FORM 3 SET 1 EXAM



ACCADEMIC EXCELLENCE IS A JOURNEY.

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SECTION A 30MKS

1. state two ways in which agriculture contribute directly to the development of industries
   2x ½ =2mks

2. list four features of rainfall a farmer should consider when deciding no crop to grow
   (4mks x ½=2mks.

3. state four reasons why tissue technology is encouraged in crop production.(2mks)

4. give four effect of low level of education and technology in Agriculture(2mks)

5. state any two problems caused by a hardpan which develop in sub-soil region within a soil profile.1mk

6. list two determinants of soil colour.1mk

7. list two crops that may be propagated by means of splits.1mk

8. Differentiate between intercropping and mixed cropping.2mks.

9. Mention four roles of calcium in crops.2mks.

10. Give four factors that influence the quality of water used in the farm. 2mks.

11. State four characteristics of good green manure plants. 2mks.

12. Outline four pest harvest practices carried out on crops after harvesting.2mks.

13. Give any 4 methods of breaking seed dormancy.2mks.

14. Differentiate between over sowing and under sowing of seeds in crop production.1mk.

15. Give any 4 importance of a Nursery in crop propagation.2mks.

16. State four reasons for cutting back in pyrethrum.2mks

17. Mention two advantages of using farm yard manure.1mk.

18. Give any four advantages of pruning in coffee.2mks.

SECTION B (SECTION 20MKS)

19. Study carefully the illustration below of a bag of fertilizer and answer the questions that follow.

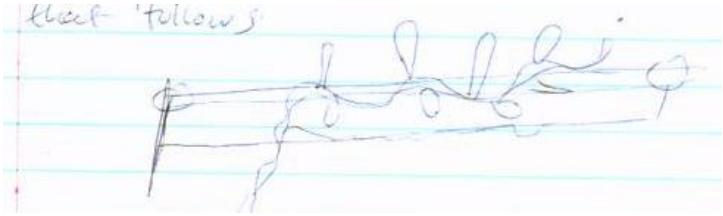


a) I) what do the figures on the diagram stand for 18 and 46. (1mk)

ii) What class of inorganic fertilizer does dap belong to? Why? 1mk

b) A farmer was advised to apply 250kg/ha of sulphate of ammonia while top dressing nappier grasss. Sulphate of ammonia contains 21% N calculate the amounts of nitrogen that he/she would apply in a two hectares field. 3mks.

20. The diagram below shows field practices in crop production. Use it to answer the questions that follows.



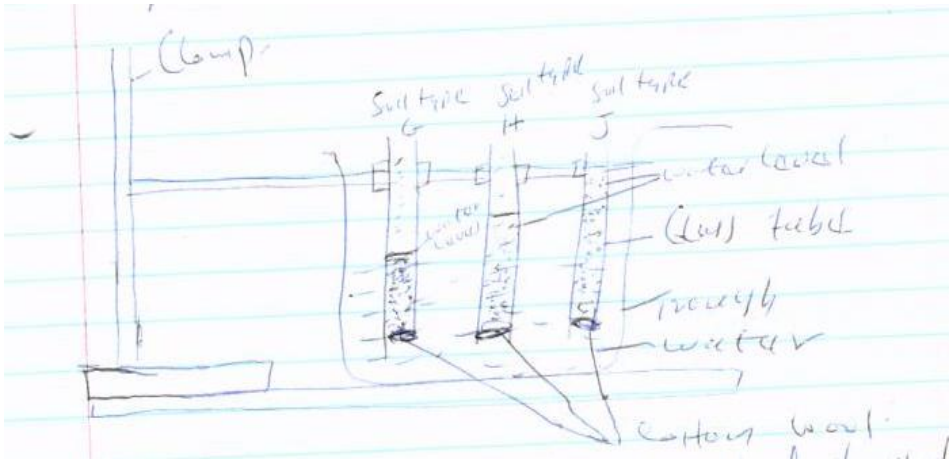
a) Identify the field practices above.1mk.

b. state two importances of the above practices.2mks.

c. state two other practices aimed at providing support to weak stemmed plants.2mks.

21. List three aspect of light that influence crop growth.3mks.

b) The diagram below shows an experiment set up using soil type G, H and J. observations were made after 24hrs, study the diagram and answer the questions that follows.



