

FORM 3 TERM 1 OPENER

ALL SUBJECTS

A compilation of entry test examinations for form 3 syllabus work.

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EPUBLISHERS FOR MARKING SCHEMES**

MR ISABOKE 0705525657

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FORM 3 TERM 1 OPENER

BIOLOGY

NAME.....ADM NO.....CLASS.....

1(a) What is Biology? (1mk)

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(b) State and define any two main branches of biology. (2mks)

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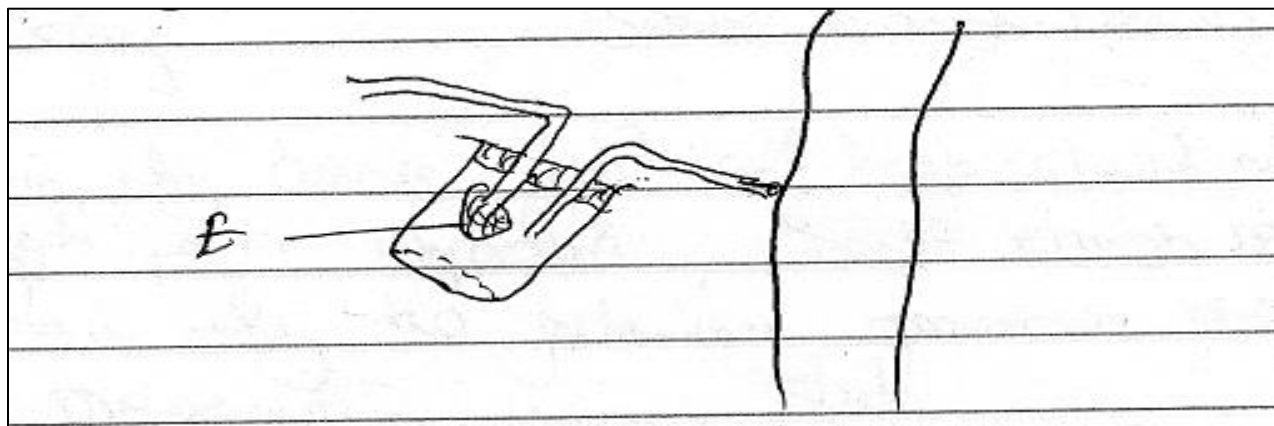
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2 Below is an illustration of a piece of apparatus strategically positioned to trap some organism



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(a) Name the apparatus. (1mk)

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(b) State the function of the part labeled E. (1mk)

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3. State the name given to the study of (2mks)

(a) Micro-organism

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(b) Living things and their surrounding

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4 State the organelles that (2mks)

(i) provide site for protein synthesis

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(ii) involved in cell division through formation of spindle fibre

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5(a) Give two precautions that should be observed when placing a microscope on a bench. (2mks)

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(b) To estimate the size of a cell A student observed 20 cells across a diameter of field of view of 5mm in diameter. Calculate the cell diameter. Show your working. (2mks)

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(c) Explain why coarse adjustment knob should not be used to lower the high power objective. (1mk)

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6(a) Explain why the following processes are important during the preparation of a slide. (2mks)

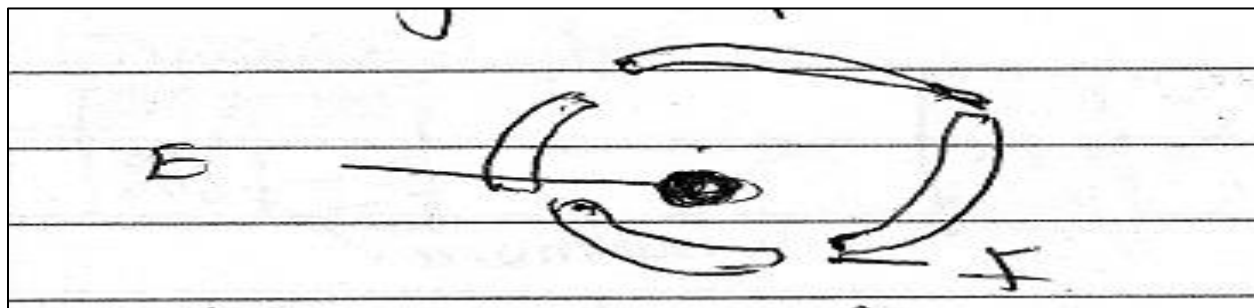
(i) making a very thin section

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(ii) placing a cover slip over the section

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(b) The diagram represents a nucleus



(i) State the function of part labeled E (1mk)

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(ii) Name part labeled F. (1mk)

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7. List two differences between plant and animals. (2mks)

Plants	Animals

8. A student named cockroach as AMERICAN PERIPLANTA.

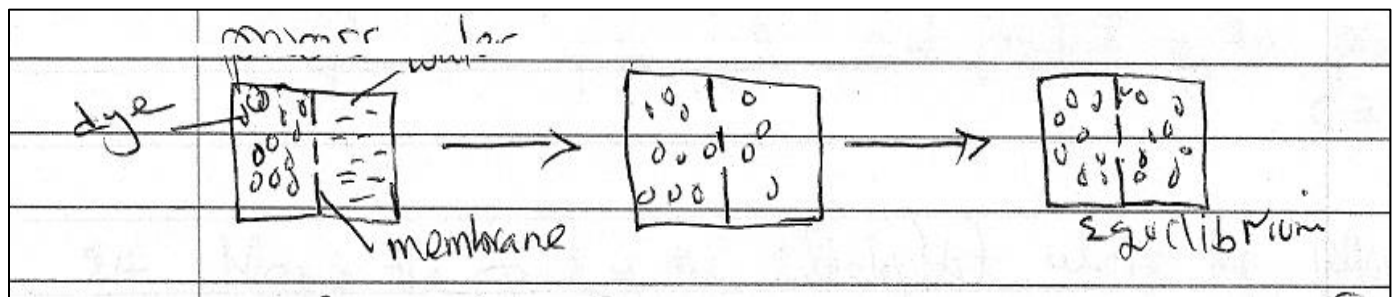
(a) Identify two mistakes made in naming the cockroach. (2mks)

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(b) Write the name correctly. (1mk)

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9 The set up below illustrate a certain physiological process.



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(i) Name the physiological process. (1mk)

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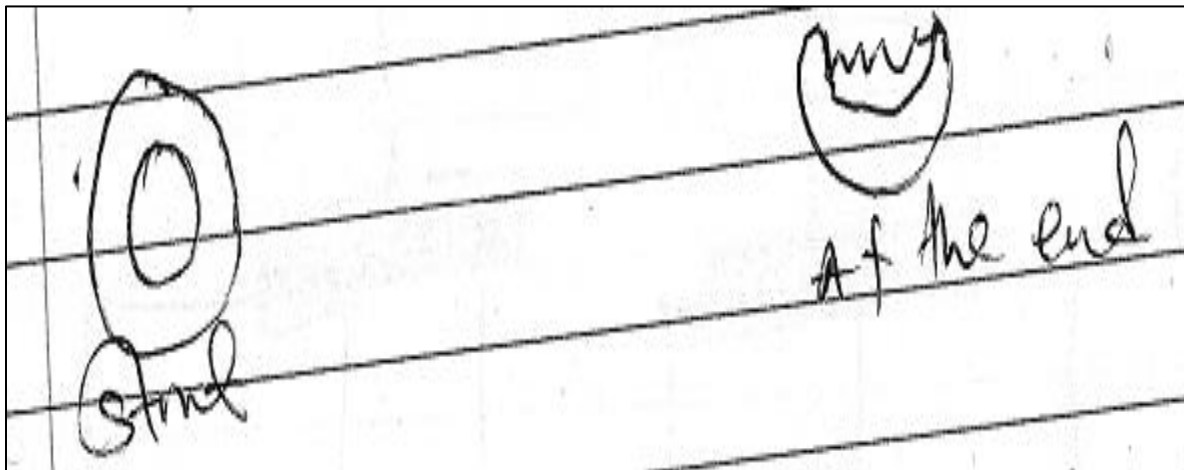
(ii) Give two ways in which the movement of dye can be increased. (2mks)

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(b) List at least three factors that affect the process named above. (3mks)

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10 The diagram below show red blood cell that was subjected to certain treatment.



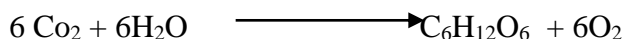
(a) Give the name given to cells appearance at the end. (1mk)

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(b) Name the solution in which the cell was placed in (1mk)

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11 The reaction below represent a process that takes place in plants.



(a) Name the process (1mk)

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(b) State two factors affecting the process named above. (2mks)

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(c) Explain the fate of the product of the process named above (2mks)

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12 Name the part of the chloroplast where the following occur (2mks)

(i) Carbon (IV) oxide fixation

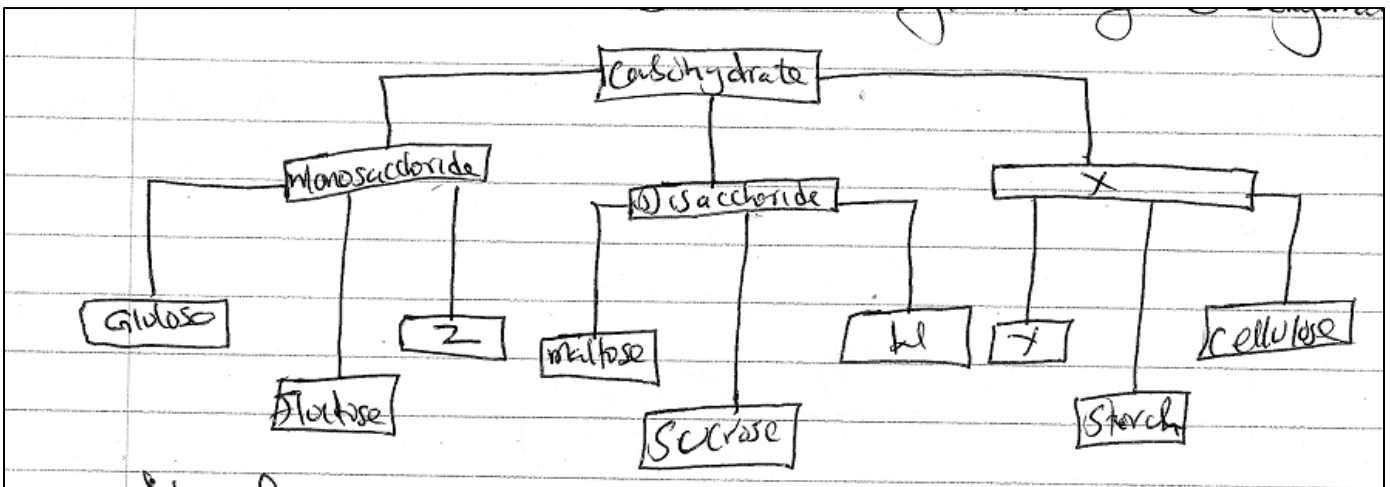
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(ii) photolysis

13 Name three plant cells that contain chloroplasts

(3mks)

14 The flow chart below shows classification of carbohydrates.



(a) Identify the form of carbohydrates represented by letters W,X,Y and Z. (4mks)

W

X

Y

Z

15(a) Differentiate between homodont and heterodont teeth

(2mks)

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(b) Name two enzyme in the digestive system secreted in their inactive form. (2mks)

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(c) State the name of the juice secreted in the following region, (2mks)

(i) stomach

(ii) small intestine

d) State two functions of saliva. (2mk)

