelt among untrodden ways
Besides the springs of dove;
A maid whom there was none to praise
And very few to love

A violet by mossy stone

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Half-hidden from the eye!
Fair as a star, when only one
Is shining in the sky

She lived unknown, and few could know
When Lucy ceased to be:
But she in her grave, and oh,
The difference to me!

Questions

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

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2. Apart from rhyme how else has the poem achieved rhythm? **(4mks)**

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3. Which words would you stress in stanza 1 line 4, and why? **(2mks)**

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4. If you were to recite the poem in a drama festival, what two performance features would you employ in the last stanza? Give reasons. **(2mks)**

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(b) Provide homophones for the following words. **(3mks)**

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Miner ……..

Berry ……..

Clime ……..

(c) Underline silent letters in the words below. **(4mks)**

Gnu

Debris

Heir

Fracas

(d) Choose the odd one out in each set considering the underline consonant. **(3mks)**

ginger gin jam giggle

chief child chef cheap

(e) Outline the riddling session. **(6mks)**

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(f) What should one do during a debate to make his/her presentation effective? **(4mks)**

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QUESTION 5: GRAMMAR 15 MARKS

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(a) The sentences below are erroneous. Rewrite by correcting the errors. **(4mks)**

(i) The playfull puppy ran besides me.

……

……

(ii) The boy ran passed me.

……

……

(iii) I will not come late until late in the knight.

……

……

(iv) The two restlers are argueing again in the ring.

……

……

(b) Choose the more suitable option from the bracket to fill in the blank space. **(5mks)**

i) …….stars are there in the sky? (how many, how much)

ii) …….water is in the lake? (how many, how much)

iii) There is ……at the gate. (anything, something)

iv) She met a…….of tourist on her way to school. (flock, tribe)

v) There was a …….of cats at the beach. (army, nuisance)

(c) Fill in the most suitable preposition. **(3mks)**

i) I feel really sorry …….his daughter.

ii) I have to be polite …… everyone.

iii) You shouldn't be angry …….her for revealing your secret.

(d) Put the most suitable form of the word in brackets. **(3mks)**

(i) The cat chased its tail ……. (frantic)

(ii) Today another probe was …….launched. (success)

(iii) In their eyes shone …… (happy)

****** E N D ******

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EXCELLING STUDENTS FORM THREE END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..… DATE: ……..

FORM THREE GEOGRAPHY
TIME: 2¾ Hours

Instructions to candidates

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

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

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

(d) *Answer **question 6** and any other **two** questions from section **B***

(e) *All answers for questions 7 to 10 must be written in the spaces provided after Question 10.*

(f) ***This paper consists of 11 printed pages.***

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

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Section	Questions	Candidate's Score	Maximum Score
A	1 – 5		25
B	6		25
			25
			25
	Total Score		100

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SECTION A

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

1. **(a)** Differentiate between afforestation and agro-forestry. **(2mks)**

(b) Give **three** reasons why afforestation is being undertaken in Kenya. **(3mks)**

2. **(a)** Identify **two** forces responsible for the spherical shape of the earth. **(2mks)**

(b) Give **three** reasons why the interior of the earth is still hot. **(3mks)**

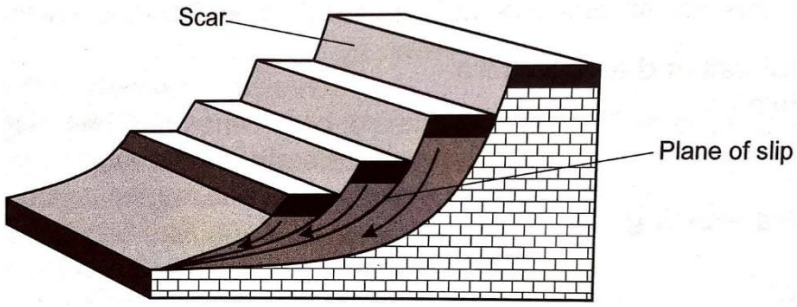
3. The diagram below shows a weather station measuring instrument. Use it to answer the following questions.



(a) Identify the instrument. **(1mk)**

(b) Briefly describe how the instrument functions. **(4mks)**

4. The diagram below shows a type of mass wasting.



(a) What is mass wasting? **(2mks)**

(b) Name the mass wasting process shown above. **(1mk)**

(c) State two conditions necessary for the process mentioned in (a) above. **(2mks)**

5. Describe how the present-day continents were formed. **(5mks)**

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SECTION B.

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

6. Study the map of Yimbo 1:50,000 (sheet 115/1) provided and answer the following questions.

(a)(i) State **two** methods used to show relief in the extract map of Yimbo. **(2mks)**

(ii) Identify **two** man made features found in the grid square 2193. **(2mks)**

(b) (i) What is the highest point of the area covered by the map. **(2mks)**

(ii) Find the bearing of the air photo principal point north of Majengo (grid reference 2494) from Pala school (grid reference 2793) **(2mks)**

(iii) Give the sheet index to the map adjoining Yimbo to the north east. **(1mk)**

(c) Draw a rectangle measuring 16cm by 12 cm to represent the area enclosed by Easting 26 and 30 and Northing 91 and 94. **(2mks)**

On the rectangle mark and name the following features.

- L. Victoria.
- All weather road loose surface.
- Thicket **(3mks)**

d) (i) Describe the drainage of the area covered by the Map. **(5mks)**

(ii) Citing evidence from the map give **three** economic activities carried out in the area covered by the map other than sisal farming. **(6mks)**

7. (a) Name any **three** major minerals mined in Kenya. **(3mks)**

(b) Describe the open cast mining method. **(4mks)**

(c) Explain how the following factors influence mining:

(i) Value of mineral. **(2mks)**

(ii) Mode of occurrence of the mineral. **(2mks)**

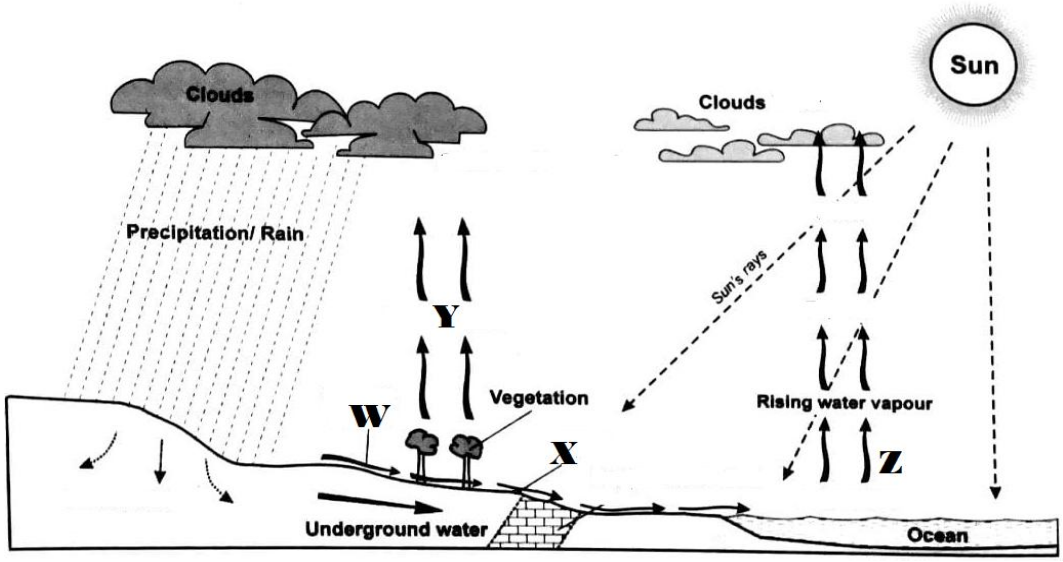
(iii) World market prices. **(2mks)**

(d) Explain any **four** benefits of mining trona to the economy of Kenya. **(8mks)**

(e) Give four by–products of crude oil. **(4mks)**

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8.(a) The diagram below shows the hydrological cycle. Use it to answer the questions that follow.



(i) Name the processes marked **X**, **Y** and **Z**. **(2mks)**

(ii) State four factors that determine the process marked **W**. **(4mks)**

(b) With the aid of well labelled diagrams, explain how ox-bow lakes are formed. **(8mks)**

(c) Explain **three** positive effects of rivers and the resultant features to human activities. **(6mks)**

(d) Your class is required to carry out a field study of a river in its lower stage within the local environment.

(i) What preparations would you make for the study? **(3mks)**

(ii) Give **two** features that you are likely to observe. **(2mks)**

9.(a)(i) Explain **three** factors that influence distribution of vegetation in Kenya. **(6mks)**

(ii) State **three** major vegetation zones in Kenya**.** **(3mks)**

(b)(i) Describe any **four** characteristics of the tropical rainforests. **(4mks)**

(ii) Give **four** factors that limit the exploitation of tropical rainforest in Africa**.** **(4mks)**

(c) What is climax vegetation? **(2mks)**

(d) Explain **three** factors that have led to a decline of natural grassland in Kenya. **(6mks)**

10. (a) (i) What is vulcanicity. **(2mks)**

(ii) With the help of a diagram describe how a lava plateau is formed. **(6mks)**

(iii) Distinguish between a crater and a caldera **(2mks)**

(b) Explain **four** negative influences of vulcanicity and associated features to human activities in Kenya **(8mks)**

(c) Suppose you have been asked by your Geography department to carry out a field study of volcanic activities around your school.

(i) Design a working schedule you would use during the day of the study. **(3mks)**

(ii) State **four** follow-up activities you may have been involved in after the field study. **(4mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……..……

SHOOOL: ……..……

ADM NO: ……..……. SIGN: ……..……..… DATE: ……..