I. What is the experiment represented above designed to study? 1mk.

II. Name the three types of soil G,H and J. (3mks)

III. What is the characteristics texture of soil type G and J 2mks.

IV. State how a farmer would improve the structure of soil type G.

SECTION C 40MKS. ANSWER ANY TWO QUESTIONS.

22a) describe factors influencing spacing of crops.6mks.

b. discuss the advantages of crop rotation in crop production.12mks.

c. name two methods of preparing compost manure.2mks.

23. a. describes production of kales under the following subheadings.

nursery preparation. 4mks.

b.establishiment in the nursery.3mks.

c. management of seedlings in the nursery.6mks.

d. transplanting of seedlings.7mks.

24. Describe importance of Drainage as a land Reclamation method.6mks.

b. discuss 6 characteristics of fertile soil.6mks.

c. explain any 4 factors to consider in choosing seedrates. 8mks.

AGRICULTURE PAPER 2

FORM 3

SECTION A (30MKS) ANSWER ALL THE QUESTIONS.

1. State two disadvantages of artificial incubation of eggs. (2mks)

2. List four desirable of a good ewe for breeding should have. (2mks)

3. What is progeny testing as used in the selection of livestock? (1mk)

4. State two reasons for docking sheep. (1mk)

5. Name any four dual purpose breeds of cattle. (2mks)

6. Give 2 reasons for culling in cattle production (1mk)

7. Give two types of ticks that attack livestock. (2mks)

8. Give three causes of nutritional diseases. (3mks)

9. State two characteristics of the bacteria in camel. (1mk)

10. Name two types of dead fences. (1mk)

11. A) Give three factors to be considered when siting poultry house. (1 ½ mks)

b) Define the term breeding. (1mk)

c) Name two brooding methods in poultry. (2mks)

12. Define pre-disposing factors. (1mk)

B. State four pre-disposing factors of scours in calves. (2mks)

13. Give four symptoms of internal parasites in livestock. (2mks)

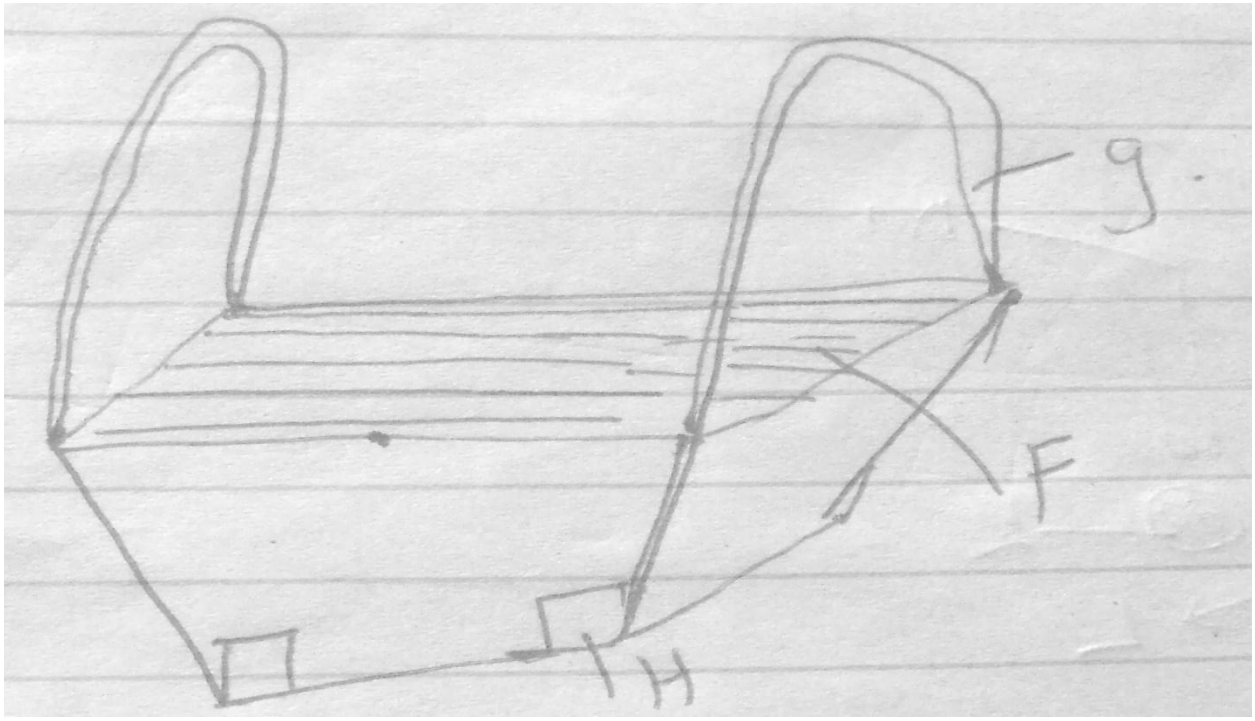
14. State two uses of footbath in a cattle dip. (1mk)