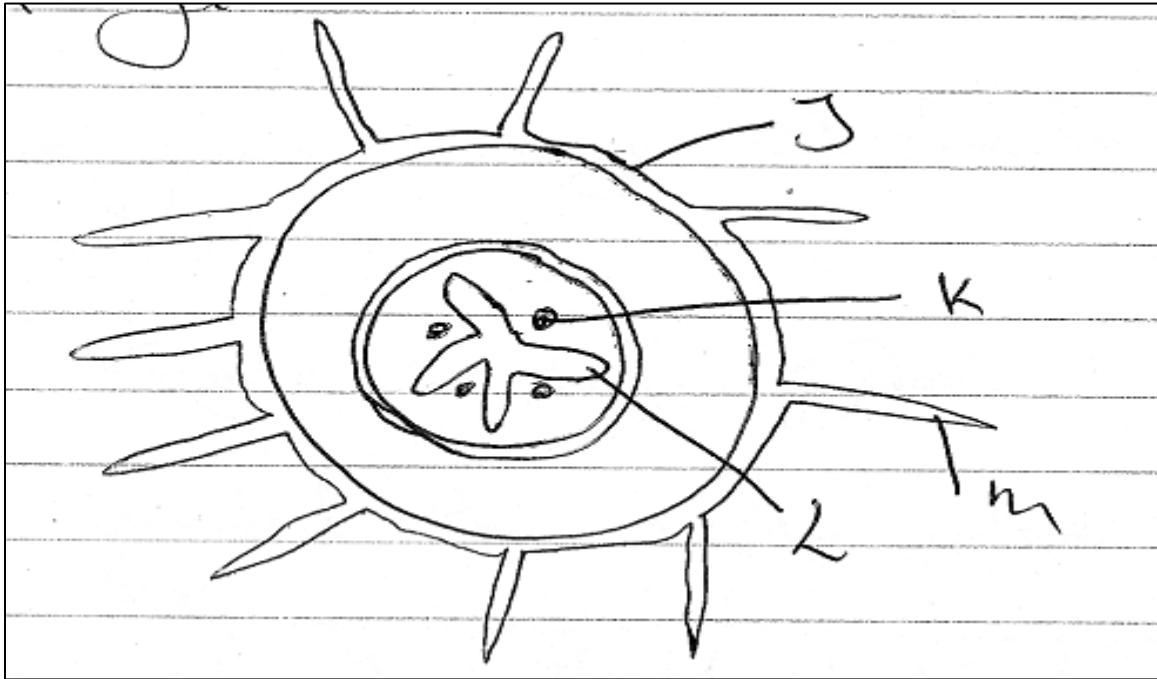
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(e) What is the importance of including roughages in the diet. (1mk)

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16 The diagram below represent a transverse section of a plant organ



a) From which plant organ was the section obtained. (1mk)

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b) Give two reasons for your answer in (a) above. (2mk)

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c) Name the part labeled: (3mks)

J -

K -

L -

17(a) State why it is important for plant to lose water to the atmosphere. (2mks)

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(b) Give the importance of mitochondria found in the companion cell of phloem. (1mk)

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18(a) State two function of blood other than transport. (2mks)

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b) State two forms in which carbon(IV) oxide is transported. (2mks)

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19 State the role of the following during blood clotting process (2mks)

(a) Thromboplastin

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(b) Calcium ions

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20 Name two gaseous exchange structures in higher plants. (2mks)

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21 What is a single circulatory system. (1mk)

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22 The table provided shows the transportation of substances in the human body.

Substance	Transported by blood	
	From	To
Oxygen	M	Heart
N	Liver	Kidney
P	Intestine	All body

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Name substance

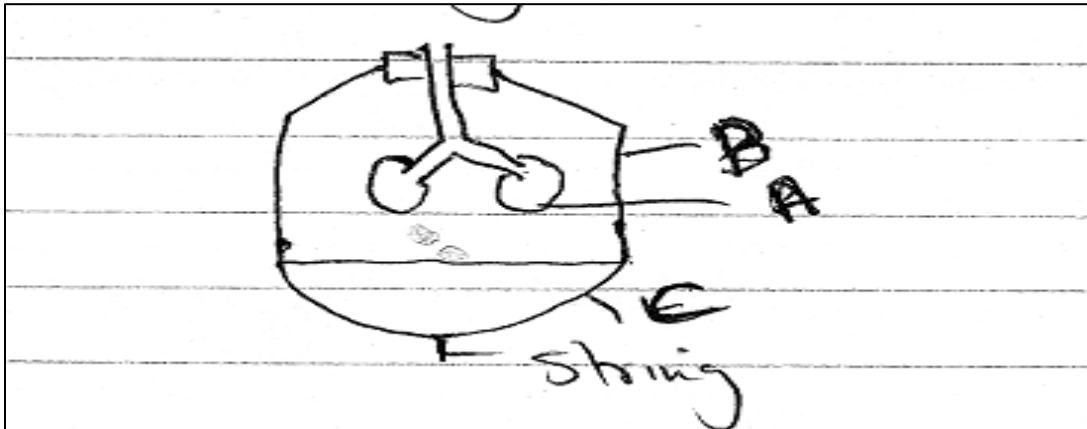
(3marks)

M

N

P

23 The diagram below represent a model used to demonstrate breathing in mammals.



a) Name the mammalian structure represented by the part labeled A and B. (2mks)

A

B

24(a) Name three characteristics of a gaseous exchange surface. (3mks)

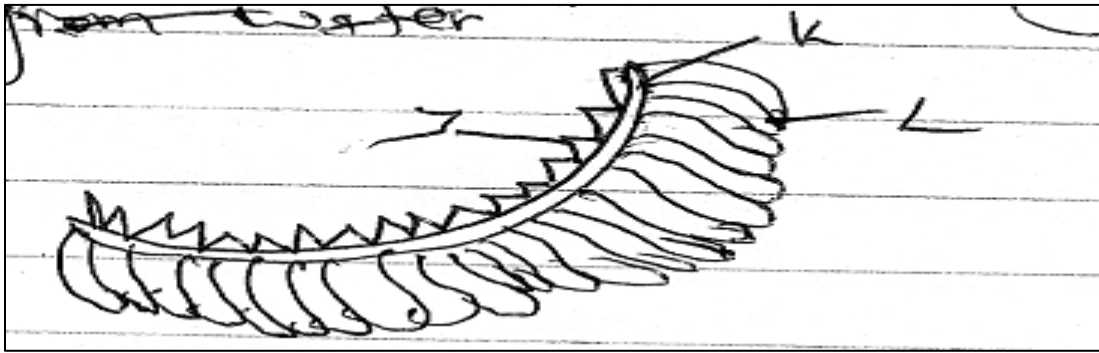
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(b) The diagram below represents an organ in a bony fish.



(i) Name parts labeled (2mks)

K -

J -

(ii) Explain why bony fish dies shortly after being removed from the water. (2mks)

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25(a) Define the term respiration. (1mk)

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(b) Give three products of anaerobic respiration in plants. (3mks)

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26(a) What is oxygen debt

(1mk)

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(b) What happens to lactic acid formed in muscle during exercise when there is sufficient oxygen.
(2mks)

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(c) Write an equation to summarize the process of aerobic respiration.

(1mk)

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27(a) State two ways in which plants manage their waste.

(2mks)

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(b) State one function of each of the following plant product. (2mks)

(i) Papain

(ii) Colchicine

28(a) State two structure of the skin essential for its homeostatic function. (2mks)

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b) Name two kidney diseases. (2mks)

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FORM 3 TERM 1 OPENER

AGRICULTURE

NAME.....ADM NO.....CLASS.....

SECTION A(30MKS)

1. Give four reasons why Agriculture is a art? 2mks

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2. State two branches of livestock farming. 1mk

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3. State four human factors which influence agricultural production. 2mks

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4. Give two aspects if light which affect agricultural production. 2mks

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5. Give any two light breeds of poultry 1mk

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6. State four importance of primary cultivation. 2mks

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7. (a) Give two sources of underground waters. 2mks

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(b) State two conditions under which irrigation is necessary. 1mk

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8. (a) State three characteristics of crops used for green manure. 1½mks

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(b) Give three reasons as to why green manure is not commonly used. 1½mks

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9. State the three basic concepts of economics. 1½mk

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10. Give three function of vitamins in animals body 1½mks

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11. Differentiate between micro and macro nutrients.2mks...

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12. State two ways under which fertilizer are classified. 1mk

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13. State four advantages of using seeds as a planting materials.4x½=2mks

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14. Give four methods of breaking seed dormancy 2mks

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15. State four advantages of raising seedlings in a nursery. 2mks

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16. Define the following terms as used in crop production. 2mks

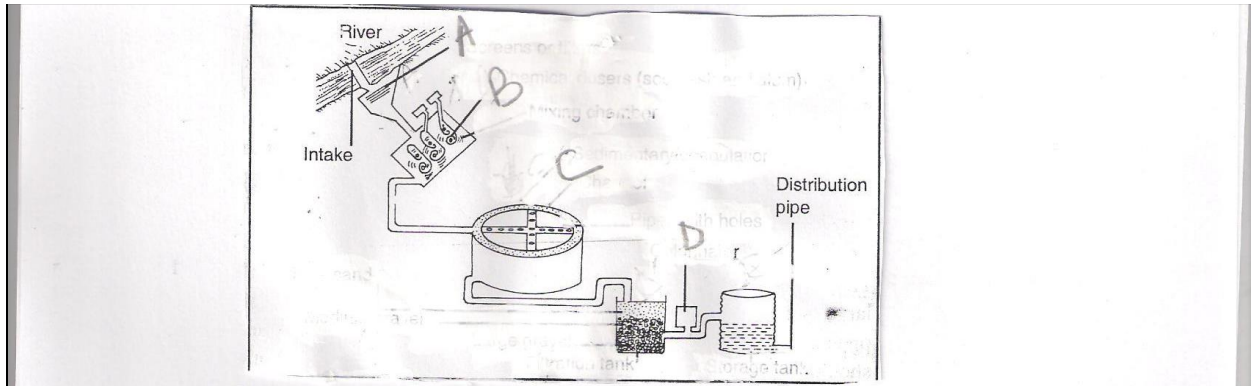
- Gapping.....
- Rogueing.....
- Staking.....

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Thinning.....

SECTION B(20MKS)

17. The diagram below shows a chemical treatment of water .study the diagram and answer the questions that follow.



a. Name the stages labeled A,B ,C and D. 2mks

A.....

B.....

C.....

D.....

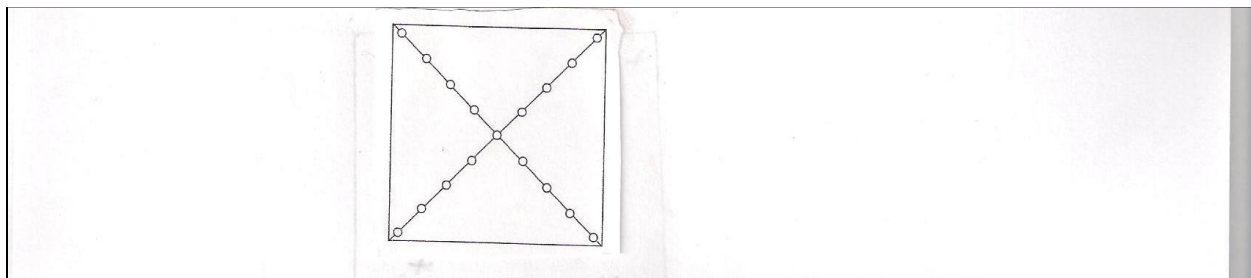
b. Name the chemical which are added in B. 1mks

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c. Give a reason as to why chemical added in C use in water treatment. 1mk

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18. The diagram below shows a method of soil sampling



a. Name the method of soil sampling shown above. 1mk

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b. Besides the method shown above in the diagram, name the other method one can use to perform soil sampling. 1mk

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c. State the information that should be provided on the soil sampling package before it is taken to the laboratory. 3mks

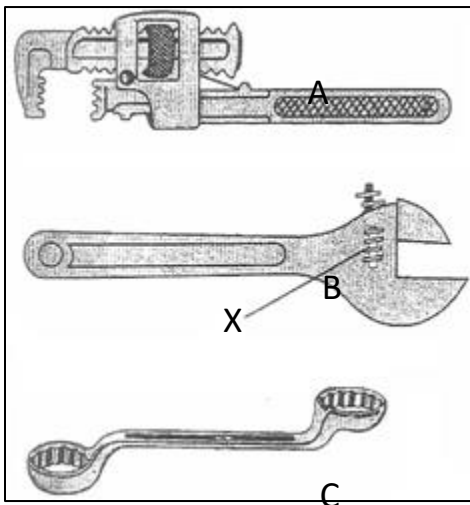
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19. The diagram below show some workshop tools. Study the diagrams and answer the questions that follow.