HISTORY AND GOVERNMENT

TIME: 2 ½ HOURS

INSTRUCTIONS TO THE CANDIDATES:

- *This paper consists of **three** sections **A, B** and **C.***
- *Answer **all** questions in section **A, three** questions from section **B** , and **two** questions from section **C***
- *Answers to **all questions** must be written in a separate booklet provided.*

SECTION	QUESTIONS	MARKS
A	**1-17**	
B	**18**	
	19	
	20	
	21	
C	**22**	
	23	
	24	

TOTAL

This paper consists of 2 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A Answer all questions from this section.(25marks)

1. 1Give one archaeological source of information on history and government **(1mk)**

2. Identify two reasons that made the early human beings to live in groups during the Old Stone Age Period **(2mks)**

3. State the main factor that led to the development of early agriculture in Egypt **(1mk)**

4. Name the dispersal area of the Eastern Bantu **(1mk)**

5. State two political roles played by the Orkoiyot among the Nandi **(2mks)**

6. Identify two main items of trade from the interior of Kenya during the long distance trade **(2mks)**

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7. Give two economic factors that promote national unity **(2mks)**
8. State two ways in which Africans participated in the Trans-Atlantic Trade **(2mks)**
9. Identify two negative effects of the development of motor vehicle transport **(2mk)**
10. Give one invention that revolutionized food preservation during the 19th Century **(1mk)**
11. State the main factor that led to the growth of ancient town of Kilwa **(1mk)**
12. Identify one symbol of unity in Shona Kingdom during pre-colonial period **(1mk)**
13. Give one way in which constitution of Kenya guarantees the Rule of Law **(1mk)**
14. Identify two peaceful methods that were used by Europeans to acquire colonies in Africa **(2mk)**
15. State two roles of Emirs in the British colonial administration in Nigeria **(2mks)**
16. Give one way in which the construction Uganda Railway speeded up the colonization of Kenya **(1mk)**
17. State one characteristic of early political association which were formed in Kenya before 1939 **(1mk)**

SECTION B.(45 MARKS):*Answer any three questions from this section.*

18. (a) Identify three inventions that led to Agrarian Revolution in Britain **(3mks)**
(b) Explain six effects of Agrarian Revolution in Britain **(10mks)**

19. (a) Give three disadvantages of coal as a source of industrial energy during the 19th century **(3mks)**
(b) Explain six factors which promoted development of industries in India **(12mks)**

20.(a) Give three factors that enabled European powers to colonize Africa in the late 19th Century **(3mks)**
(b) Explain six reforms that were introduced by the German administration after the Maji Maji uprising **(12mks)**

21(a) State three reasons why the British used direct rule in Zimbabwe **(3mks)**
(b) Explain six reasons why the system of Assimilation failed in areas outside the four communes in Senegal **(12mks)**

SECTION C ;(30 MARKS): *Answer any TWO questions from this section.*

22.(a) State five circumstances that can make a Kenyan citizen to be denied right to life **(5mks)**
(b) Explain five political responsibilities of a Kenyan citizen according to the constitution of Kenya **(10mks)**

23. (a) Identify five sources of the British Constitution **(5mks)**
(b) Describe five features of the independence constitution of Kenya **(10mks)**

24.(a) Name five survival rights of children in Kenya **(5mks)**
(b) Explain five reasons why it is important to respect human rights **(10mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……..

SHOOOL: ……..……

ADM NO: ……..…… SIGN: ……..… DATE: ……..…..

HOME SCIENCE (441|1)
Paper 1
(THEORY)
FORM THREE (3)
Time: 2 Hours

Instructions to candidates

1. This paper consists of three sections. A, B and C

2. Answer all questions in section A. Section B is compulsory. Answer the two questions in section C.

3. Answers to questions must be written in the space provided.

4. All answers must be written in English.

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
A	**1-21**	**40**	
B	**22**	**20**	
C		**20**	
		20	
Total Score		**100**	

SECTION A (40 marks)

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

1. List down two communicable diseases that are passed through water. **(1mk)**

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2. Mention two precautions to observe when buying a house. **(2mks)**

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3. Give four table etiquette rules. **(2mks)**

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4. State two reasons why metal *karais* are not as common as plastic basins. **(1mk)**

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5. List four possible causes of a miscarriage. **(2mks)**

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6. State four repairs a student may carry out on their uniform. **(2mks)**

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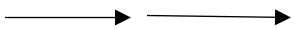
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7. Identify and give the meaning of the following markings on a pattern: **(2mks)**

a) - - - - - - - - - - - - - - - - - - -

b) 

c) 

d) 

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8. Outline two ways of shortening cooking time for dry beans. **(2mks)**

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9. Give two reasons why fruits should be thoroughly cleaned before eating. **(2mks)**

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10. Outline four process that are carried out before putting clothes in water during laundry. **(2mks)**

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11. State three reasons why a kitchen should be well lit. **(3mks)**

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12. Differentiate between persuasive and competitive advertisement. **(2mks)**

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13. Suggest three ways of encouraging a child to play. **(3mks)**

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14. What is the function of each of the following parts of a sewing machine: **(2mks)**

- Feed dog……..
- Take-up lever……..
- Stop motion screw……..
- Tension disc…….

15. Mention four reasons for missed periods other than pregnancy. **(2mks)**

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16. Give two ways of sterilizing hospital bedsheets. **(1mk)**

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17. Suggest two differences in the preparation of drop scones and pancakes. **(2mks)**

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18. State three qualities of a good bathroom floor. **(3mks)**

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19. Mention two areas in a garment where diagonal tacking can be done. **(1mk)**

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20. Suggest two advantages of making clothes for oneself. **(1mk)**

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21. Give the deficiency disease associated with each of the following nutrients: **(2mks)**

- Thiamine **……...** Retinol **……**
- Ascorbic Acid**……** Cyanocobalamin **……..**

SECTION B (20 marks)

*Answer **ALL** the sections of this question in the spaces provided after the questions*

22. You are doing cleaning after a Home Science practical;

a) Outline the procedure to follow in laundering the white cotton apron with a fruit stain you used during the practical.

b) Give the procedure you will follow in cleaning a leather chair in the Home Science room.

c) Describe how you will clean the aluminium sufuria you used in cooking.

SECTION C (40 marks)

*Answer any **two** questions in this section in the spaces provided after the questions*

23.

a) Explain four rules to observe when starting weaning a baby. **(6mks)**

b) Discuss three dangers of having overgrown bushes around the home. **(6mks)**

c) Outline five hygiene rules that should be observed during a Home Science practical. **(5mks)**

d) Give three ways of improving flavour of a stew. **(3mks)**

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24.

a) Explain four ways of increasing efficiency when working in the kitchen. **(6mks)**

b) Discuss four ways of enhancing your health as a student. **(8mks)**

c) Outline six ways a family can cut down on cost of food. **(6mks)**

25.

a) Discuss four dangers of pregnancy in a very young girl. **(8mks)**

b) Outline six reasons why water is important in our diet. **(6mks)**

c) Mention six rules to observe when using a sewing machine. **(6mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..…… DATE: ……..

ISLAMIC RELIGIOUS EDUCATION/314

FORM THREE (3)

Time: $2^1/_2$ Hours

INSTRUCTIONS:

1. This paper contains five (5) questions.
2. Answer all questions.
3. Write your answers in the answer sheet provided.
4. All answers must be in English.

1 a) Identify five reasons why the Qur'an was revealed in portions. **(5mks)**

b) State seven ways used by Kenyan Muslims to preserve the holy Qur'an. **(7mks)**

c) With reference to suratul Nur discuss how Muslims should guard themselves against zinaa. **(8mks)**

2. a) Explain the differences between Hadith Qudsy and Hadith Nabawi. **(8mks)**

b) Highlight the characteristics of the chain of narrators of a sound hadith. **(6mks)**

c) Describe five rights a Muslim should accord to the Non- Muslims. **(6mks)**

3. a) State five qualifications necessary for one to become a mujtahid. **(5mks)**

b) Why is it important for Muslims to believe in Qadar and Qadha? **(5mks)**

c) Discuss the factors that led to the development of schools of thought (madhahib). **(10mks)**

4. a) How does observing swalat inculcate good morals (virtues) in Muslims? **(5mks)**

b) Explain five significance of the law of Mirath in Islam. **(10mks)**

c) Identify five legitimate sources of earning wealth in Islam. **(5mks)**

5. a) Discuss the impact of Hijra in the History of Islam. **(10mks)**

b) State the contributions made by Umar bin Khattab to the Islamic cause. **(5mks)**

c) In which ways did Sheikh Alamin Mazrui influence the development of education among Muslims in Kenya? **(5mks)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

JINA: ……..……..……

SHULE: ……

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

KISWAHILI KIDATO CHA TATU
MTIHANI WA MUHULA WA PILI
MUDA: SAA 2 ½

102/2
KISWAHILI
KARATASI YA PILI
LUGHA

Maagizo

a. Jibu maswali **yote.**
b. Majibu yote yaandikwe katika nafasi ulizoachiwa katika karatasi hii ya maswali.
c. Majibu yote **lazima** yaandikwe kwa lugha ya Kiswahili.
d. Karatasi hii ina kurasa 10 zilizopigwa chapa.
e. Watahiniwa ni lazima wahakikishe kuwa kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.