15. State five signs of fawowing in sows. (2 ½ mks)

16. Differentiate between terms apiculture and aquaculture as used in Agriculture. (1mk)

SECTION B (Answer all the questions.) 20mks)

17. Study the illustration below and use it to answer the questions that follow.



a) Name the type of beehive shown. (1mk)

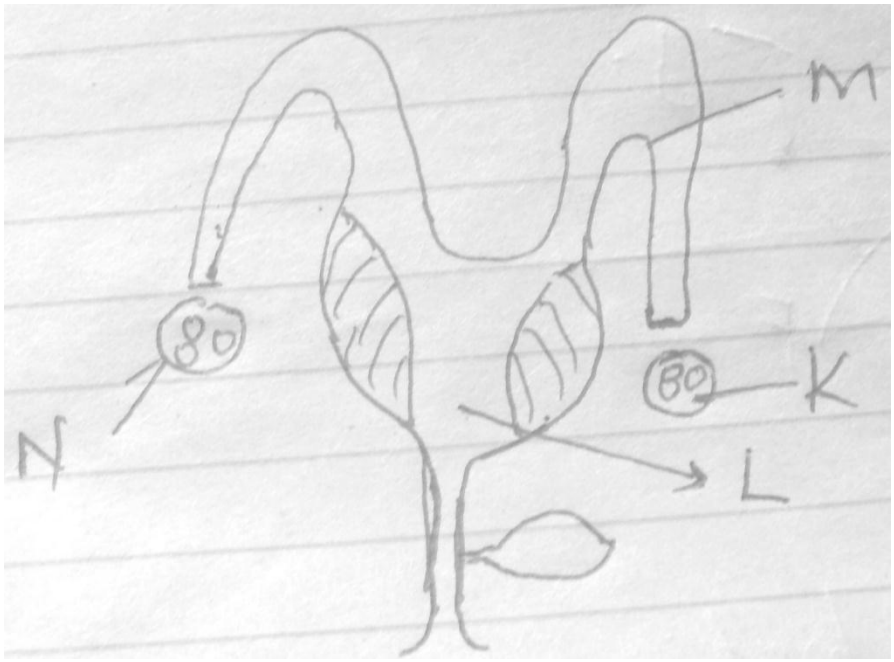
b) Give names of other two types of hives. (1mk)

c) Name the parts labeled F,G AND H. (3mks)

18. Define the term digestibility. (1mk)

b. Using the person's square method compute how much maize meal (8%cp) and soyabean meal 43%cp would be required to prepare 100kg of the mixture containing 15% cp. (4mks)