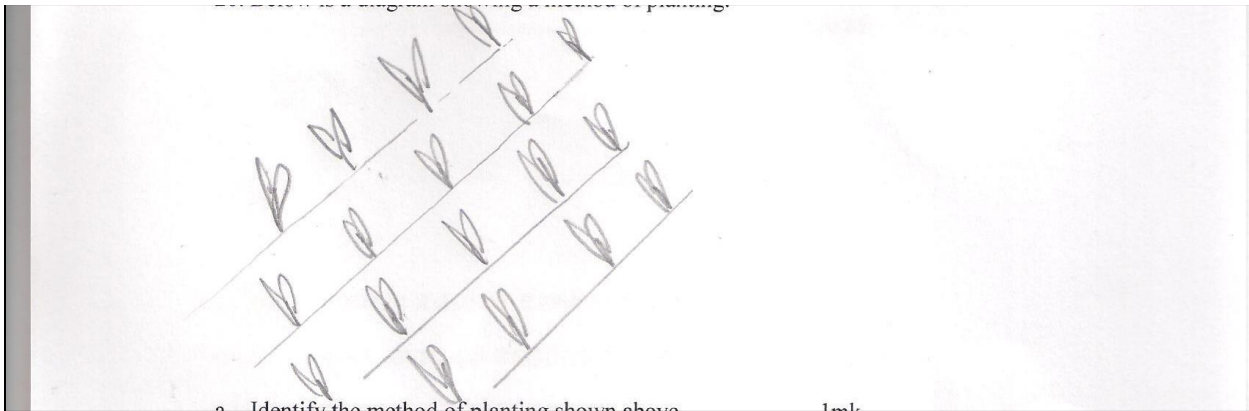
(a) Identify tools labelled.(3 marks)

A
B
C

(b) State the function of the tool labelled **A**.
(1 mark)

(c) State the function of part **X** in the tool labelled **B** 1mks

20. Below is a diagram showing a method of planting.



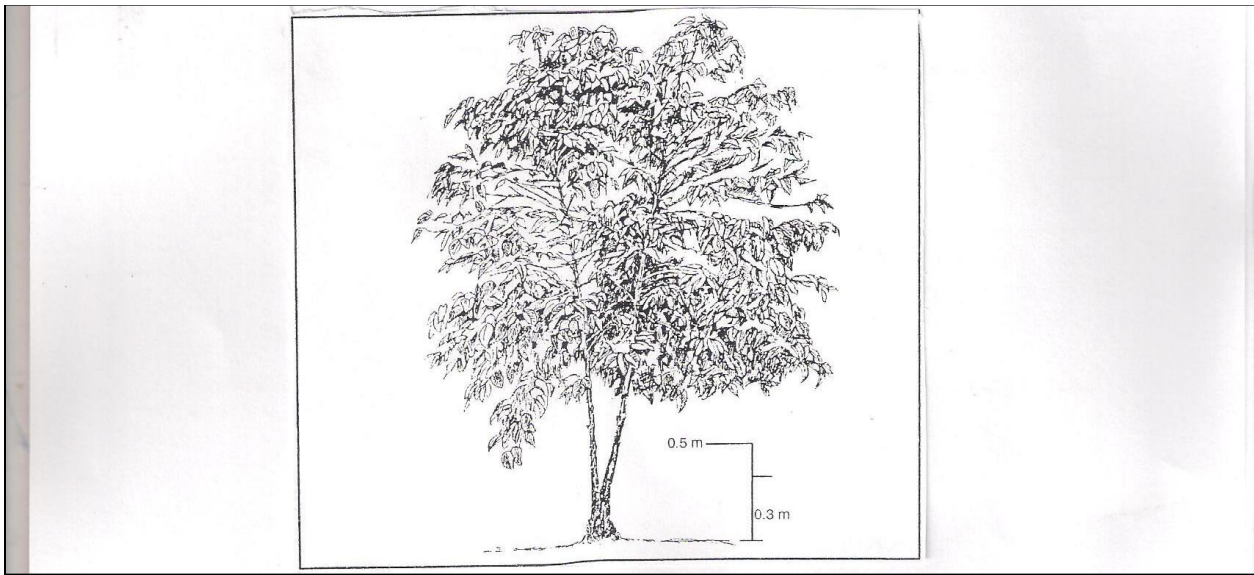
a. Identify the method of planting shown above. 1mk

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b. State four advantages of using the method above. 2mks

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21. The diagram below illustrate a method of pruning coffee .Study it carefully and answer the questions that follow.



a. Identify the method above. ½mk

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b. Apart from the method named above, name the other method of pruning coffee. ½mk

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c. State two disadvantages of using the above method. 2mks

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SECTION C(40 MKS)
ANSWER TWO QUESTIONS ONLY.

22. A) State the effect of wind in agricultural production. 8mks

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b)Outline the procedures of handling a heifer when administering a liquid deworming drug to control tapeworm(5mks

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c)Outline the reasons why ridging is done in crop production. 4mks

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d)Discuss 3 sources of water in an animals body 3mks

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23. (a) Explain various practices which are carried out in a nursery.

10mks

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b) Describe the factors influencing the quality of farm yard manure.

5mks

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c) Explain the importance of using the following materials when making a compost manure.

5mks

- i. Wood ash.....
- ii. Top soil.....
- iii. Well rotten manure.....
- iv. maize straws.....
- v. Tester.....

24. A) Describe Four predisposing factors of livestock diseases

4 mks.

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b) outline the advantages of pruning in crop production. 4mks

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c) **Outline Four importance of keeping livestock health** 2mks

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FORM 3 TERM 1 OPENER

BUSINESS STUDIES

NAME.....ADM NO.....CLASS.....

Section A: Attempt all questions in this section

1. Give any four functions of an office. (4 Mks)

- a.
- b.
- c.
- d.

2. Distinguish between the following: (4Mks)

a. Producer goods and Consumer Goods

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b. Intermediate goods and Finished goods

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3. The following descriptions relates to some documents used in Home trade. Identify the document that befits the description (4mks)

Purpose of the document	Name of the document
To inform the buyer that goods have been dispatched	
To inform the buyer that the order has been received	
Evidence of delivery of goods	
Corrects an overcharge on an invoice	

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4. In each of the following statement give the type of utility created. (4mks)

- | <u>Statement</u> | <u>Type of utility</u> |
|---|------------------------|
| a) Student buying a pen from a school canteen: | |
| b) A farmer taking mangoes to the market:..... | |
| c) Kamau banking money with Equity bank account:..... | |
| d) Making a table at carpentry shop:..... | |

5. Outline four fundamental features of a good transport system. (4 Mks)

- a.
 - b.
 - c.
 - d.
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6. Below are tasks performed by office machines and equipment. State the machine/equipment used to perform each task (4mks) (4mks)

Task	Machine/equipment
a) Sending and receiving verbal messages	
b) Cutting papers into required sizes	
c) Printing stamp impression on envelops	
d) Sending printed diagrams charts, maps e.t.c.	

7. State four consequences that may arise due to poor arrangement of goods in a warehouse. (4 Mks)

- a.
- b.
- c.

d.

8. Highlight four Ways in which legal political environment may improve business performance. (4mks)

a.

b.

c.

d.

9. State four services offered by wholesalers to retailers (4 Mks)

a.

b.

c.

d.

10. State four functions of an entrepreneur. (4 Mks)

a.

b.

c.

d.

11. Outline four benefits of a bonded warehouse. (4 Mks)

a.

b.

c.

d.

12. Outline four difference between a public limited company and a partnership. (4 Mks)

	Public limited company	partnership
2		

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2		

- a. ...
- b.

13. State three measures a consumer may take in order to satisfy most of his wants. (3 Mks)

- a.
- b.
- c.
- d.

14. Highlight four factors to consider when choosing a method of promoting their product. (4 Mks)

- a.
- b.
- c.
- d.

15. State three circumstances when containers may be used in transport of goods. (3 Mks)

- a.
- b.

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c.

16. Outline four contents of a business plan (4Mks)

a.

b.

c.

d.

17. State four reasons why a trader may prefer to advertise of radio over newspaper. (4 Mks)

a.

b.

c.

d.

18. Outline four circumstances when a partnership may be dissolved. 4 Mks)

a.

b.

c.

d.

Section B: Attempt any three questions (30 Marks)

19. A shop keeper ordered some items from a wholesaler. However, when the goods arrived, the shopkeeper found out that they were not the items ordered. Describe five reasons for this breakdown in communication between the two business people. (10 Mks)

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20. Describe five types of malpractices that the government protects consumers against by traders. (10mks)

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21. Outline five reasons why an ethical practice is necessary in product promotion. (10mks)

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22. Explain insurance policies that the owner of a supermarket may find useful for the business (10mks)

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FORM 3 TERM 1 OPENER
CHRISTIAN RELIGIOUS EDUCATION

NAME.....ADM NO.....CLASS.....

1. a) State eight promises that God made to Abraham during his call. (8mks)

b) Give the incidences when Abraham demonstrated his faith in God (7mks)

c) State five modern forms of the covenant. (5mks)

2. a) Outline 6 effects of idolatry in Israel during the time of Elijah (6mks)

b) Describe Mt. Carmel contest (1 kings 18:17-46) (8mks)

c) Identify six forms of idolatry that threatens the existence of Christianity today. (6mks)

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3. a) In which ways was the birth of Jesus going to be extra-ordinary (6mks)

b) Describe the temptations of Jesus in the wilderness (8mks)

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c) Identify the temptations that young people face in Kenya today. (6mks)

4. a) Relate the parable of the wicked tenants (Luke 20: 9-18) (8mks)

b) Name the methods used by Jesus to spread the good news (6mks)

c) State the reasons why people find it difficult to accept the gospel (6mks)

5. a) Name six specialists in traditional African communities. (6mks)

b) Give reasons why cleansing rituals were performed in Traditional African Society (7mks)

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c) State the factors that undermine the roles of elders. (7mks)

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FORM 3 TERM 1 OPENER

ENGLISH

NAME.....ADM NO.....CLASS.....

SECTION A : WRITING (20MKS)

1. You are the chairperson of Amani Debate club in your school. Last Saturday, you had invited a neighbouring school for a debate in your school. The rest of the school also attended the debate; which ended at 6:00pm instead of 4:00pm as earlier agreed. This delayed other school programmes.

a) Write an apology letter to the Principal of your school, citing reasons for the delay (14mks)

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SECTION B: COMPREHENSION (20MKS)

Read the passage below and answer the questions that follow.

We are often advised to be confident: confidence comes when we feel passionately about what we perform, what we have achieved, and what we can offer.

Lack of confidence can hinder things, ranging from how you get ahead in your career to the number of skills you are able to acquire. It is a determining factor in the way you direct your career. Confidence is conveyed from the inner to the outer through the words you speak and the posture you assume. Building confidence is not a one day affair. Neither does it take other people to build your confidence.

I remember an interview I once conducted for secretaries, and the memory of one woman is intact. She stammered from the point she entered the office to the moment she left. Thinking that it was interview jitters, we called her again, based on her technical qualifications rather than her presentation. She presented the same problem. We settled on a different candidate because confidence was a key qualification for the job which involved dealing with clients and colleagues.

Not many entry-level and first-time job-seekers are coached or tutored on how to gain more self-confidence. Instead, we tell them to “attend a few events, meet more people and get the hang of it.” That is not the right approach. Often, by the time you “ get the hang of it.” You will have probably ruined a few chances, stepped on a few toes,

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and generally spoilt a few opportunities. Confidence starts from within, which means working with yourself to find an effective method on your capabilities.