Kwa matumizi ya mtahini pekee

Swali	Upeo	Alama
1	15	
2	15	
3	40	
4	10	
Jumla	80	

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1. UFAHAMU (ALAMA 15)

Soma taarifa ifuatayo kisha jibu maswali

Zaraa ndio uti wa mgongo wa taifa la Kenya. Viwanda vingi nchini hutegemea kilimo kama malighafi na kuwalisha wafanyakazi. Licha ya umuhimu wa sekta hii, mkulima ambaye ndiye nguzo ya zaraa anaendelea kukabiliwa na matatizo mbalimbali yanayokwamiza juhudi zake.

Mojawapo ya matatizo yanayomkabili mkulima ni ukosefu wa ushauri wa zaraa. Wataalamu wanaotarajiwa kumshauri mkulima kuhusu njia bora za kuzalisha na kuongeza pato lake ni haba ikilinganishwa na idadi ya wakulima wanaohitaji ushauri. Wachache walioko nao wanakwamizwa na mambo tofauti. Mathalani, utawapata hawaendi nyanjani ili kukutana na wakulima kwa kuwa hawana vyombo vya usafiri. Iwapo vipo, huenda petroli ikawa ni kizungumkuti Halikadhalika, usisahau kuwa baadhi ya wataalamu hawa ni walazadamu au fisadi. Kuna wale wanaofika ofisini na kushinda siku nzima wakisoma gazeti huku wakijaza miraba, wakicheza bao au karata. Kuna wale nao ambao hufika ofisini wakaangika koti au sweta kitini ili waonekane kuwa bado wapo na kisha kutokomea kwenda kushughulikia mambo yao ya kibinafsi yasiyohusu ndewe wala sikio kazi waliyoajiriwa kuifanya.

Ukosefu wa sera mwafaka kuhusu ardhi nalo ni tatizo jingine linalotatiza kilimo nchini. Serikali haijaweka sera mahususi kuhusu matumizi ya ardhi. Wananchi wengi huongozwa na taratibu za utamaduni za nasaba zao. Taratibu hizi hupendekeza ugawaji wa ardhi kwa minajili ya urithi kulingana na warithi waliopo. Si ajabu kuwa kote nchini, ardhi inayofaa kwa kilimo imekatwakakatwa vipande vidogovidogo ambavyo haviwezi kuwa na faida kwa zaraa.

Kushindwa kwa mkulima kuongeza virutubishi ardhini ni changamoto nyingine inayokabili kilimo nchini. Ulimaji wa kile kipande cha ardhi mwaka nenda mwaka rudi, bila kukipa nafasi ya kukipumzisha, huufanya mchanga kupoteza virutubishi muhimu vinavyohitajiwa na mimea. Hili nalo huchangia kupunguza uzalishaji wa mazao. Ili kutatua tatizo hili, wakulima wengi hukimbilia mbolea za kisasa ambazo badala ya kumsaidia, humwongezea madhila. Mbolea hizi zinatambulikana kuchangia uchafuzi wa mchanga na ardhi.

Mabadiliko ya hali ya anga nayo huongeza msururu wa madhila ya mkulima. Mabadiliko haya yamemfanya mkulima kushindwa kupanga wakati anaotakiwa kutayarisha shamba, kupanda, kupalilia, kunyunyizia dawa na kadhalika kwa sababu mvua imekuwa adimu. Badala yake panakuwa na vipindi virefu vya kiangazi ambavyo huathiri bidii za mkulima. Maji nayo yanaendelea kupungua na wakulima wengi hawawezi kukimu mahitaji ya unyunyizaji maji mashambani.

Maradhi pamoja na wadudu waharibifu kama vile viwavi, kupe na mbung'o ni changamoto nyingine inayotatiza juhudi za mkulima hapa nchini. Haya hupunguza uzalishaji wa mkulima au wakati mwingine kupunguza mifugo au mimea yake.

Kwa sadfa, iwapo mkulima ataweza kuzalisha mazao licha ya msururu huu wa vikwazo; ana tatizo jingine linalomngojea: ukosefu wa soko kwa mazao yake. Aghalabu, maeneo mengi yanayotoa mazao ya kilimo kwa wingi huwa na matatizo ya usafiri. Njia na barabara huwa mbovu na hazipitiki. Mazao mengi huwa hayafiki sokoni kwa wakati na huwa ni hasara kwa wakulima.

Fauka ya hayo, gharama ya uzalishaji wa mazao ya kilimo hapa nchini huwa ya juu zaidi kuliko faida anayopata mkulima. Watu wengi wameacha kutegemea kilimo kama njia ya ajira kwa kuwa hakilipi. Hii ni zaidi ya ushindani wa bidhaa za kilimo kutoka nje ya nchi ambao ni tatizo jingine linalomkabili mkulima. Mara nyingune wakulima wa kutoka nje ya nchi husaidiwa na serikabi zao kuzalisha mazao kwa kufidiwa au kupewa karadha. Mazao kama haya yaingiapo sokoni huuzwa kwa bei ya chini na hayawezi kushindana na yale ya wale wasiopata mchango wowote kutoka kwa serikali kama wakulima wa hapa nchini.

Mkulina wa Kenya anahitaji msaada wa dharura ili aweze kunyanyua kilimo ambacho ni uti wa mgongo

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wa uchumi wetu. Lau haya hayatofanyika, uchumi wetu utaendelea kudidimia.

Maswali

(a) Ipe taarifa hii anwani mwafaka . **(ala.1)**

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(b) Kilimo kina umuhimu gani humu nchini? **(ala.2)**

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(c) Ni kwa nini wataalamu wa kilimo waliopo hawawafai wakulima nyanjani? **(ala.4)**

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(d) Eleza changamoto ya mkulima katika kuzalisha mazao ya kutosha **(ala.4)**

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(e) Kwa nini watu wengi wameacha kutegemea kilimo kama njia ya ajira **(ala.2)**

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(f) Eleza msamiati ufuatao kama ulivyotumiwa katika taarifa. **(ala.2)**

(i) Walazadamu

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(ii) Karadha

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2. UFUPISHO (ALAMA 15)

Dhuluma kwa wanawake sio matokeo ya siasa baada ya uhuru, bali inatokana na hali iliyokuwepo tangu enzi za mababu zetu; kabla ya ukoloni. Kubaguliwa na kudhulumiwa kwa wanawake kisiasa kunaoana na kunyonywa kwake kijamii kunakoshuhudiwa siku nenda miaka rudi.

Elimu ya jadi ilimwandaa mwanamke kuwa chombo kitiifu cha mwanamume. Mwanamke aliandaliwa katika unyago na katika mfumo mzima wa malezi kuwa chombo cha kumtumikia mwanamume-kumstarehesha, kumfariji, kumlisha na kumzalia watoto. Mwanamke tangu jadi hakuruhusiwa kushiriki katika shughuli za kisiasa na utawala wala hakuna mtu aliyeamini kwamba mwanamke angeweza kushikilia wadhifa wowote wa uongozi.

Demokrasia ya jadi naihusudu sana; ambapo wazee walikaa chini ya mbuyu na kuamua mambo ya jumuiya. Mahakama ya kijiji ilikuwa aghalabu ni ya wazee na wanaume peke yao. Hakukuwa na mwanamke aliyeshirikishwa, hata kama alikuwa ajuza. Sifa waliyokuwa nayo wanawake ni ile ya usihiri na uganga. Mwanamke yeyote aliyezeeka alidhaniwa kuwa bingwa wa uchawi, ulozi na ushirikina. Kwa hivyo, wanawake ndio waliokuwa washirikina wakubwa. Maana fursa ya kupata elimu pana zaidi hawakuwa nayo. Si ajabu kuwa mwanamke alipojitokeza na kusema jambo Ia busara, alipuuzwa na pengine kutukanwa hadharani.

Kwa bahati nzuri. kumezuka mwamko uliotuingiza katika enzi mpya. Vita vya wanawake vya kujihami na kujiendeleza katika ulimwengu unaotawaliwa na wanaume vimetapakaa kote katika kila sehemu ya dunia. Wanawake wengi wamekiuka misingi na mizizi ya utamaduni na kung'oa asasi za kijamii na itikadi ambazo daima zimeendelea kumnyanyasa na kumuumbua utu mwanamke tangu jadi. Watetezi wa haki za wanawake zamani walilaumu suala la serikali za mataifa kutochukua hatua za utekelezaji wa maazimio yaliyoendelea kupitishwa na Umoja wa Mataifa mwaka hadi mwaka. Huku masuala ya wanawake ya kijamii, utu na utamaduni yakishangiliwa kupitishwa, watetezi wameeleza wasiwasi wao ikiwa kupitishwa kwa maazimio kutasaidia kuileta maendeleo ya haraka kwa wanawake kimataifa na katika nchi moja. Fauka ya hayo, baadhi ya wachunguzi wanaonelea kuwa maazimio mengi hayadokezi hatua za kufikia haki za wanawake.

Maazimio mengine yanazungumzia kuhusu kuondolewa kwa ubaguzi dhidi ya wanawake, kushiriki kwao katika uendelezaji wa amani ya kimataifa na ushirikiano wa kimataifa, majukumu yao katika jamii, mfuko wa Umoja wa Mataifa wa wanawake (Unifem) na kuimarisha hadhi ya wanawake katika sekretariati ya Umoja wa Mataifa miongoni mwa shughuli nyingine katika mkabala huu.