19. Study the diagram below of a reproductive system of a cow.

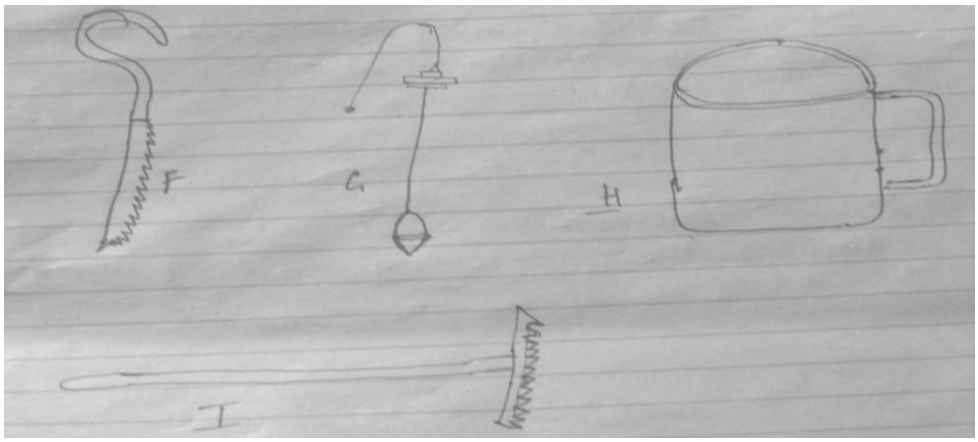


a) Name the parts labeled K and L. (1mk)

b) Give the use of the parts M and N. (2mks)

20. State any four cultural methods of controlling ticks. (2mks)

21. Diagrams F, G, H and J illustrate farm tools.



a) Identify the tools F, G, H and I. (2mks)

b) Give the function of each of the above tools. (2)

c) Indicate two maintenance practices on tool H. (1mk)

SECTION C (Answer any two questions) 40mks.

22. Outline six advantages of artificial insemination in dairy cattle management. (6mks)

b. Explain seven factors to consider when selecting materials for constructing a calf pen. (14mks)

23. Describe the importance of livestock in the farm. (10mks)

b. Outline five signs of ill health in livestock. (5mks)

c. List any five desirable features of rabbit hatch. (5mks)

24.a) Describe the management practices that should be carried out during rearing of a dairy calf from birth to weaning. (12mks)

c) State eight causes of calving internal. (8mks)

1. Sate two ways in which the rough endoplasmic reticulum is adapted to its function.(2mks)

2. State three characteristics that are used to divide phylum arthropoda into classes.(3mks)

3. Distinguish between diffusion and active transport.(2mks)

4. An organism was found to have the dental formula:
   I $\frac{1}{1}$, $C\frac{0}{0}$ $PM\frac{3}{2}$,$m\frac{4}{4.}$

   i. Calculate the total number of teeth in the organism.(1mk)

   ii. Giving a reason ,suggest the mode of feeding of the organism.(2mks)

. a)Give a reason for the biconcave shape of the red blood cells.(1mk)

b) Name the enzyme that speeds up loading of carbon (iv) oxide in the red blood cells.(1mk)

6. a. Name the vitamin, an enzyme and a mineral element that are involved in blood clotting.(1½mks)

i. Vitamin

ii.Enzyme;

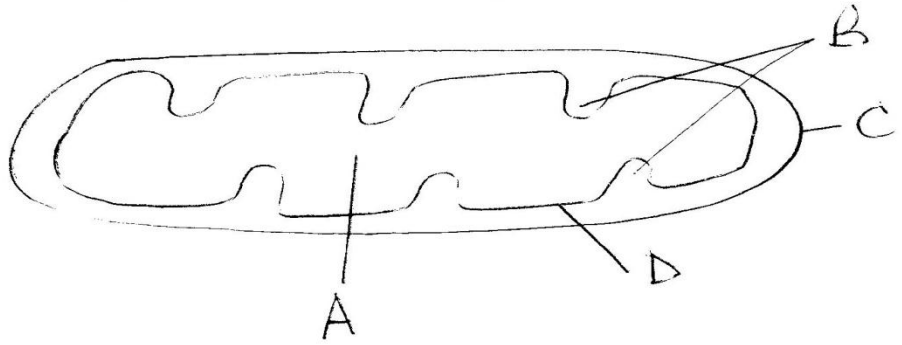
iii.Mineral element

b.Differenciate between heparin and histamine.(2mks)

7. a.Name the part of the brain that influences breathing rate.(1mk)

b.State two advantages of breathing through the nostrils instead of through the mouth in mammals.(2mks).