Having had quite some experience interviewing and being interviewed, I have developed three sure-fire ways that not only help me before an interview, but improve my general self-confidence. You must start with one as you progress and eventually build your own self confidence.

I have learnt that confidence begins with pushing yourself towards positive attitude. Before an interview, I tell myself that I am capable of great things, great performance and that interview is only a little chat I must have to get a job. Not only do I talk myself into entering the interview room, but I also talk myself into achieving success, whether or not I need the job about 90 percent of the time, I have been successful in interviews.

Doubting oneself only leads to criticizing oneself, which plants deep roots that can be almost impossible to weed out. My mentor always used to say, “You are what you think you are.”

Secondly, beginning with one small step rather than giant leaps will ensure that you tackle interviews and first jobs with a lot of self-confidence. There are two ways to go through this.

The first one has to do with something you that like doing, such as writing a song. However, this should not be just any song but a new one created out of your love for music. My personal pre-interview confidence boost is to cook something that I have never tried before. This boosts my self-confidence to new levels. After achieving that particular goal, you must pat yourself on the back.

The third step to building confidence involves holding onto that little surge of confidence. Once you have tackled what you have previously found to be difficult, then the next step would be to focus on building your self confidence a lot further.

Ensure that this becomes not only a monthly confidence boost, but a daily one because, as we are all programmed, we must build our self-confidence habitually to maintain it. Routines have been known to help anybody to acquire and maintain confidence.

From daily Nation 20th May 2013.

Questions

- a) Define confidence according to the passage (3mks)

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b) How is confidence conveyed? (2mks)

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c) What suggestions are given to first-time job seekers to help them in gaining more self –confidence?
(3mks)

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d) What does the writer identify as a major hindrance to confidence? (1mk)

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e) According to the writer, what two key qualifications were they looking for in interview for secretaries?
(2mks)

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f) Identify the **three** ways the writer mentions that help before an interview and improve in self confidence.
(3mks)

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g) In **note** form, write what the writer has been doing to achieve success in interview (4mks)

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h) Explain the meaning of the following words as used in the passage (2mks)

d. Interview jitter.....

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e. Habitually

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SECTION C : CLOZE TEST (10MKS)

Fill in the blank spaces with the most appropriate words.

Some parents prefer day schools (1) _____ boarding schools for their children. They say that boarding schools do not give them a (2) _____ to know the teachers of their children (3) _____. These parents also feel that boarding schools lock them (4) _____ of their children's learning. This is (5) _____ some boarding schools (6) _____ parents to visit their children (7) _____ once a term. They say (8) _____ a day school provides (9) _____ time for parents to monitor (10) _____ children's learning.

SECTION D: ORAL SKILLS (10MKS)

d. The following words have either /s/ or /z/ sound. Group them correctly (5mks)

Rise	lose
Presiden	advise
t	preceden
Loose	t
advice	rice
clause	lice

/s/	/z/

e. For each of the following words, underline the stressed syllable (5mks)

- 23. Mis.use (noun)
- 24. re.gis.ter (verb)
- 25. a.larm (noun)
- 26. a.gree.ment (noun)
- 27. ap.proach (noun)

SECTION E: LITERARY APPRECIATION (20MKS)

Read the narrative below and answer the questions that follow

Once upon a time there lived a very beautiful girl known as Karia in a distant village. One day, Karia and her mother went to dig in their garden by the edge of the forest that was home to ogres that could talk and even sing. When it was time to leave, the mother called out to her daughter who was bathing in the stream near the garden, ‘Karia, we had better rush home; darkness will soon descend upon us and there are many ogres along the way’.

Karia hurriedly picked up the luggage her mother had packed and they went home. On reaching home, Karia realized that she had left her beautiful necklace by the stream where she had taken a bath. Her grandmother had given it to her saying, ‘Take good care of this necklace and pass it on to your eldest daughter.’

Karia was very depressed at the fact that she had left it beside the stream.

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‘Mother, I have to go back for the necklace. I forgot it by the stream,’ Karia said. ‘No my dear daughter, it is already dark outside and besides the ogres are roaming the forest.’ She could not bear the thought of her only daughter setting out in the pitch of darkness.

The girl started crying, saying that if she waited for daylight, she would find the necklace missing. Her mother withdrew to the kitchen to check whether the food was ready, she came out only to find Karia missing.

‘Karia! Karia! Karia! Where are you? Come!’ She called out. It dawned on her that Karia must have gone back to the stream for the necklace. She immediately ran to her brother-in-law’s home in search of her husband panting; ‘Father of Karia, gather other men, Karia has gone back to the stream for her necklace! Oh, my only daughter...those ogres...what will I do? ‘What is wrong with my daughter? I could have bought her another necklace,’ said Karia’s father.

It took about an hour for the men to prepare themselves and set out for the search. Their hearts beat with apprehension as they pressed through the dark.

Karia had been running swiftly and by this time she was by the edge of the forest. She slowed down for the remaining part of the journey in order to catch her breath. The early morning wind chilled her skin. The thought, ‘If I failed to get back the necklace, what will I tell my granny?’ quickened her pace to where she had undressed and found that her necklace was intact. Joy flooded her heart. She quickly picked up the necklace and started on her way home with a sprinty leap, laughing at her mother’s fear of ogres.

She had hardly taken a few steps, when she met an ogre squarely planted at the middle of the path. In order to be allowed to pass she sang:

You ogre
Do not bother me
I am Njanwa’s daughter
Take this bead
And let me pass

The ogre accepted the bead and let her pass only to run through the bush past her and stop in the middle of the road. She reached the point where it stood blocking the way and then she repeated her song. By the time she was half way back home, she had run out of beads.

Having no alternative, she tearfully said,

‘Take this arm and let me pass.’

Through her sorrow and pain, she thought of the necklace and the ogre that still demanded something in exchange for passage.

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After a while, she had only one leg and so the ogre decided to eat her up. Her father and the village elders came upon the satisfied ogre. They speared it and slit it open its belly. To their delight, Karia emerged, holding the beautiful necklace. There ends the story.

(Adapted from Narratives from Africa and India for secondary schools and colleges)

Questions

a) Classify the narrative above (2mks)

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b) State any two functions of each of the formulae.

i. “Once upon a time...” (2mks)

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ii. “There ends my story.” (2mks)

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c) Apart from the formulae “Once upon a time...” and “there ends my story”, identify and illustrate three features that indicate that the story is an oral narrative. (6mks)

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d) Identify and illustrate two character traits of Karia. (4mks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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e) Identify and illustrate one theme evident in the narrative above (2mks)

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f) With illustration, identify one economic activity that is practiced by the community in the narrative (2mks)

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SECTION F: GRAMMAR (20MKS)

a) Fill in the blank spaces using the most appropriate form of the word in the brackets (4mks)

- 29. It was never his _____ to start a fight. (intend)
- 30. We all got angry because of the speaker's _____ remarks. (offend)
- 31. He is an _____ expert .(electron)
- 32. He _____ believes in hard work.(true)

b) Join the pairs of sentences into one sentence using the conjunction provided (3mks)

c. -He has never done any fighting.
-He is a soldier.(although)

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d. -Everybody else in that country was blind.
-The one-eyed man became a king. (because)

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e. -I met the man.
-The man's wife bought a car. (whose)

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c) Rewrite the sentences as instructed. Do not change the meaning. (3mks)

i. I will only go if he asks me to. (Begin ; unless)

ii. I think we are being followed by somebody. (change into active voice)

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iii. "Are you writing the proposal?" asked the supervisor. (Change into reported speech)

d) Fill in the blank spaces using the correct preposition (4mks)

- i. The visitors arrived _____ Christmas day
- ii. The explanation you want is _____ the top of page 20.
- iii. The student insisted _____ doing the test at night.
- iv. There is no possibility _____ finishing this work today.

e) Use the simple present tense of the verb in brackets to fill in the blank spaces (3mks)

- Each of the books _____ (cost) over three hundred shillings.
- Neither of the parcels _____ (have) what I was expecting.
- Few people _____ (believe) in superstitions.

g) State the type of phrase underlined. (3mks)

e.g The girl from our village won the award- noun phrase

i. The dog might eat the cake

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ii. We are expecting him to come next year.

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iii. Swimming costumes are very expensive

FORM 3 TERM 1 OPENER

GEOGRAPHY

NAME.....ADM NO.....CLASS.....

SECTION A(25MKS)- ANSWER ALL THE QUESTIONS IN THIS SECTION (25MKS)

1. (a) State three reasons why the interior of the earth has high temperatures. 3mks

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(b) Give two differences between Sial and Sima. 2mks

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2. (a) Give two ways in which heat is transferred to the atmosphere. 2mks

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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(b) Describe how humidity is measured in a weather station. 4mks

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3. (a) State two conditions that are necessary for the formation of petroleum. 2mks

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(b) The table below shows some examples of rocks. Complete it. 3mks

Original rock	metamorphic rock
Granite	
Sand	

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

4. (a) Name two effects of horizontal earth movement . 2mks

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(b) State two weaknesses of continental drift theory. 2mks

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5. (a) Name two modern methods used in weather forecasting . 2mks

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(b) State three ways in which weather forecasting is important to man. 3mks

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SECTION B(ANSWER ALL THE QUESTIONS (75MKS

6. (a) (i) what is folding. 2mks

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(ii) State three factors which influence folding. 3mks

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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(iii) Differentiate between symmetrical and asymmetrical fold.

2mks

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(b)(i) Name three fold mountains found outside Africa.

3mks

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(ii) Apart from fold mountains, name two features produced by folding.

2mks

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(iii) Describe how fold mountains are formed.

5mks

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(c) Explain four ways in which fold mountains influence human activities.

8mks

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7. (a)(i) Name two types of vegetation.

2mks

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(ii) Give two Pssyio-graphic factors influencing vegetation distribution .

2mks

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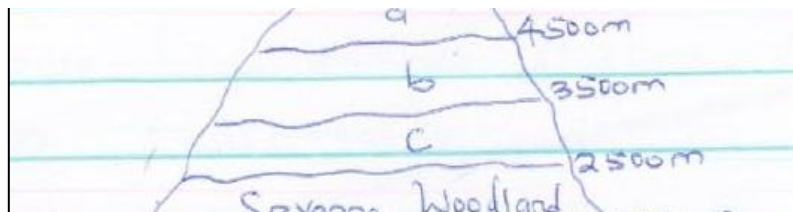
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(b) The diagram below shows vegetation zones of an east African mountain .Use it to answer the questions that follow



(i) Name the zones marked a,b,c and d .

4mks

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(ii) Give one reason why there are no vegetation cover on top of the mountain. 1mk

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(c)(i) State the name given to temperate grassland vegetation in :2mks

-NorthAmerica-

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-Argentina-

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(ii) Explain three uses of Savanna vegetation. 6mks

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d) Explain four characteristics of tropical desert vegetation. 8mks

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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8. (a) The table below shows the production of various horticultural crops in Kenya between 2008 and 2010 in “000” tonnes.

Crop/Year			
Cabbages			
Tomatoes			
Onions			
Oranges			

(i) Using a scale of 1cm represent 50,000 tonnes, draw a comparative bar graph to present the data above. 8mks

(ii) Name the crop that has the highest production within the period . 1mk

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(iii) Give two advantages of using comparative bar graphs.

4mks

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b) identify the two types of photographs.

2mks

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(c) Give two uses of photographs.

4mks

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(d) Give two differences between aerial photographs and ground photographs. 4mks

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(e) Define the following term used in photographs:

Dead ground

2mks

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FORM 3 TERM 1 OPENER

HISTORY

NAME.....ADM NO.....CLASS.....

TIME 2HRS

SECTION A (25MKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION.