Wanawake wameonyesha vipaji vyao katika nyanja mbalimbali za maisha siasa, uchumi, utawala na kadhalika. Wanawake wamejikakamua na kudhihirisha kuwa wao pia wanajukumu muhimu Ia kutekeleza iii kuyaongoza maisha yao na ya watu wengine. Wadumishaji wa dhuluma za kijinsia hawana budi kusalimu amri na kuukubali ukweli huu, wapende wasipende. Mtazamo juu ya haki sawa unatokana na kukubaliwa na kuondolewa kwa ama zote za ubaya dhidi ya wanawake. Kwa bahati mbaya, itikadi na mila za kiasili bado hazitupi nafasi ya kuwashangilia wanawake wanaojitolea mhanga kutetea hadhi yao pamoja na ya wanyonge wengine. Wao huonekana kama waasi, wapinga mila na watovu wa utii.

MASWALI:
UFUPISHO

(a)Bila kubadilisha maana asilia,fupisha aya tatu za kwanza (Maneno 45 – 55) **(alm6)**

Matayarisho

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Nakala safi

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(b) Kwa kurejelea aya tatu za mwisho,pambanua hoja muhimu zinazoguziwa na mwandishi.
(Maneno 60 – 65) (alama 7)

Matayarisho

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Nakala safi

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3. **MATUMIZI YA LUGHA (ALAMA 40)**

(a)i) Sauti mwambatano ni nini? **(alm1)**

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ii) Toa mfano mmoja wa neno lenye sauti mwambatano **(alm1)**

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(b) Andika neno lenye silabi iliyo na muundo wa KKKI. **(alm1)**

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(c) Tambua aina za nomino katika sentensi ifuatayo:
Ulafi wake fisi unawashangaza wengi. **(alm2)**

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(d) Andika sentensi ifuatayo upya ukigeuza nomino kuwa kitenzi **(alm1)**
Alionyesha ukakamavu baada ya kupata <u>tiba.</u>

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(e)i) Eleza maana ya mzizi wa neno **(alm.1)**

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.ii)tambua mzizi katika neno **alifiwa** **(alm1)**

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(f) Tunga sentensi kudhihirisha matumizi mawili ya kibainishi **(alm2)**

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(g) Ainisha kitenzi katika sentensi:
Kitabu kilichopotea ni changu **(alm1)**

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(h) Tunga sentensi na uonyeshe shamirisho na chagizo **(alm4)**

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(i) Kanusha sentensi ifuatayo
Musa alipika na kula chakula cha mtoto **(alm.2)**

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(j) Tofautisha sentensi zifuatazo kimaana **(alm2)**
Waziri angekuwa na habari angefanya maamuzi
Waziri angalikuwa na habari angalifanya maamuzi

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(k) Andika sentensi ifuatayo katika hali ya ukubwa wingi
Nguo iliyofuliwa na mwanamke huyo imekauka. **(alm2)**

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(l) Andika katika usemi wa taarifa.
"Masomo yetu yatakuwa rahisi mwaka huu hivyo hatutaumia sana," alisema Amina **(alm.3)**

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(m) Changanua sentensi ifuatayo kwa kielelezo cha jedwali.

Amobi waliingia mtandaoni na wengi wananufaika. **(alm4)**

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(n) Kwa kutunga sentensi toa matumizi mawili ya ‘na’. **(alm4)**

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(o) Tunga sentensi moja ili kutofautisha matumizi ya maneno haya shaba/ shamba **(alm2)**

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(p) Fafanua maana mbili tofauti za sentensi hii.

Wanafunzi walipanda mti **(alm2)**

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(q) Onyesha miundo yoyote mitatu ya kirai Nomino **(alm3)**

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(r) Andika kinyume cha: ***Furaha amehama kwetu.*** (alama 1)

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4. **ISIMU JAMII**

a) Taja mambo manne yanayopelekea kufifia/kufa kwa lugha, **(alm4)**

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b) Soma makala yafuatayo kisha ujibu maswali yafuatayo

...ninapinga hoja iliyotolewa na mheshimiwa waziri wa Fedha ya kupiga marufuku matumizi ya mifuko ya plastiki. Baada ya kumsikiza kwa makini, ninapenda kumkosoa kwa kudhihirisha kuwa..... kulingana na kifungu nambari ...

i) Bainisha sajili ya mazungumzo hayo. **(alm2)**

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ii) Huku ukitoa mifano mwafaka, eleza sifa nne za sajili hii kwa mujibu wa kifungu hiki. **(alm4)**

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EXCELLING STUDENTS FORM THREE
END TERM 2 HYBRID EXAMS

NAME: ……..

SHOOOL: ……

ADM NO: ……. SIGN: ……..…… DATE: ……...……..

MATHEMATICS (Alternative A)

FORM 3

Time: 2½ Hours

Instructions to Candidates

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

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

(c) *This paper consists of **two** sections**; Section I** and **Section II.***

(d) *Answer **all** the questions in **Section I** and any **five** questions from **Section II.***

(e) ***Show all the steps in your calculations, giving your answers at each stage in the spaces provided below each question.***

(f) *Marks may be given for correct working even if the answer is wrong.*

(g) *Non-programmable silent electronic calculators and KNEC Mathematical tables may be used, except where stated otherwise.*

(h) *This paper consists of **16** printed pages.*

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

For Examiner's Use Only
Section I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total

Section I

17	18	19	20	21	22	23	24	Total

Grand Total

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SECTION I (50MARKS)

Answer all the questions in this section.

1. Given that $\frac{\frac{3}{5}of\ {}^{-}6+2\frac{2}{3}\times1\frac{1}{2}}{1\frac{1}{8}-\frac{5}{2}+1\frac{4}{5}\div\frac{9}{10}}=n^{-n}$ find the value of n. **(3mks)**

2. Use square roots, reciprocal and square tables to evaluate to 4 significant figures the expression.

$$\left(0.0432\right)^{\frac{1}{2}}+\left(\frac{3}{4.321}\right)^{2}$$ **(3mks)**

3. A line passes through the points $A(3,4)$ *and* $B(1,-4)$. Find the equation of the perpendicular bisector of line AB.

(3mks)

4. Find the values of x which satisfies the equation.

$32^{x^2}=16^{1\frac{3}{4}x-3}$ **(4mks)**

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5. Find the integral values of x that satisfy the inequality.

$3x-4 \geq 8x+1 > 2x+13$ **(3mks)**

6. Solve for x in the equation:

$\log_3(x+23) - \log_2 16 + 1 = \log_3(9-x)$ **(3mks)**

7. Maina and Otiende live 60km apart. Maina leaves his home at 9.00am cycling towards Otiende's house at 20km/h. Otiende leaves his home at 10.00am cycling towards Maina's house at 8km/h

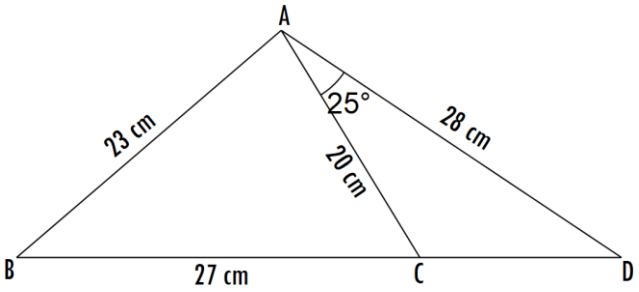
a) At what time did they meet? **(2mks)**

b) How far is the meeting point from Maina's house? **(1mk)**

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8. Given that, $\underset{\sim}{a} = \begin{pmatrix} -3 \\ 4 \end{pmatrix}, \underset{\sim}{b} = \begin{pmatrix} 2 \\ -1 \end{pmatrix} and\ \underset{\sim}{c} = \begin{pmatrix} -5 \\ -6 \end{pmatrix}$, and that $\underset{\sim}{p} = 2\underset{\sim}{a} + 3\underset{\sim}{b} - \underset{\sim}{c}$. Find $\left|\underset{\sim}{p}\right|$ **(3mks)**

9. $\angle CAD = 25^{\circ}$ **(4mks)**



10. The data below shows masses in grams of pieces of metal in a factory.

Mass x (g)	1	2	3	4	5	6
Frequency, f	1	3	$3m$	2	4	$2m$

If the mean mass is 3.85g, find the value of m. **(3mks)**

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11. Simplify the expression

$$\frac{4x^2 - y^2}{3y^2 - 7xy + 2x^2}$$

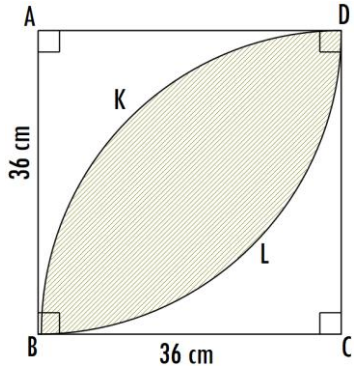
(3mks)

12. A Kenyan bank buys and sells foreign currencies at the exchange rates shown below

	Buying	Selling
	Kshs	Kshs
1 Euro	133.98	134.00
1 US Dollar	110.13	110.50

An American arrived in Kenya with 2 000 Euros. He converted all the Euros to Kenya shillings at the bank. He spent Ksh 251 020 while in Kenya and converted the remaining Kenya shillings into US dollars at the bank. Find the amount in Dollars that he received. **(4mks)**

13. The figure drawn below is a square ABCD of sides 36.75cm. The shaded area is formed out of two segments. DLB and DKB.