8. The diagram below resents a cell organelle.



a. Name the main product of the organelle's activity.(½mk)

b. Name the parts labeled A,B , C and D.(2mks)

A-

B-

C-

D-

9. a.State the cause of diabetes mellitus.(1mk)

b.How may the disease in (9)(a) above be tested in a School laboratory?(2mks)

10. a.Distinguish between ecological niche and habitat.(2mks)

b.State two reasons why plants are included in a fish pond other than provision of food.(2mks)

11. State the functions of the following parts of a light microscope.

a) Diaphragm.(1mk)

b) Objective lenses.(1mk)

12. a.Define the term respiratory quotient.(1mk)

b (i) After respiration of a certain substrate $50cm^3$ of carbon (iv) oxide was produced and 70cm Oxygen was used .Calculate the respiratory quotient of the substrate.(1mk)

ii.Name the substrate in (12) (c) above. (1mk)

13. (a) If a person who lives at low attitude moves to a higher attitude, changes occurring his blood consumption. Name two of these changes.(2mks)

c. State the importance of these changes.(1mk)

14. How are leaves of submerged plants adapted for photosynthesis? (2mks)

15. Name the causative agents of the diseases below:-

a. Anthrax (1mk)

b.Gonorrhea (1mk)

C.Whooping cough(1mk)

16. Explain why plants in waterlogged soils dry up.(3mks)

17.a) Name the antigens that determine human blood groups(2mks)

c) Explain why people who have blood group AB are called universal recipients.(2mks)

18. Name three processes in the human body in which homeostasis is involved.(3mks)

19. a) How are root hairs adapted to their function?(2mks)

b) Name the process by which food is transported in plants.(1mk)

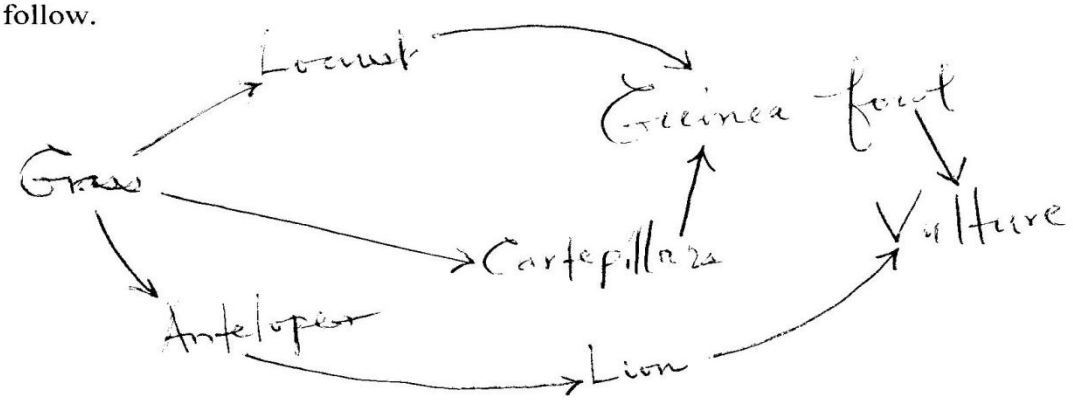
20. State the significance of the following adaptations in a leaf.

a. Thinness (1mk)

b.Presence of airspaces(1mk)

c.Stomata (1mk)

21. Study the food web below representing a certain ecosystem and use it to answer the questions that follow.



a. State the trophic level occupied by the lion in the food web.(1mk)

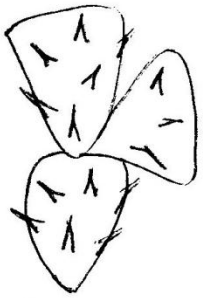
b. Write down a food chain in which the vulture is a tertiary consumer(1mk)

c. i.Name the organism with the largest biomass(1mk)

Ii.Give two reasons for your answer in (c)(i) above.(2mks)

22. Explain how temperature affects an enzyme controlled reaction.(3mks)

23. The diagram below represents a certain plant.



a. What is the likely habitat of the plant?(1mk)

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

24.The number of stomata on the lower and upper surfaces of two leaves from plant species x and y were counted under the field of view of a light microscope. The results were as shown below.