- a) Name two sources of history of the Kenyan communities during the pre-colonial period.
(2 Marks)

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- b) Give two factors which led to the migration and settlement of the Iteso into Kenya by 1800 A.D. (2 Marks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

c) Identify two aspects of the culture of the early man that had their origin in the late Stone Age. (2 Marks)

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d) Identify two factors which favoured the development of crop growing in ancient Egypt. (2 Marks)

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e) In what two ways did the Kenyan communities interacted during the pre-colonial period. (2 Marks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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- f) What was the base of the political organization among the Cushites during the pre-colonial period. (1 mark)

- g) Identify the two economic activities which the Maasai acquired as a result of interacting with the Agikuyu during their settlement in Kenya. (2 Marks)

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- h) What religious functions did the Orkoiyot of the Nandi perform during the pre-colonial period.? (2 Marks)

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- i) Name two Bantu communities in Kenya whose ancestors settled in the Mt., elgon area before migrating to their present homeland. (2 Marks)

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j) State any two Arab families that ruled the coastal town. (2 Marks)

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k) Distinguish between barter and currency trade. (2 Marks)

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l) State two roles played by the Tuaregs in the Trans-Saharan Trade. . (2 Marks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

m) State two ways in which direct democracy is exercised in Kenya. . (2 Marks)

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SECTION B

(45 MARKS)

ANSWER ANY THREE QUESTIONS FROM THIS SECTION.

n) (a) State any three theories about the origin of human beings. . (3 Marks)

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(b) Discuss the benefits of the discovery of fire by early man. (12 Marks)

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o) (a) State reasons for the migrations of Eastern Bantu speakers into Kenya by 1900A.D. (5 Marks)

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b) Discuss the results of the migration and settlement of the Eastern Bantu into Kenya by 1900 A.D. (10 marks)

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p) (a) Why were the Portuguese able to control the Kenyan Coast between 1500 and 1700 A.D. (3 Marks)

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(b) Describe the results of the Portuguese rule along the Kenyan Coast. (12 Marks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

q) (a) What were the economic activities of the people of the Asante Empire? (3 Marks)

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(b) Describe the political organization of the Asante Empire during the 10th Century (12 Marks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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SECTION C
ANSWER ALL THE QUESTIONS IN THIS SECTION.

r) (a) State five values of good citizenship. . (5 Marks)

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(b) Explain five factors that promote national unity in Kenya. (10 Marks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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s) b) Mention three stages of the constitution making process in Kenya. (3 Marks)

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(a) Discuss six features of the independence constitution of Kenya? (12Marks)

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2. UFAHAMU

Soma makala ya ifuatayo ki sha ujibu maswali.

Mabadiliko ya hali ya anga ni suala nyeti katika ulimwengu mzima. Suala hili sasa limetoa msukumo wa kulazimu kupanua nafasi ya uhifadhi wa mazingira .

Kwa sasa, ni bayana kuwa waja wakiendelea na mtindo wa maisha ya kibepari ya kutumia mali asili kwa ulafi wa kukidhi tu haja zao bila kujali maslahi ya wengi, basi dunia itahiliki hatimaye.Lazima tufahamu fika kuwa tunapaswa kutumia mazingira yetu kwa manufaa ya leo na kwa vizazi vya kesho.

Tayari athari za mabadiliko ya hewa yameanza kuathiri kila sehemu ya nchi yetu ya Kenya. Mvua hainyeshi jinsi ilivyokuwa awali, kilimo kinafeli kwa sababu ya kuzidi kwa kiangazi, maelfu ya mifugo wamekufa kwa kukosa malisho na maji. Jamii za wafugaji sasa zinakosa lishe bora kwa sababu ya dhiki na ufukara. Bei za bidhaa za kimsingi zimepanda mijini na mshambani kutokana na ukame ulioko sehemu nyingi. Isitoshe chemchemi za maji zinapotea huku mito ikikauka, wanyama pori wanakufa kwa njaa na kiu, makabiliano kati ya binadamu na wanyama pori yameongezeka, nao ufukara unaongezeka kila siku miongoni mwa umma. Hali hii sasa inachangia kuzorota kwa usalama hasa katika sehemu kame. Kuna visa vingi vya kuibiana mifugo na kubishiana chemchemi za maji na mali asli. Asilimia kubwa ya mito imekauka, chemchemi za maji zinapotea na vinamisi vya milima ya taifa havipo tena kutokana na uharibifu wa misitu na utumiaji mbaya wa malisalisi.

Ndiyo maana hutajasita kukariri kuwa mabadiliko ya hali ya anga ni mtikisiko wa kitaifa kwani ni hali ya hatari na kuwa kila mtu ana jukumu kujitahidi kiasi cha uwezo wake kuchangia uhifadhi wa mazingira .Mvua ikinyesha tupande miti, tuhifadhi chemchemi za maji na sehemu za unyevunyevu tulinde mito na maziwa yetu;tulime huku tukihifadhi udongo wetu,tufuge ,si kwa haja ya kuwa na mifugo wengi bali kwa kukidhi mahitaji na pia kulinda mazingira;tujitayarishe kuhifadhi maji ya mvua kwa ajili ya matumizi ya nyumbani na kilimo tuzidishe juhudi za kupanda mimea mbalimbali ya chakula huku pia tukifufua ile ya kienyeji.

Hatakati za kupambana kuhifadhi msitu wa Mau,ambao ni chanzo kikubwa zaidi cha maji na mito nchini na hata Afrika Mashariki zinajulikana .Kutokana na vitendo vya ulafi wa viongozi wetu msitu huu umevamiwa na kuharibiwa na hata unatishia maisha ya mito, maziwa, mbuga za kuhifadhi wanyama pori na mamilioni ya watu wanaotegemea msitu huu kwa njia moja au nyingine.Tunatambua kwamba juhudi nyingi zinafanywa na serikali kutokana na shinikizo za wa wakereketwa na wadau wa mazingira .Lakini lazima serikali itumie uwezo wake wote kulinda misitu ya Mau,Mlima Kenya,mlima Elgon na misitu mingine kwa jumla.Tusipuuze misitu na mazingira kwa sababu ya siasa duni.

Serikali haifai kuachiwajukumu la kulinda misitu pekee bali wananchi pia wanafaa wajitume kwani mazingira yanahusu uhai wa kila mmoja wetu.Kuntu umoja ni nguvu utengano ni udhaifu.Ndiyo maana tunachukua fursa hii kuwapongeza wakazi wa Malava katika kauti ya Kakamega ambao hivi majuzi walijitokeza mzomzo kupinga uharibifu wa msitu huo na kuungana pamoja kupanda takriban miche hamsini elfu.watu waharibifu wasiruhusiwe kuangamiza misitu , mazingira, mandhari na masiha kule Malava.

Serikali pia inapaswa kutenga hela kulinda misitu inayofunika milima.Milima ya taifa ni mandhari yanayopendeza nchini na lazima kila juhudi za kulinda uhai katika milima hii zifanye .Ni

jukumu la maafisa wa ardhi ,wa mazingira na wa misitu kutoa ushauri kwa serikali kwamba kuna hatari ya misitu kumalizwa na watu wabinafsi.Sheria ihimizwe na wananchi wahamasishwe huhusu umuhimu wa kulinda na kuimarisha mazingira.

Maswali

- a) Toa kichwa mwafaka kwa taarifa hii. AI 1
- b) Mabadiliko ya hali ya anga husababishwa na nini? AI 2
- c) Toa athari tatu tatu zinazosababishwa na kubadilika kwa hali ya anga. AI 3
- d) Kwa nini mwandishi ansema hatasita kukariri kuhusu hali ya hatari? AI 3
- e) Ni sababu gani zilichangia kuharibiwa kwa msitu wa Mau? AI 1
- f) Eleza sababu za mwandishi kusema umoja ni nguvu utengano ni udhaifu. AI 1
- g) Nini kiini cha kuzuia uharibifu wa msitu wa Malava? AI 2
- h) Eleza maana ya vifungu vifuatayo kama vilivyotumiwa katika taarifa hii. AI 2
33. Vizazi vya kesho

34. Mtikisiko wa taifa

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3. MATUMIZI YA LUGHA

- Andika neno lenye sauti zifuatazo . al 2

Kimadende, irabu ya nyuma juu, kitambaza, irabu ya kati chini.

- (a) Mofimu ni nini? Al 2

(b) Ainisha mofimu katika neno lifuatalo. aingiapo. Al 2

- Andika neno lenye muundo ufuatao.

KKIKKKI AL 2

- Tumia kirejeshi cha mwisho kuandika sentensi ifuatyo.

Watoto wanaochezea pale ni wangu upya. Al 2

- Tunga sentensi mbili kutofautisha kitenzi chuma. Al 2

- Maneno yafuatayo yamo katika ngeli zipi (al 2)

i) Karatasi

ii.Nyangumi

- Onyesha aina za maneno yaliyopigiwa mstari

f. Mwalimu msichana alienda Mombasa. AI 2

g. Alichezewa na watoto wabaya sana.

- Kirai ni nini? AI 2

- Geuza sentensi ifutayo iwe katika hali ya ukubwa wingi. AI 2
Mtoto alimkamata mbuzi mwingine .

- Andika kinyume cha: al 2
Jana walianika nguo za mvulana huyo.

- Unda nomino kutokana na maneno yafuatayo. AI 2

f. Mwalimu

g. Mwandishi

- Yakinisha al 2
Wasiposoma kwa bidii hawatapita mtihani huo.

- Pambanua sentensi ifuatayo kwa kielezo cha mstari. Al 2

Huyo ni mtoto mzuri sana.

- “Tutaanza kulima kesho,” ,mama alimwambia mwanawe. Andika katika usemi wa taarifa. Al 2

- Eleza matumizi mawili ya mshazari. Al 2

- Tunga sentensi yenye muundo ufuatao.
Nomino ya dhahania ,kivumishi kimilikishi, kitenzi halisi na kielezi. Al 2

- Tambua vipashio vya lugha ukianzia na cha kiwango cha juu kisha uvitiolee mifano. Al 4

- Andika kwa wingi al 2
Duka lililofunguliwa asubuhi lilifungwa magharibi.

4. ISIMU JAMII

AL 10

Taja na ueleze sifa za sajili ya kituo cha polisi

5. FASIHI SIMULIZI

h) Andika umuhimu wa nyiso katika jamii. **Al 5**

i) Eleza sifa za maigizo. **Al 5**

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j) Tambua dhima ya mighani katika jamii. AI 5

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FORM 3 TERM 1 OPENER

MATHEMATICS

NAME.....ADM NO.....CLASS.....