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Find the area of the shaded region. **(4mks)**

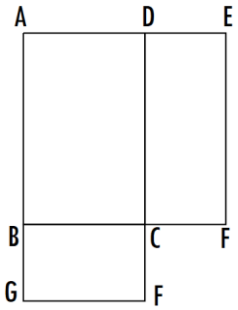
14. The sum of the interior angles of a regular polygon is 1080^0. Calculate

(a) The number of sides of the polygon **(2mks)**

(b) The size of the exterior angle of the polygon. **(1mk)**

15. Three similar pieces of timber of length 2.4 m, 3.0 m and 3.6 m are cut into equal pieces. Find the largest possible area of a square which can be made from any of the three pieces. **(3mks)**

16. a) Complete the figure below so as to make the net of a cuboid ABCDEFGH. **(2mks)**



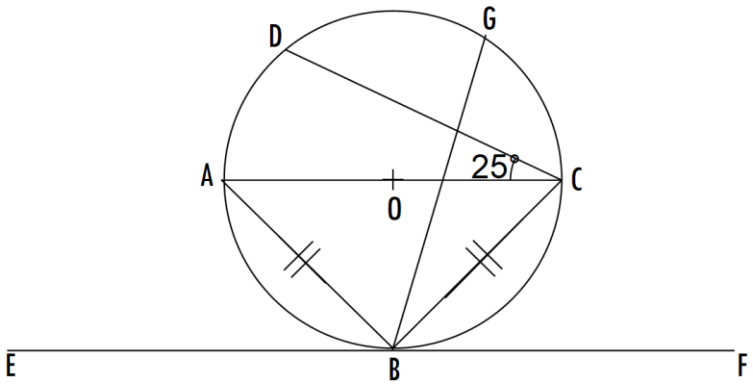
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b) Hence determine the surface area of the cuboid. **(2mks)**

SECTION II (50 marks)

*Answer **only five** questions in this section in the spaces provided*

17. In the figure below AOC is a diameter of the circle centre O; AB = BC and $\angle ACD = 25^0$. EBF is a tangent to the circle at B. G is a point on the minor arc CD.



(a) Calculate the size of:

(i) $\angle BAD$ **(3mks)**

(ii) The obtuse $\angle BOD$ **(2mks)**

(iii) $\angle BGD$ **(2mks)**

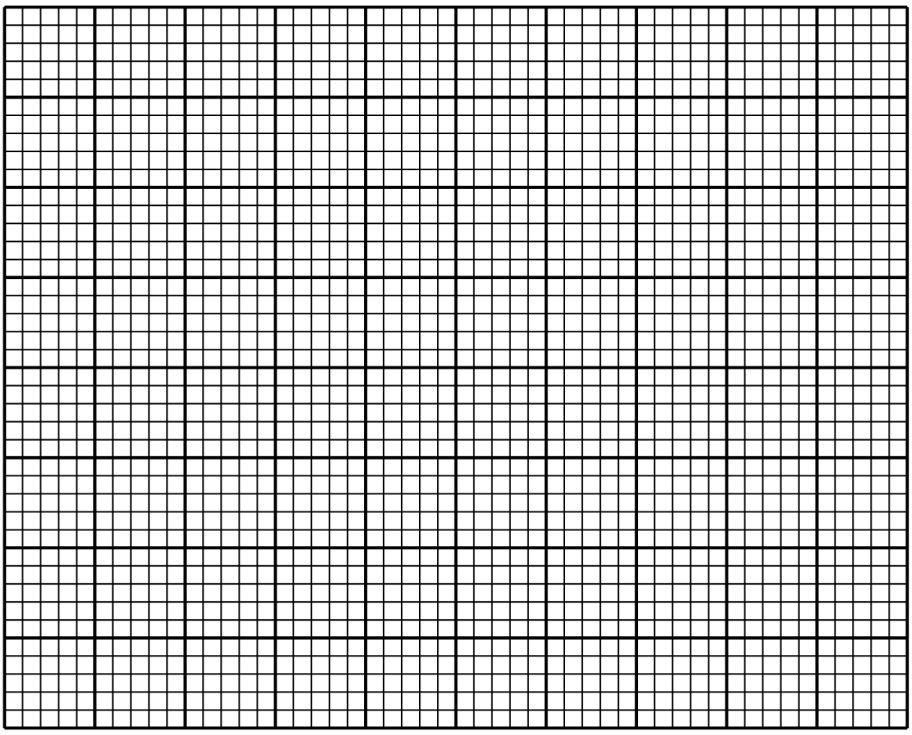
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(b) Show that ∠ABE = ∠CBF **(3mks)**

18. (a) Complete the table below for the function $y = 2x^2 + 4x - 3$ for the range $-4 \le x \le 2$.(2marks)

x	-4	-3	-2	-1	0	1	2
y			-3			3	13

(b) On the grid provided draw the graph of the function $y = 2x^2 + 4x - 3$ for the range $-4 \le x \le 2$. **(3mks)**



(c) Use your graph to estimate the roots of the equation $2x^2 + 4x - 3 = 0$ **(1mk)**

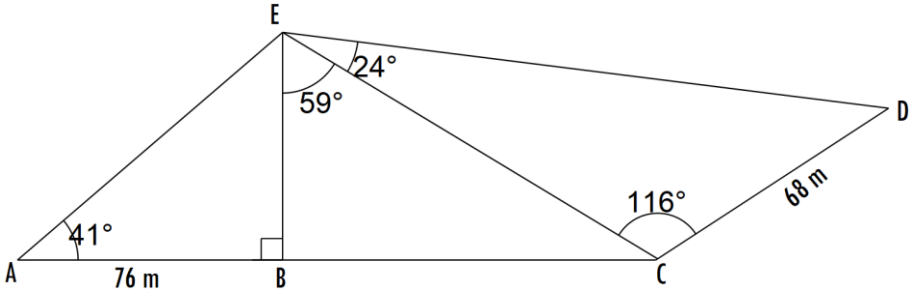
(d) (i) On the same grid draw the line $y = 2x - 3$ **(1mk)**

(ii) Find the points of intersection of the curve $2x^2 + 4x - 3 = 0$ and the line $y = 2x - 3$ **(1mk)**

(e) Hence or otherwise form a quadratic equation with roots in (d)(ii) above **(2mks)**

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19. The figure below represents a quadrilateral piece of land ABCDE divided into three triangular plots. The lengths AB and CD are 76 m and 68 m respectively. Angle BAE = 41^0, BEC = 59^0 and ECD = 116^0.



(a) Find to four significant figures:

(i) The length of EB. **(2mks)**

(ii) The length of EC. **(2mks)**

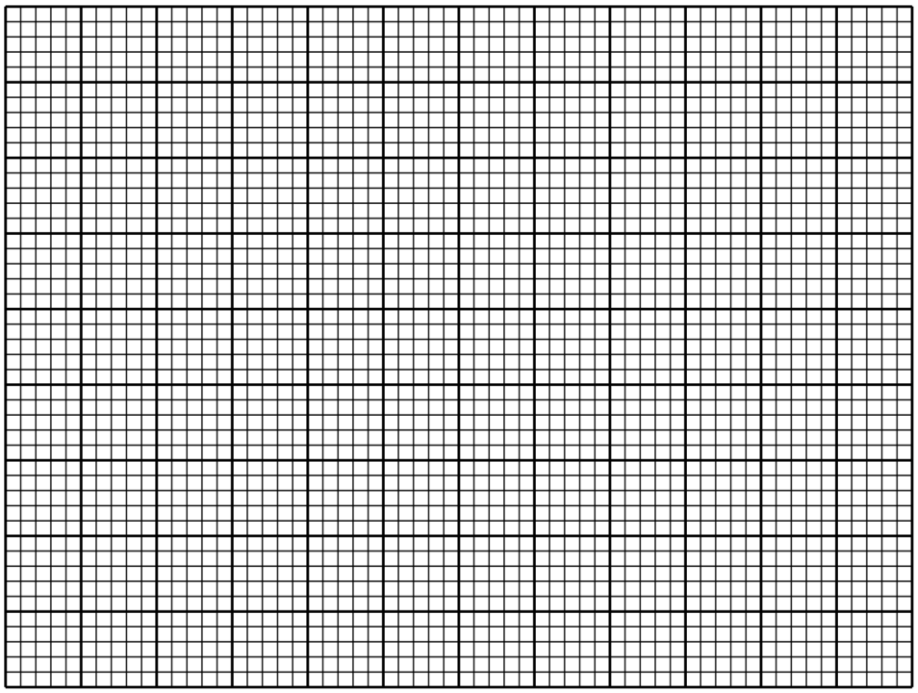
(iii) The perimeter of the piece of land. **(3mks)**

(b) The plots are to be fenced with seven strands of barbed wire leaving an entrance of 2.7m wide to each plot. The type of barbed wire to be used is sold in rolls of lengths 580m. Calculate the number of rolls of barbed wire that must be bought to complete the fencing of the plots. **(3mks)**

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20. The vertices of triangle PQR are P (0,0), Q (6, 0) and R (2, 4)

(a) Draw triangle PQR on the grid provided. **(1mk)**



(b) Triangle $P'Q'R'$ is the image of a triangle PQR under an enlargement scale factor $-\frac{1}{2}$ and centre (2, 2). On the same grid draw triangle $P'Q'R'$ and write down its coordinates. **(3mks)**

(c) On the same grid draw triangle $P''Q''R''$ the image of triangle $P'Q'R'$ under a positive quarter turn about point (1, 1). **(3mks)**

(d) Draw a triangle $P'''Q'''R'''$ the image of triangle $P''Q''R''$ under reflection in the line $y = 1$. **(2mks)**

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(e) State the type of congruence between triangle $P'''Q'''R'''$ and triangle $P'Q'R'$. **(1mk)**

21. The frequency table below shows the marks scored by the 50 pupils in a mathematics test.

Marks	$30-39$	$40-49$	$50-59$	$60-69$	$70-79$	$80-89$	$90-99$
Number of pupils	3	4	12	15	9	4	3