Leaf	Number of stomata	
	Upper surface	Lower surface
x	4	12
x	20	23

a. Which of the two leaves would be expected to have a lower rate of transpiration?(1mk)

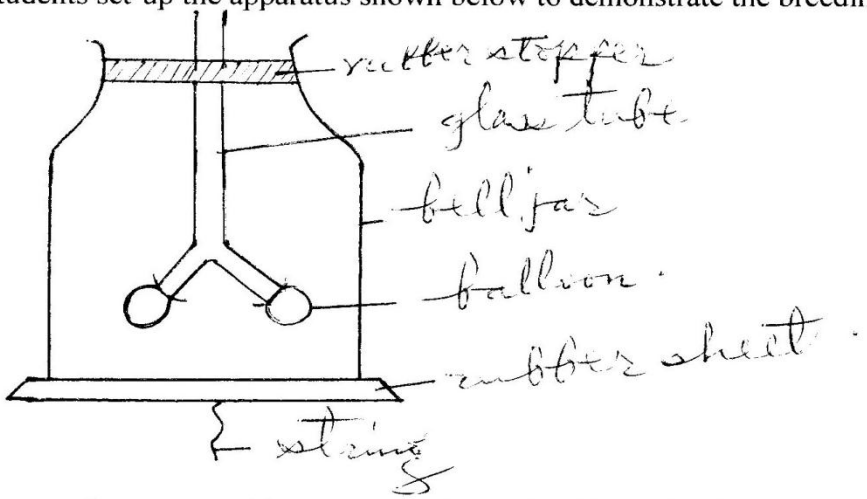
b. Give a reason for your answer in (a) above.(1mk)

25.Construct a dichotomous key for the animals listed below. Part of the key has already been constructed.Bird,Snake,Lizard,Hyena.(4mks)

a. Animal a mammal,…….. Hyena.
b. Animal not a mammal….. go to R.

26. Other than transport of substances, state two other functions of mammalian blood.(2mks)

27.Some students set-up the apparatus shown below to demonstrate the breeding mechanism in a mammal.



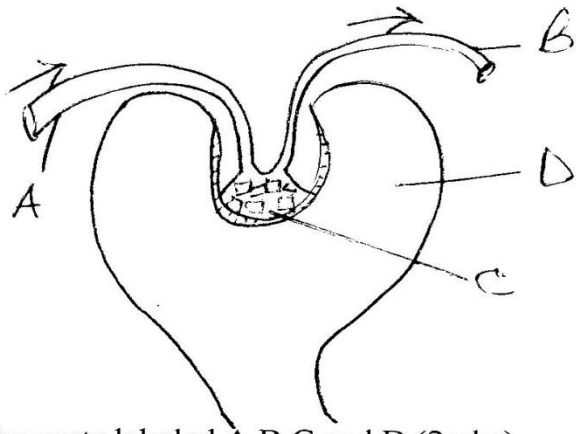
a. What structure in a mammal is represented by each of the following?

i. The glass tube.(1mk)

ii.The ballons.(1mk)

iii.The bell jar.(1mk)

28.The diagram shown below represents a part of the nephron.Use it to answer the questions that follow .



a. I)Name the parts labeled A,B,C and D.(2mks)

A-

B-

C-

D-

ii.Name the fluids found in C and D.(2mks)

C-

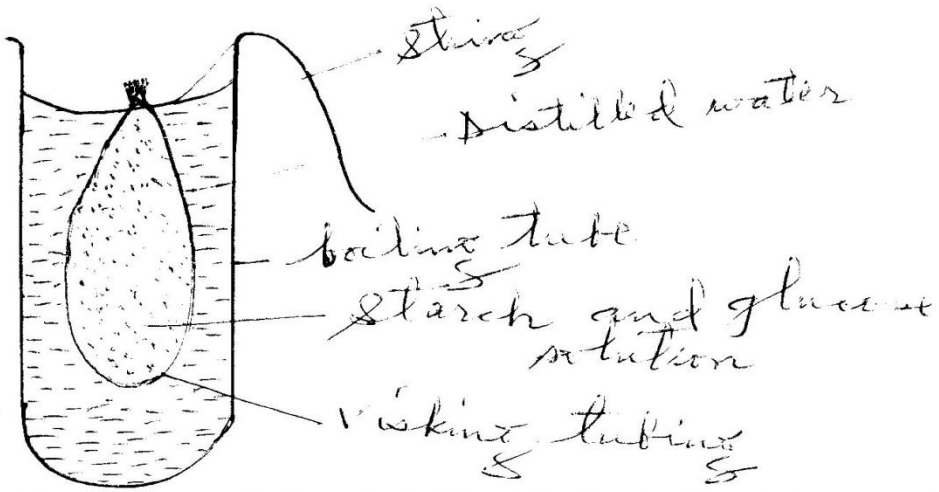
D-

iii.Name the process by which the fluid found in D is formed(1mk)

iv.Mention one difference in the composition of the fluids in C and D.(1mk)

29. Apart from having many features in common, state another characteristic of members of a Species (1mk)

30.An experimental set-up shown below was used to investigate a certain process.