SECTION 1 (50 marks)

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

1. Evaluate (3 marks)

$$\frac{\frac{1}{2} \text{ of } 18 \div -3 + 2\frac{1}{2} \times \frac{3}{-5}}{\frac{1}{2} + 3\frac{3}{4} \div \frac{3}{4}}$$

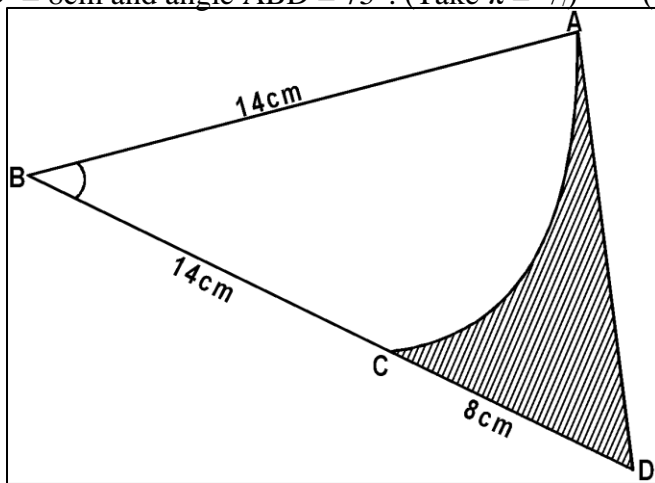
2. Solve the following without using mathematical tables or calculator. (3 marks)

$$\frac{3600}{\sqrt[3]{27000}}$$

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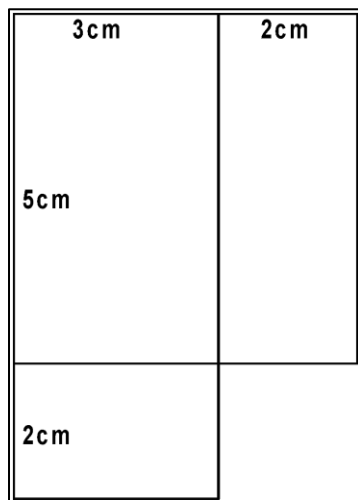
3. A square based brass plate in 4mm high and has a mass of 1.05kg. The density of the brass is 4.2g/cm^3 , calculate the length of the plate in centimeters. (3 marks)

4. Calculate the area of the shaded region given that AC is an arc of a circle centre B. $AB = BC = 14\text{cm}$. $CD = 8\text{cm}$ and angle $ABD = 75^\circ$. (Take $\pi = \frac{22}{7}$) (4 marks)



5. A milk vendor bought 20 litres of milk at shs 15 per litre and added 5 litres of water to the milk. If he sold the mixture at shs 18 per litre, what was his percentage profit?
(3 marks)

6. Complete the figure below so as to make the net of a cuboid. Hence determine the surface area of the cuboid.
(4 marks)



7. Solve for x in the equation.
(3 marks)

$$125^{(x+1)} + 5^{3x} = 630$$

8. Simplify $\frac{6x^2 - 8xy + 2y^2}{18x^2 - 2y^2}$ (3 marks)

9. A man walks directly from point A towards the foot of a tall building 240m away. After covering 180m, he observes that the angle of elevation of the top of the building is 45° . Determine the angle of elevation of the top of the building from A. (3 marks)

$$\frac{6x^3 - 8x^2y + 2xy^2}{18x^3 - 2xy^2}$$

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10. In a regular polygon, the size of an interior angle is 20° more than three times the size of its exterior angle. Find the number of sides in this polygon. (3 marks)

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

	Buying (Ksh)	Selling (Ksh)
1 Euro	147.56	148.00
1 Us Dollar	74.22	74.50

An American arrived in Kenya with 20,000 Euros. He converted all the Euros into Kenyan Shillings at the bank He spent Ksh 2510200 while in Kenya and converted the remaining Kenya shillings into US Dollars at the bank. Find the amount in dollars that he received.

(3 marks)

12. Solve the following inequalities and represent the solution on a single number line. 3 –

$$2x < 5$$

$$4 - 3x \geq -8$$

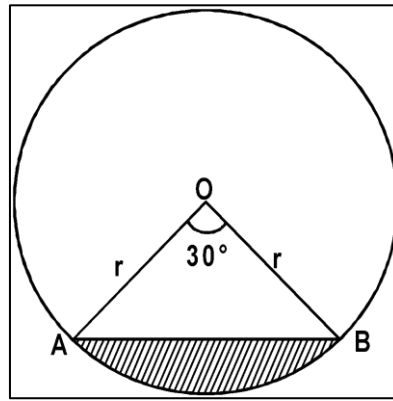
(3 marks)

13. A cylinder of radius 14cm contains water. A metal solid cone of base radius 7cm and height 18cm is submerged into the water. Find the change in height of the water level in the cylinder.

(4 marks)

14. The figure below show a circle centre O. Chord AB subtends 30° at the centre. If the area of the minor segment is 5.25cm^2 , find the radius of the circle. (3 marks)

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15. A point $(-5, 4)$ is mapped onto $(-1, -1)$ by a translation. Find the image of $(-4, 5)$ under the same translation. (2 marks)

16. Evaluate using Logarithms

(4mks)

$$\frac{(0.0021 + 0.0035)^{\frac{1}{2}}}{1.38 \times 27.42}$$

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SECTION II (50 marks)

Answer only FIVE questions in this section in that spaces provided.

17. A matatu left Kibwezi at 7.00 am and travelled towards Nairobi at an average speed of 60km/hr. A car left Nairobi at 9.00am and travelled towards Kibwezi at an average speed of 80km/hr. The distance between the two towns is 324km.

Find:

- a) the time each vehicle arrive at their destination.

i) matatu

(2 marks)

ii) car

(2 marks)

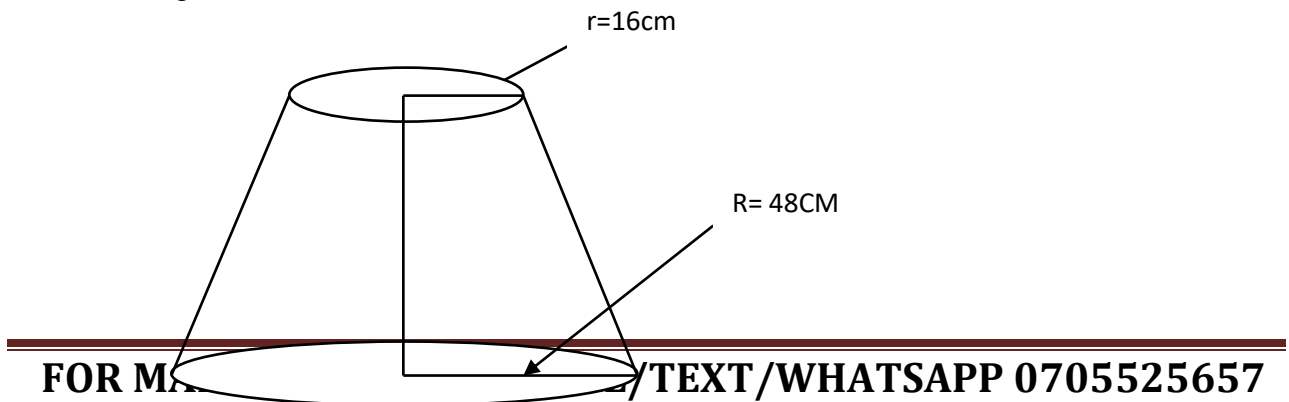
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b) i) the distance the matatu covered before the car started to move from Nairobi to Kibwezi. (1 mark)

ii) the time the two vehicles met on the way. (3 marks)

c) How far the car was from Kibwezi when they met. (2 marks)

18. The figure below represents a frustrum of a solid cone of base radius 48 cm and top radius 16cm. The height of the frustrum is 21cm (Taking $\pi = \frac{22}{7}$) calculate:



a) The height of the solid cone. (2 marks)

b) The volume of the solid frustum. (3 marks)

c) The total surface area of the frustum. (5 marks)

19. Towns B is 102km on bearing of 112° from town A. Town C is 94km on a bearing of 062° from town B. Town D is 073° from town A and 336° from town C.

- a) Using a scale of 1cm rep. 20km, draw a diagram to show the positions of towns A, B, C and D.
(4 marks)

b) Using the diagrams in (a) above determine

i) Bearing of town B from town D. (1 mark)

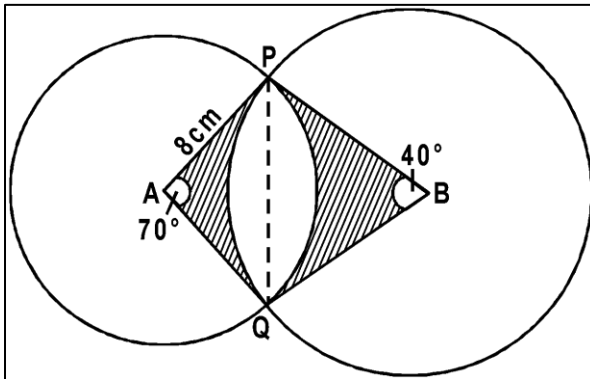
ii) Bearing of town A from town C. (1 mark)

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c) The distance AC and BD in km.

(4 marks)

20. The figure below shows two circles, centre A and B which intersect at point P and Q. Angle $PAQ = 70^\circ$ and angle $PBQ = 40^\circ$ and $PA = AQ = 8\text{cm}$



Use the diagram to calculate

a) PQ correct to 2 decimal places.

(2 marks)

b) PB correct to 2 decimal places.

(2 marks)

c) Area of the minor segment of the circle whose centre is A.

(2 marks)

d) Area of the shaded region.

(4 marks)

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21. A salesman sold 300 bags of maize to a retailer at Kshs .2000 each .He was given a commission of 3%.The salesman allowed a discount of 0.2% on the maize sold. This discount was deducted from his commission.

- Calculate

a) The discount allowed (2mks)

b) The net commission the salesman got (3mks)

(b)The retailer sold all the bags of maize at Ksh, 2400 each and paid Ksh 12000 for transport. Calculate the profit made by the retailer (3mks)

(c) In addition a value added tax (V.A.T) of 16 % was charged on the profit made by the retailer. Calculate the amount of tax collected. (2mks)

22. A line L passes through points $(-2, 3)$ and $(-1, 6)$ and is perpendicular to a line P at $(-1, 6)$.

h. Find the equation of L. (2 mks)

i. Find the equation of P in the form $ax + by = c$, where a, b and c are constant. (2 mks)

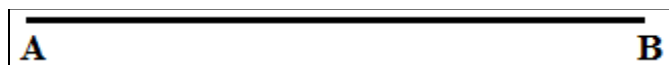
j. Given that another line Q is parallel to L and passes through point $(1, 2)$ find the x and y intercepts of Q. (3 mks)

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k. Find the point of intersection of lines P and Q.

(3 mks)

23. (a) Using a ruler and a pair of compasses only, construct triangle ABC and ABD on either side of line AB below, such that; $\angle DAB = \angle DBA = \angle ABC = \angle BAC = 60^\circ$ (3mks)



(b)(i) Name the quadrilateral AD BC

(1mk)

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(ii) Construct a circle touching all the sides of the quadrilateral

(3mks)

(d) Calculate, correct to one decimal place, the area of the region enclosed by the quadrilateral but outside the circle. (3mks)

24. a) On the Cartesian plane below, draw the quadrilateral PQRS with vertices.
 $P(4, 6)$, $Q(6, 3)$, $R(4, 4)$ and $S(2, 3)$ (1 mark)



- b) Draw $P'Q'R'S'$ the image of PQRS under the transformation defined by the translation vector
Write down the coordinates of $P'Q'R'S'$. (2 marks)
- c) $P''Q''R''S''$ is the image $P'Q'R'S'$ when reflected in the line $y = 1$. On the same plane, draw $P''Q''R''S''$
(2 marks)
- d) Draw $P'''Q'''R'''S'''$ the image $P''Q''R''S''$ when reflected in the line $y - x = 0$ (2 marks)
- e) Find by construction, the centre of the rotation the maps $P'''Q'''R'''S'''$ onto PQRS and hence

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determine the coordinates of the centre of the rotation and the angle of the rotation. (3 marks)

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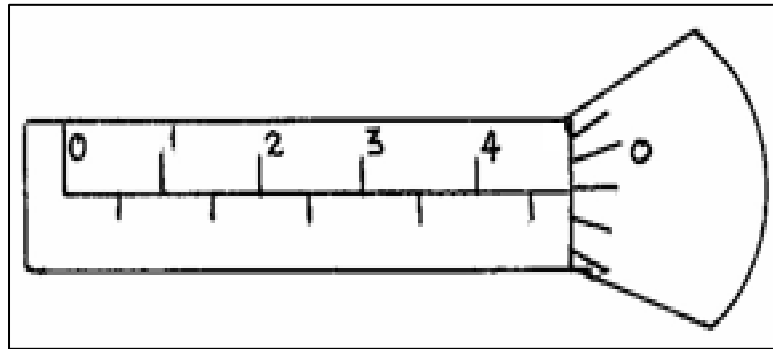
FORM 3 TERM 1 OPENER

PHYSICS

NAME.....ADM NO.....CLASS.....