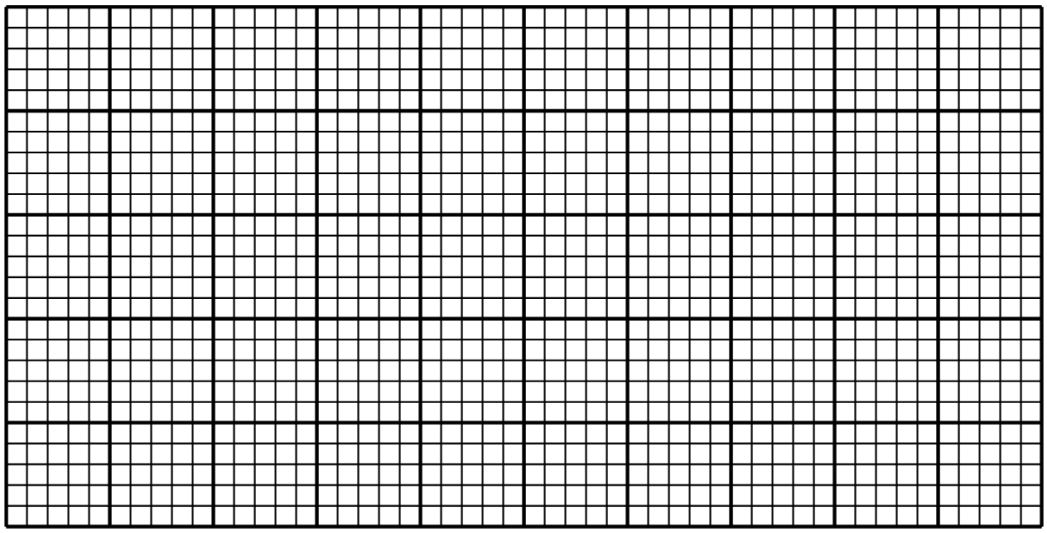
(a) State the modal frequency. **(1mk)**

(b) Calculate the mean mark. **(3mks)**

(c) Calculate the median mark. **(3mks)**

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(d) Draw a histogram and a frequency polygon on the same grid provided below to represent the above information **(3mks)**



22. Two aeroplanes, T and S leave an airport A at the same time. S flies on a bearing of 060° at 750km/h while T flies on a bearing of 210° at 900 km/h.

(a) Use a suitable scale, to draw a diagram showing the relative position of the aeroplanes after two hours. **(4mks)**

(b) Use your diagram to determine:

(i) the distance between the two aeroplanes. **(2mks)**

(ii) the bearing of T from S. **(1mk)**

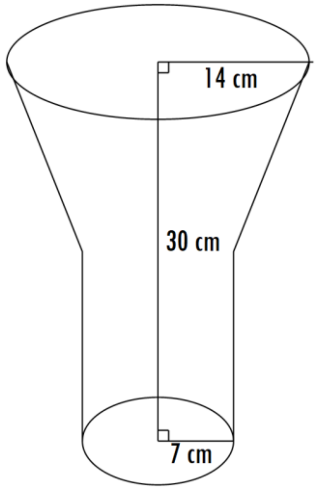
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(c) Aeroplane T later flew to the East at the same speed for one hour. Show its final position on the diagram in (a) above. Determine:

(i) Its final distance from A. **(2mks)**

(ii) Its final bearing from S. **(1mk)**

23. The diagram **below** represents a model of a pillar. The radii of the top and the base are 14 cm and 7 cm respectively. The height of the cylindrical part is 10cm while the height of the whole pillar is 20 cm.



(a) Calculate the volume of the model in cm^3. **(6mks)**

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(b) Calculate the mass of the material used to construct the pillar given that the actual height of the whole pillar is 60m and the density of the material used is 0.84g/cm³. (Give your answer in tonnes). **(4mks)**

24. The table below shows Kenya's tax rates a certain year.

Income (K£ p.a)	Tax rates (Ksh Per £)
1-5220	2
5221 – 10440	3
10441 – 15660	4
15661 – 20880	5
20881 and above	6

In that year Mr. Masika earned a basic salary of Ksh 26 000 per month. He is entitled to a house allowance of Ksh. 15 000 per month and a medical allowance of Ksh. 2 000 per month.

Calculate:

a)i) His taxable income per year in pounds. **(2mks)**

ii)His monthly gross tax. **(4mks)**

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iii)The monthly net tax if he is given a relief of Kshs. 1 800 per month. **(2mks)**

b) Other deductions per month are as follows:
N.H.I.F Ksh 1 500, Cooperative loan Ksh 5 600, WCPS 2% of basic salary, Coop shares Ksh 4 000
Find his monthly net pay. **(2mks)**

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EXCELLING STUDENTS FORM THREE END TERM 2 HYBRID EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..… DATE: ……..

PHYSICS (QUESTION PAPER)
FORM 3
2 HOURS

Instruction to candidates

- This paper consists of two sections **A** and **B**
- Answer all questions in section **A** and **B** in the spaces provided
- All workings **must** be clearly shown, and Use the **CONSTANTS** given.

✓ Gravitational acceleration, 'g' = $10m/s^2$

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1-14	25	
15	10	
16	11	
17	11	
18	12	
19	11	
TOTAL	80	

1. State what mechanics as a branch of physics deals with. **(1mk)**

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2. Figure 1 shows a measuring cylinder containing some liquid. Another $5cm^3$ of the liquid is added into the Cylinder. Indicate on the diagram the new level of the liquid. **(2mks)**

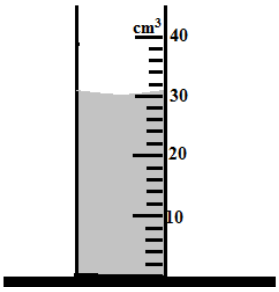


Figure 1

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3. Figure 2 shows a set up used to determine the mass of a solid S. The rod is pivoted at its centre of gravity C.

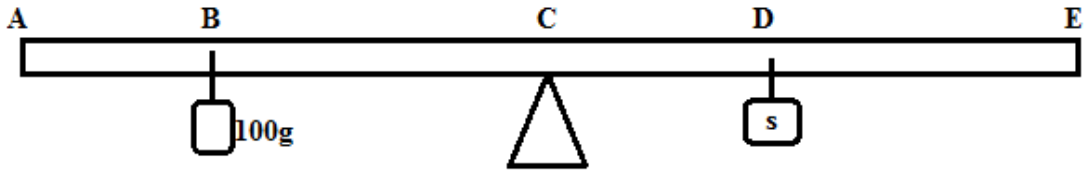


Figure 1

State two measurements that need to be made to determine the mass of solid, S. **(2mks)**

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4. Write an expression to show how the measurements in (3) above are used to obtain the mass of S. **(2mks)**

5. Figure 3 (a, and b) shows capillary tubes inserted in water and mercury respectively.

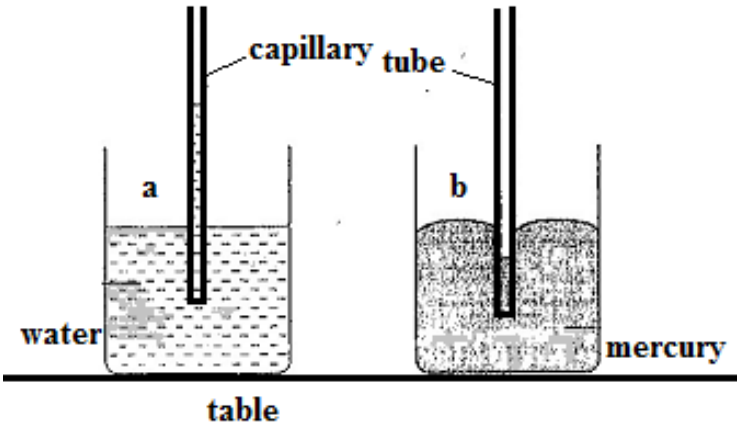


Figure 2

It is observed that in water the meniscus in the capillary tube is higher than the meniscus in the beaker; while in mercury the meniscus in the capillary tube is lower than the meniscus in the beaker. Explain these observations. **(2mks)**

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6. When a bicycle pump was sealed at the nozzle and the handle slowly pushed towards the nozzle, the pressure of the air inside increased. Explain this observation. **(2mks)**

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7. Figure 4 shows a syringe full of water. It has two identical holes A and B drilled along its cylinder. The cylinder nozzle is closed

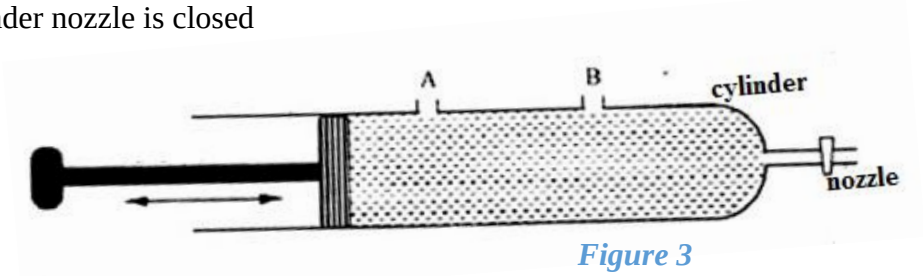


Figure 3

a) State with a reason how the speeds of the jets of water from A and B compare when the piston is pushed into the cylinder **(2mks)**

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8. State the reason why it is easier to separate water into drops than to separate solids into smaller pieces **(1mk)**

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9. Figure 5 shows a fire alarm circuit.