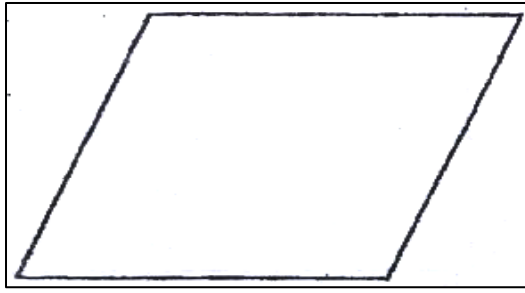
SECTION A (25 MARKS)

1. The diagram below shows a micrometer screw gauge used by a student to measure the thickness of a wire. If it has a zero error of $+0.06\text{mm}$, what is the actual thickness of the wire? (2mks)



2. Give a reason why a thick glass bottle cracks when boiling water is suddenly poured inside it. (1mk)
3. Other than temperature state **one** other factor that affects the surface tension of water. (1mk)
4. State how heat losses by convection and radiation are minimized in a thermos flask. (2mks)
5. Figure below shows a uniform cardboard in the shape of parallelogram

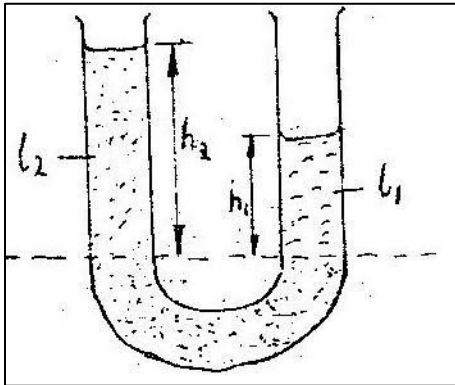
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Locate the centre of gravity of the cardboard.

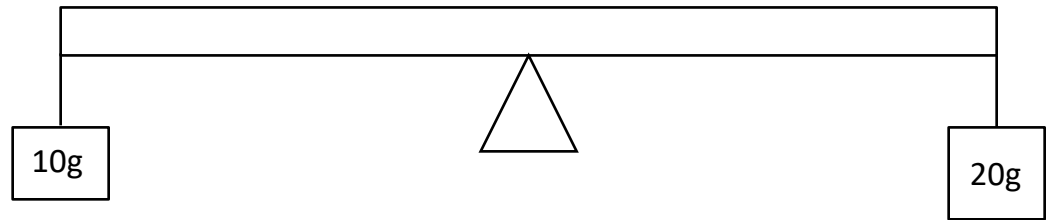
(1mk)

6. Figure below shows a U tube containing two liquids L_1 and L_2 of densities 1.8 gcm^{-3} and 0.8 gcm^{-3} respectively in equilibrium. Given that $h_2 = 8 \text{ cm}$ determine the value of h_1 .(3mks)



7. An oil drop of volume 0.2 cm^3 spreads on a water surface to form a patch of diameter 30 cm . determine the diameter of an oil molecule. (3 Marks)

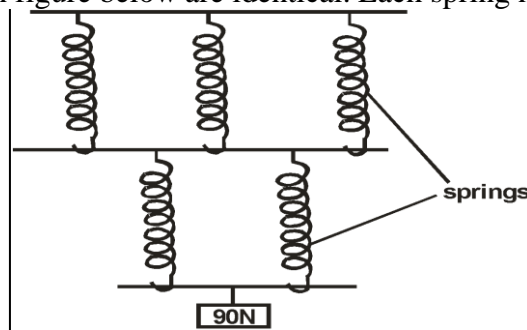
8. A uniform metre rule of negligible mass is balanced by suspending a 10g mass and a 20g mass on its ends as shown **below**.



Determine the position of the pivot.

(3 marks)

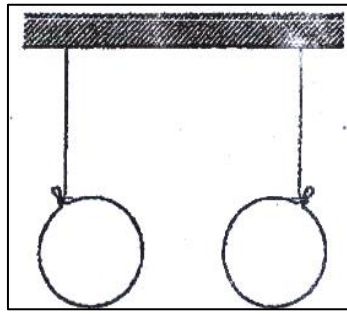
9. The spiral springs shown in figure below are identical. Each spring has a spring constant $k = 300\text{N/m}$



Determine the total extension of the system (take the weight of the cross bars to be negligible)

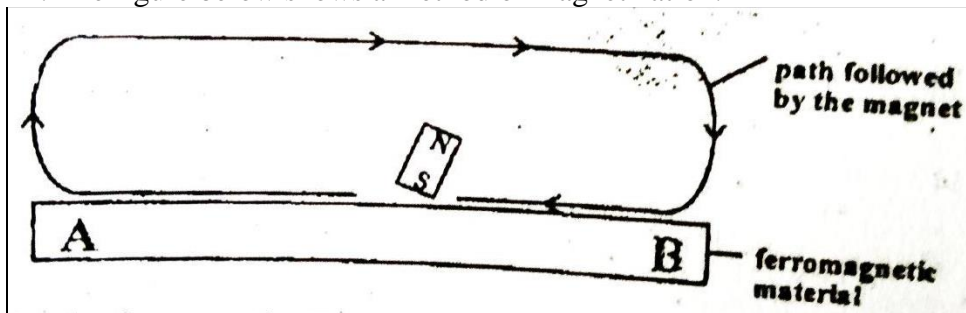
(3 mks)

10. Figure below shows two inflated balloons hanging vertically on light threads.



When a stream of air is blown in the space between the balloons, they are observed to move towards each other. Explain this observations (2mks)

11. The figure below shows a method of magnetization.



1. Name the method of magnetization.

(1 mk)

2. Name the polarity acquired by end B.

(1 mk)

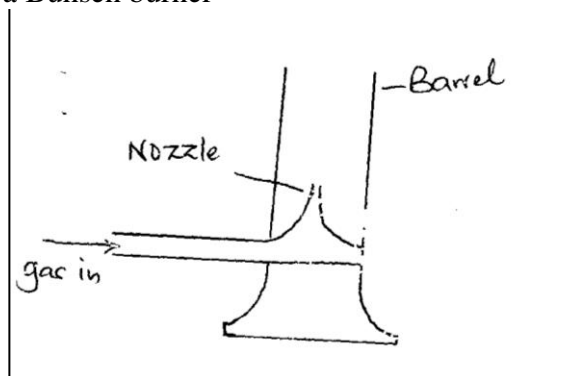
12. A car manufacturer wishes to increase the stability of acar he is designing. State two ways he can achieve this. (2 mks)

SECTION B (55 MARKS)

13. a) State Bernoulli's principle.

(1mk)

b) The diagram below shows a Bunsen burner



iv. Explain how the burner works

(3mks)

v. A pipe of radius 6cm is connected to another pipe of radius 9cm. If water flows through the wider pipe at a velocity of 2m/s, calculate;

v. Volume of water leaving the wider pipe per second ($\pi=3.142$)

(3mks)

vi. Velocity of water in the small pipe

(2mks)

c) Explain why it's dangerous to stand close to a busy highway

(2mks)

14. (a) State the basic law of charges.

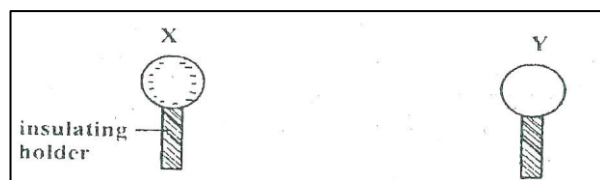
(1 mk)

(b) State **one** uses of an electroscope.

(1 mks)

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(c) A negatively charged sphere X is brought up to an identical uncharged sphere Y. the spheres do not touch.



Sphere Y is earthed by touching it with a wire and then detached. Sphere X moved away from sphere Y.

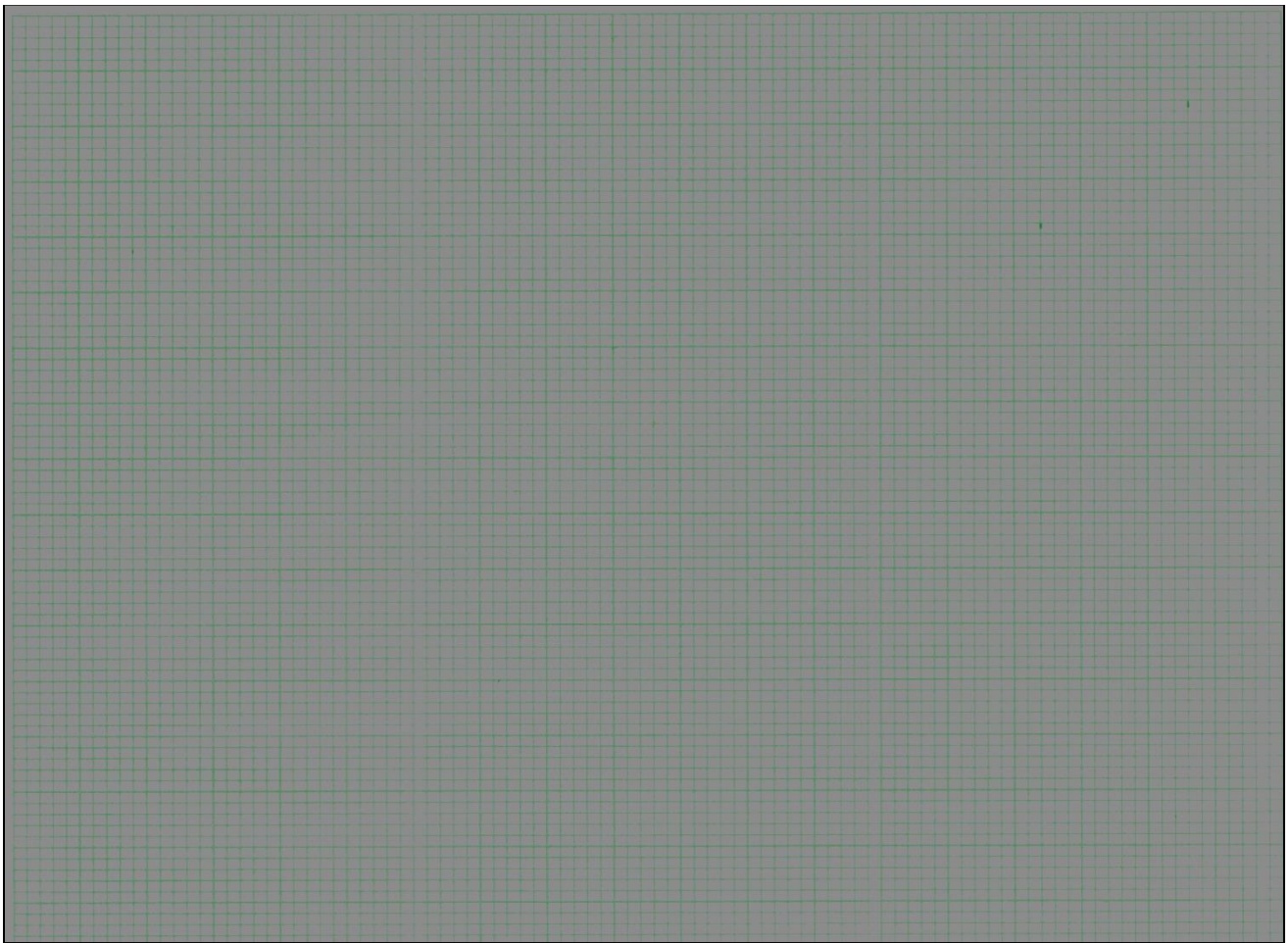
f) What is the purpose of the insulating holder? (1 mk)

g) State the final charge on sphere Y. (1 mk)

15. (a) State the difference between the principal focus of a convex mirror and that of the concave mirror. (1 mks)

(b) An object of height 2cm is placed 60cm in front of a concave mirror of focal length 20cm.