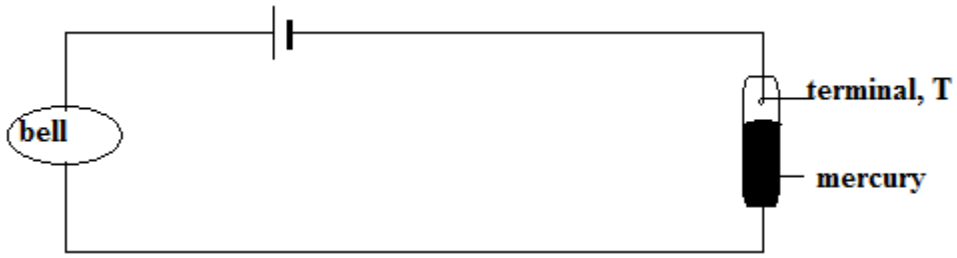


Figure 4

a) Explain how the alarm functions. **(3mks)**

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10. The figure 6 below shows a marble balanced on a ball resting on a flat surface as shown

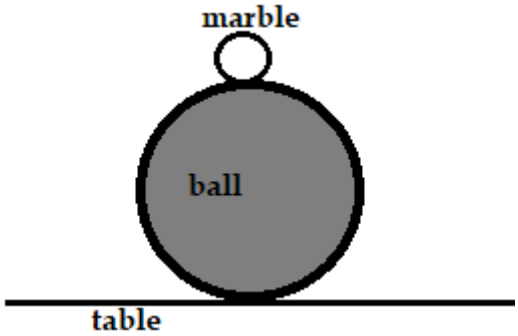


Figure 5

Explain the state of equilibrium of the marble. ***(2mks)***

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11. A box of mass 500g is dragged along a level ground at a speed of 12m/s. if the force of friction between the box and the floor is 2000N, calculate the power developed. **(2mks)**

12. On the axes provided (figure 7) sketch a graph of velocity (v) verses time (t) for uniformly accelerated motion given that at t = 0; v is greater than zero. **(1mk)**

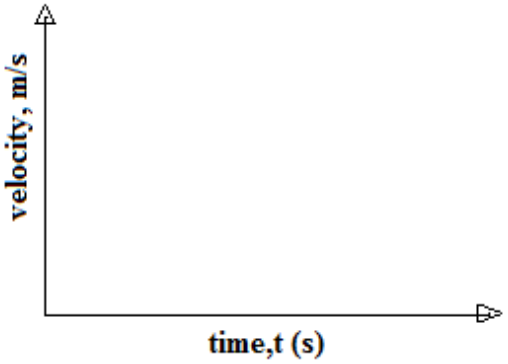


Figure 6

13. State one factor that affects the turning effect of a force on a body. **(1mk)**

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14. Figure 8 shows a minibus of mass (m) moving along a curved part of the road with a constant speed, v from point A towards point B.

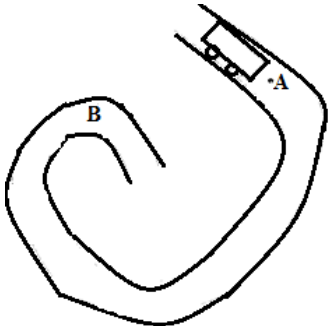


Figure 7

a. identify the force which enables the minibus to successfully negotiate the bend. **(1mk)**

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b. Suppose the force (14, a) above reduces to zero at point B. Using an arrow, show the direction along which the minibus will travel. **(1mk)**

SECTION B (55 MARKS)

15.

a. A force of 7.5N stretches a certain spring by 5 cm. Calculate the work done in stretching this spring by 8.0 cm. **(3mks)**

b. Figure 9, shows a cross-section of a handle of a screw jack 70 cm long. The pitch of the screw is 0.8 cm

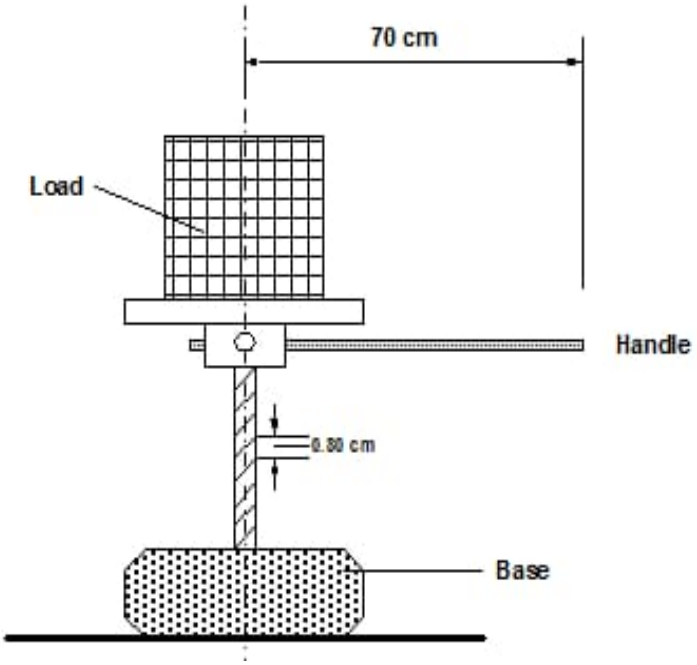


Figure 8

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Given that the efficiency is 65%, calculate;

i) The velocity ratio of the system **(2mks)**

ii) The mechanical advantage of the screw jack **(2mks)**

iii) Sketch a graph of efficiency of the machine against Load **(1mk)**

iv) Draw a single moving pulley with a velocity ratio of 2. **(2mks)**

16. The figure 10, shows a pith ball in a flask. A jet of air is blown over the mouth of the flask as shown.

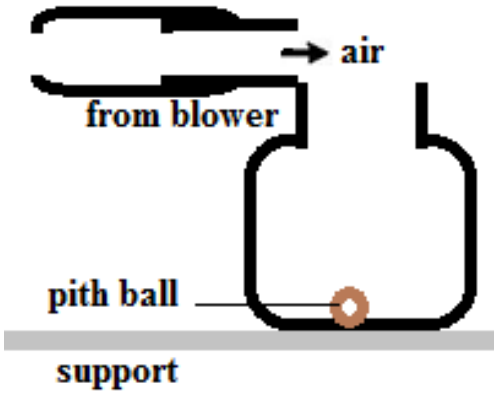


Figure 9

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a. State and explain the observation made. **(2mks)**

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b. Figure 11, shows a tube of varying cross sectional area. V1, V2 and V3 represents the speeds of water as it flows steadily though the sections of the tube.

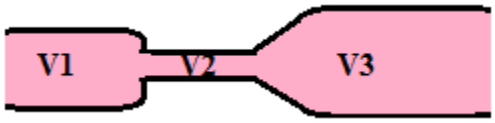


Figure 10

Arrange the speeds V_1, V2 and V3 in decreasing order starting with the highest**.** **(1mk)**

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c. The diagram below (figure 12) shows a cross- section of an airplane wing. When the airplane is moving at a constant height and constant speed, an upward force is exerted on its wing.

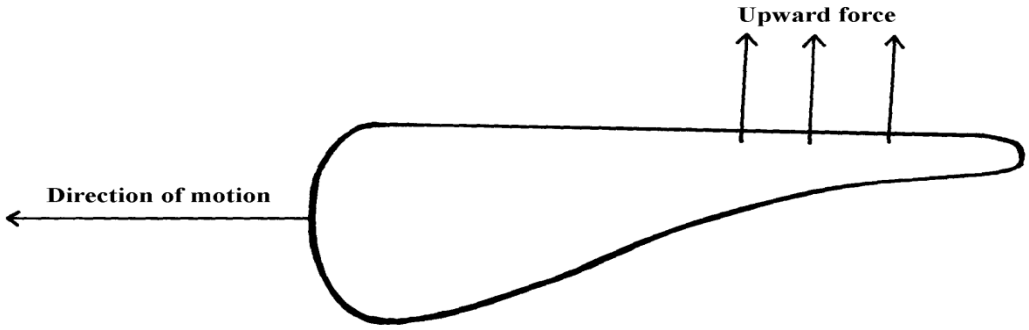


Figure 11

i. Explain the cause of the upward force? **(2mks)**

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ii. State Bernoulli's principle **(1mk)**

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d. Two table Tennis balls are in the same level while suspended from threads a short distance apart. A stream of air is blown between the balls in a horizontal direction. State and explain what happens to the balls **(2mks)**

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e. When spraying a field of water using a hose pipe, it is common to reduce the pipes opening in order to spray water furthest. Other than pressure, what other quality is varied in the process? **(1mk)**

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f. The figure 13, shows water forces through a hydraulic system by a pump. An air chamber is used to maintain a continuous flow of water during both the up stroke and down stroke of the piston pump.

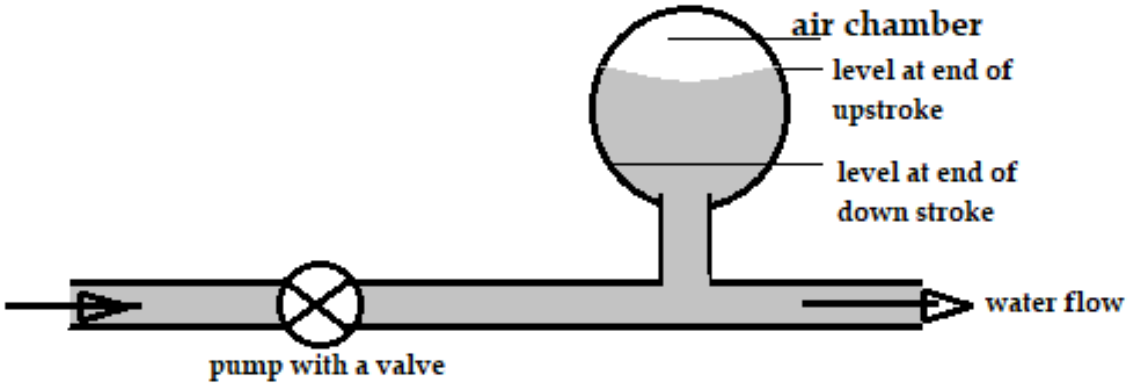


Figure 12

State what happens during upstroke **(2mks)**

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17.

a. Define total internal reflection **(1mk)**

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b. The figure 14 shows a ray of green light through a prism. The speed of green light in the prism is 2.0 x 10^8m/s

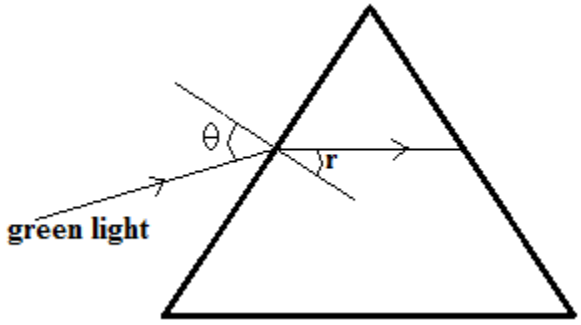


Figure 13

i. Determine the refractive index of the prism material (speed of light in air = 3.0 x 10^8m/s **(3mks)**

ii. Given the r ==23.2^0, determine the angle , θ **(3mks)**

b) i) The diagram (figure 15) shows two prisms

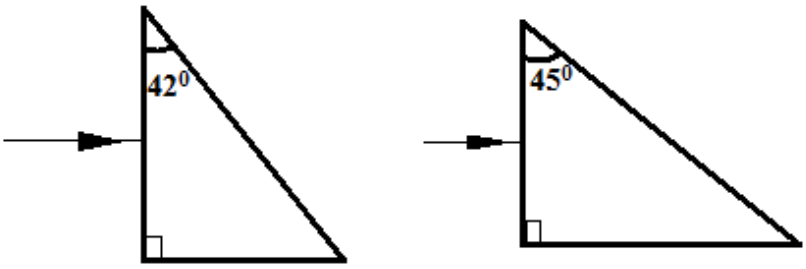


Figure 14

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Given that the critical angle of the glass in both prisms is 42^0 sketch the paths of the two rays in each prism indicating all the angles. **(2mks)**

ii) Give two application of total internal reflection **(2mks)**

18. Figure 16 is a motor connected to a magnetic switch called a relay operated by an ordinary switch S_1. Use the information in the figure to answer questions that follow.

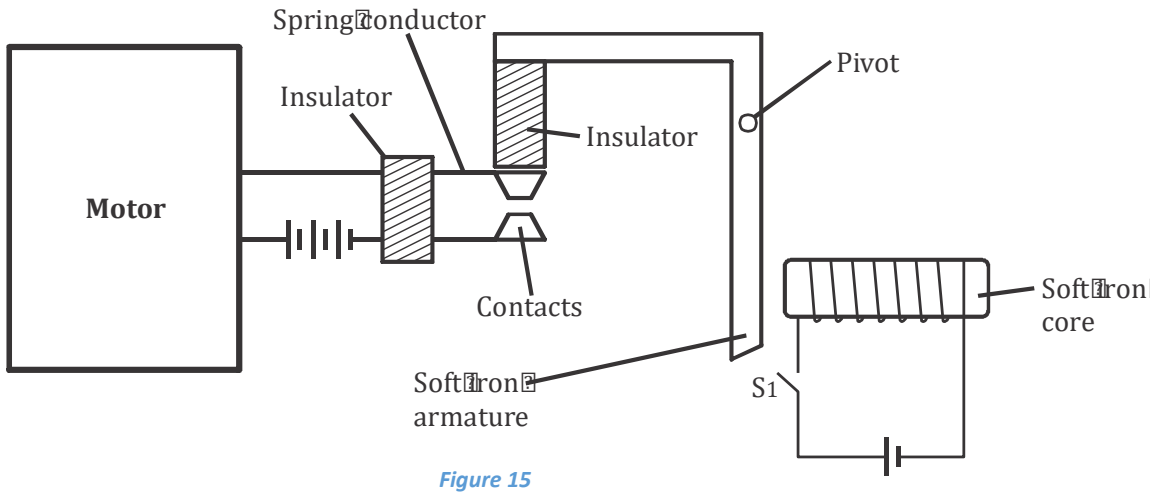


Figure 15

a.

i) Explain how the relay switches on the motor wnen S_1 is closed. **(3mks)**

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ii) State with a reason the effect on the motor if the iron core is replaced with a steel core and switch S_1 is put on and then off. **(2mks)**

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b. A student set up the circuit shown in figure 17. The bulbs are identical.

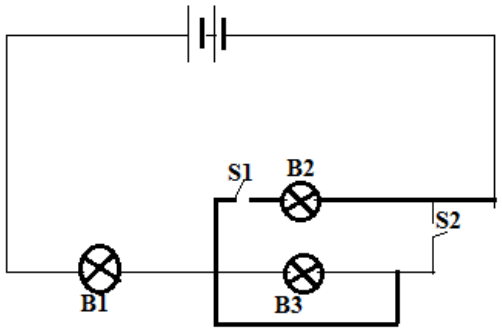


Figure 16

State the observation when;

i) Switch S1 is closed **(1mk)**

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ii) If all switches are closed; compare the lighting between B_1, B_2 and B_3 **(2mks)**

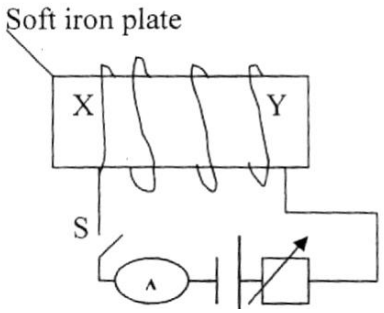
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c. The diagrams (figure, 18) shows a soft iron plate in a solenoid and a permanent magnet suspended by a spring and placed next to the solenoid.



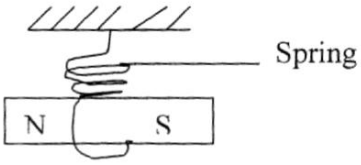


Figure 17

i. State with reason the behaviour of the magnet when the switch S is closed. **(2mks)**

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ii. State any two ways of increasing the strength of the electromagnet **(2mks)**

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19.

a. Define principal focus of a concave mirror **(1mk)**

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b. The figure 19 shows how a ray is incident on a curved mirror.

i.Complete the diagram to show how the incident ray is reflected**.** **(1mk)**

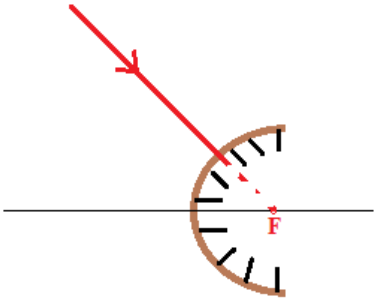


Figure 18

ii.A convex mirror of radius of curvature 40cm forms an image which is half the height of the object. Determine the object distance **(3mks)**

c. Using a ray diagram, show how a curved mirror may be used by a dentist to examine the teeth of a patient. **(2mks)**

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d. The figure 20 shows a graph of $\frac{1}{u} against \frac{1}{v}$ for a certain mirror.

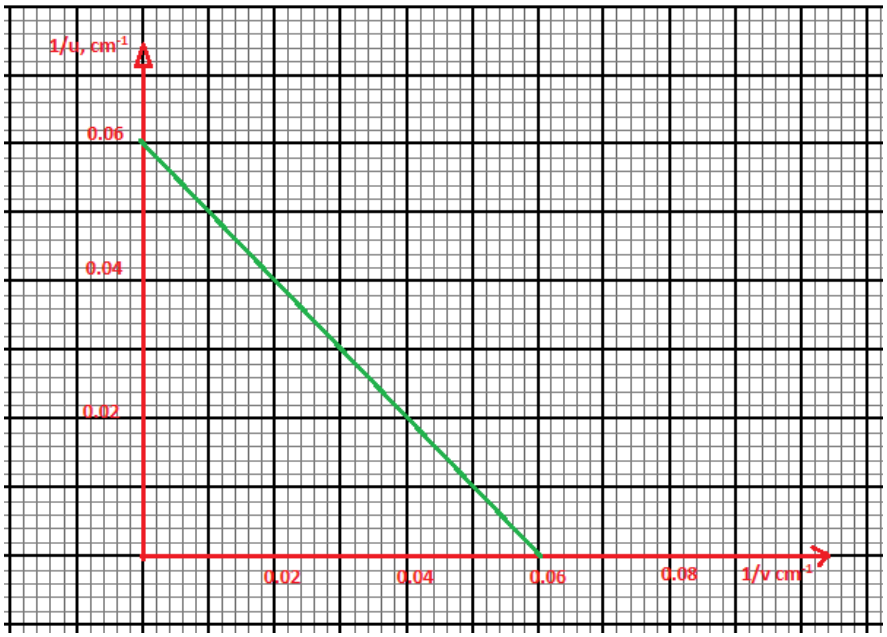


Figure 19

From the graph, determine:

i. The focal length of the mirror **(2mks)**

ii. The object distance when magnification is 2: **(2mks)**

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