- Locate by scale drawing, the image formed. What is the image distance? (4 mks)



- State one characteristics of the image. (1 mk)
- Determine the magnification of the image. (1 mk)

16. a) The height of a mercury barometer at a particular place is 70cm. Given that the density of mercury is 13600kg/m^3 , determine;

j) The atmospheric pressure at the place in Pascal's. (3marks)

k) The height of a water barometer at the same place (density of water = 1 g/cm^3) (3marks)

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1) Give a reason why mercury is preferred as a barometric liquid. (1mk)

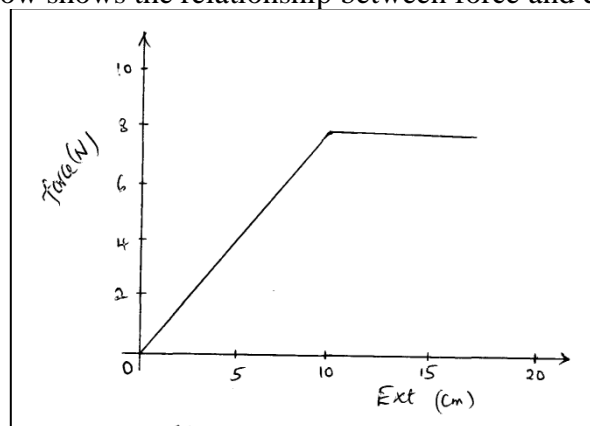
b) Calculate the minimum pressure a block of dimensions $3\text{cm} \times 10\text{cm} \times 15\text{cm}$ and mass 12kg could exert on a horizontal surface. (3mks)

17. a) State Hooke's law. (1mk)

b) An object of weight 20N attached at the end of a spring causes an extension of 0.5cm on the spring
1. Determine the spring constant (3mks)

m. Determine the weight of an object that would cause an extension of 0.86m when attached at the end of the same spring. (2mks)

c) One end of a piece of rubber band was fixed on a rigid support and the other end pulled with a varying force. The graph below shows the relationship between force and extension for the rubber band.



Using the graph determine

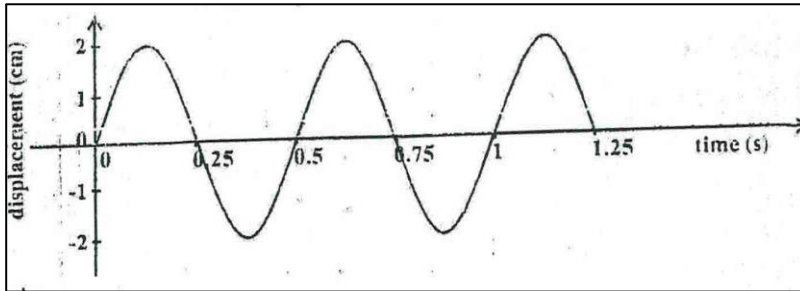
6. The stretching force at elastic limit (1mks)

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7. The elasticity constant of the rubber band (3mks)

8. Assuming two identical rubber bands were used instead of one and attached in series what would be the elasticity constant? (2mks)

18. The figure below shows how the displacement of a wave varies with time.



Determine the;
h. Amplitude

(1 mk)

i. Frequency of the wave.

(2 mks)

j. Wavelength given that the velocity of the wave is 60cm/s.

(2 mks)

19. a) Distinguish between primary and secondary cells. (1mks)

b)i) Define polarization with reference to a simple cell. (1mk)

k) State how polarization can be overcome in simple cells. (1mk)

c) A charge of 90 coulombs passes through a point in a circuit every one minute. Calculate the current through the point. (3marks)

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FORM 3 TERM 1 OPENER

CHEMISTRY

NAME.....ADM NO.....CLASS.....

ANSWER ALL THE QUESTIONS IN THE SPACES PROVIDED

1. The table below shows elements in the periodic table. Use it to answer the questions that follow. The letters are not the actual symbols of the elements.

								F
A	B		C		D		E	
G								H

a) i) Write the electron arrangement of elements; B and A(2mks)

ii) Write the formula of the compound formed between the elements B and E.(1mk)

b) Element K has atomic number 14. Indicate by use of tick () the position of this element in the table above(1mk).

c) i) The ionization energy of A is higher than that of G. Explain. (2mks)

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ii) The atomic radius of C is larger than that of D.(2mks)

iii) Compare the reactivity of elements A and B.
Explain your answer.(2mks)

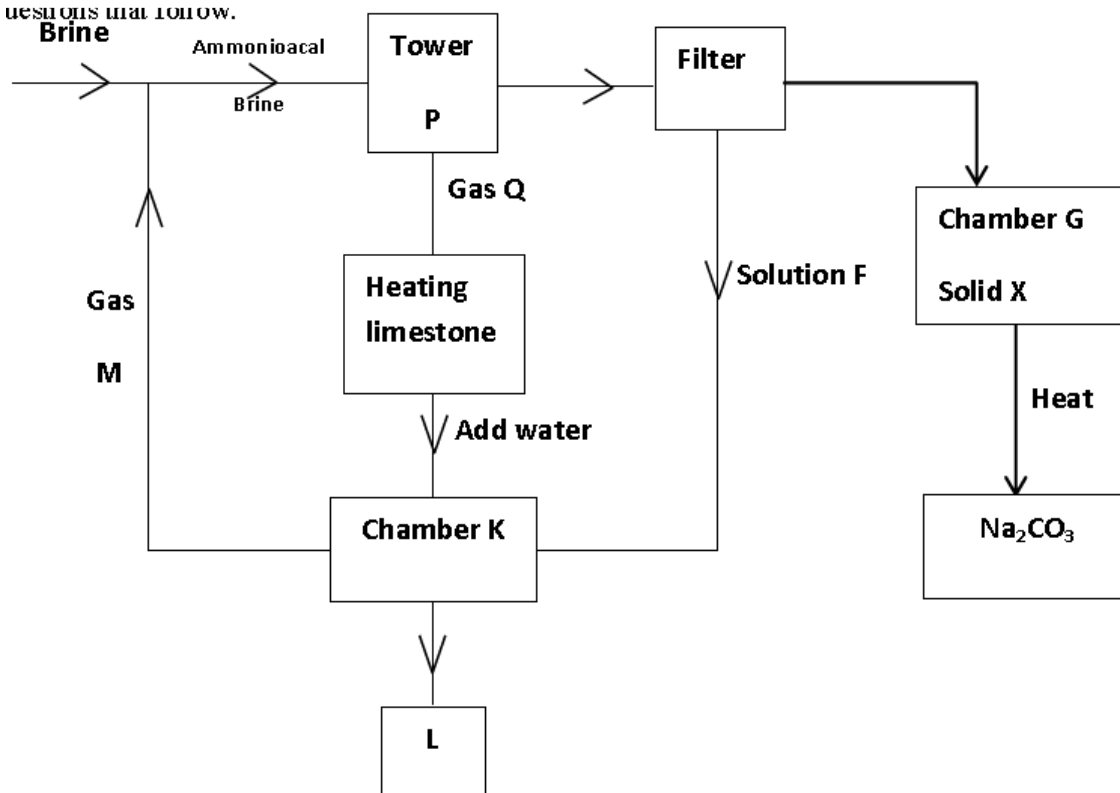
d) i) State the name of the group to which elements F and H belong. (1mk)

ii) Give one use of any of the elements of in group in d(i) above. (1mk)

e) The chloride of B is ionic, while the chloride of C is covalent. Explain this observation. (2mks)

2. The flow chart below is for the manufacture of sodium carbonate using Solvay process. Use it to answer the questions that follow.

QUESTIONS THAT FOLLOW.



(a) Name(3mks)

(i) Gas **M**.....

(ii) Solution **F**

(iii) Solid **X**

(iv) The product **L**.....

(b) Write an equation for the reaction in chamber **K**. (2mks)

(c) Name **two** raw materials used in Solvay process.(2mks)

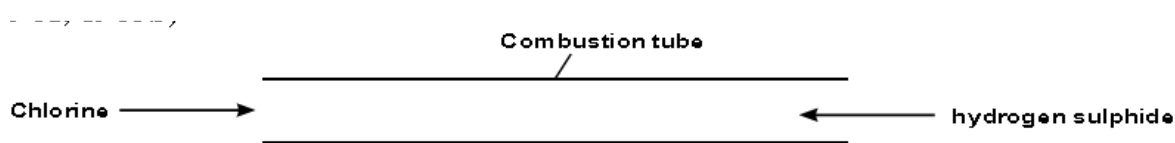
(d) (i) Name **one** substance recycled in Solvay process.(1mk)

(ii) Give **two** reasons why carbon (IV) oxide is used as fire extinguisher. (2mks)

(iii) Explain why lead carbonate is not reacted with dil. H_2SO_4 in preparation of carbon (IV) oxide in the laboratory. (2mks)

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

b) An experiment was carried out to compare the rates of diffusion of chlorine gas and hydrogen sulphide gas. (H=1, S=32, Cl=35.5)



i)What observation was made in the combustion tube? (1 mark)

ii)Indicate where the observation in (i) above would occur. (1 mark)

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iii) It takes 15 seconds for 45cm³ of chlorine to diffuse through the combustion tube. How long will it take 135cm³ of hydrogen sulphide to diffuse under similar conditions? (3 marks)

4. a) State Charles's law. (1 mark)

b) The table below shows the relationship between the volume of a fixed mass of a gas and its temperature (°C) at constant pressure.

Volume (cm ³)	30	32	34	37	39	41	43
Temperature (°C)	0	20	40	60	80	100	120
Temperature (K)							

i) Complete the table by filling the corresponding temperature in Kelvin. (3½ marks)

ii) Plot a graph of volume (cm³) on the vertical axis against temperature in Celsius on the Horizontal axis using a temperature range : -300°C to 120°C (3 marks)

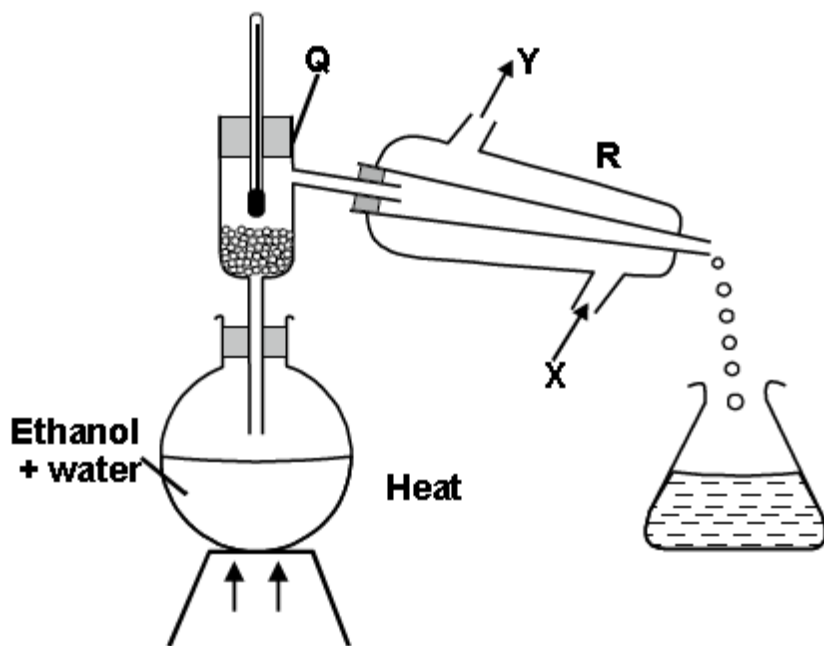
iii) Extrapolate the graph in (ii) above to cut the horizontal axis and read the temperature value. (1 mark)

iv) Determine from the graph, the volume of the gas when the temperature is -225°C. (1 mark)

c) A balloon contains 100cm³ of air at 25°C. The balloon was put outside in the sun where the temperature was 40°C. Calculate the new volume of air. (2½ marks)

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5. 1. The diagram below shows a set-up of apparatus used to separate a mixture of ethanol (B.P=78.0°C) and water (B.P = 100.0°C)



- a) Name the parts labelled Q and state its function. (2 marks)

- b) Name the apparatus R. (1 mark)

- c) At what point should apparatus R be connected with water? (1 mark)

- d) Name the distillate that was collected first. (1 mark)

- e) State the purpose of the thermometer. (1 mark)

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