After 20minutes, a student tested the sample from the boiling tube for starch and glucose and recorded the results as shown in the table below.

	Start	After 20 minutes
Start	Absent	Absent
Glucose	Absent	Present

a. Explain the presence of glucose in the water sample.(2mks)

b. What change occurred in the volume of liquid in :

i. The boiling tube(1mk)

ii. The visking tube(1mk)

31.State and explain how respiratory surfaces are adapted for gaseous exchange.(3mks)

32.The equation below shows a process that takes place in mammals.

Amino acids ⟶ Organic Compound + Urea

a. Identify the process(1mk)

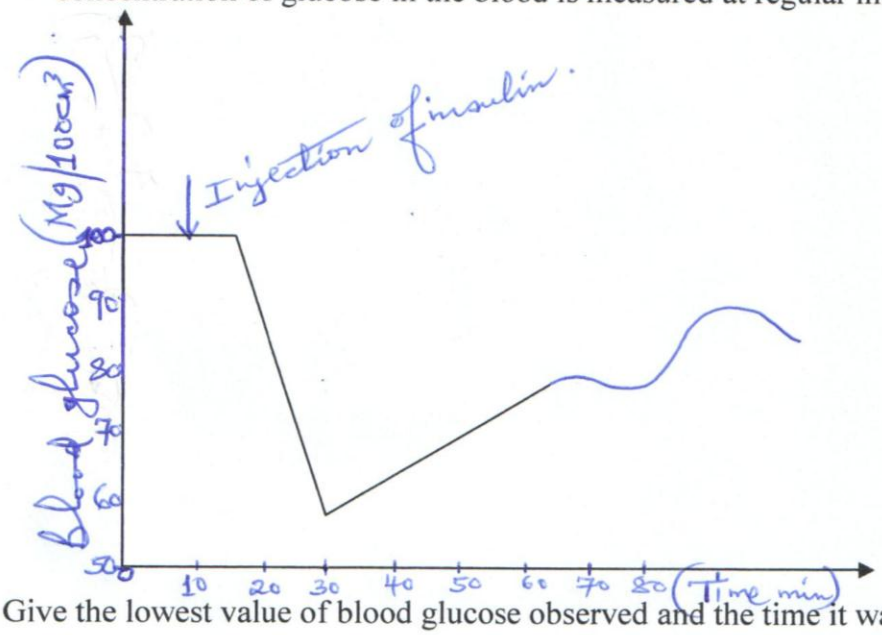
b. State the importance of this process to a mammal.(1mk)

c. In which organ does this process take place? (1mk)

SECTION A(60MKS)

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

1. The graph below shows the effect of injecting one unit of insulin into a person. The concentration of glucose in the blood is measured at regular intervals.



a. Give the lowest value of blood glucose observed and the time it was recorded.(1mk)

b. Explain the fall in blood glucose level.(2mks)

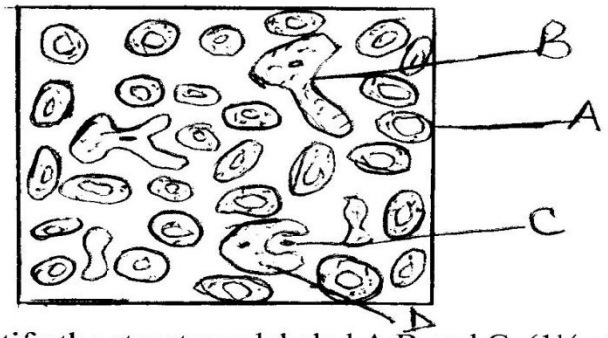
c. Name the mechanism that led to the increase in blood glucose level when it had been falling.(1mk)

d. Name the hormone responsible for the conversion of glycogen to glucose.(½mk)

e. State the effect of each of the following in human beings.
   i. Too much glucose in the blood(1mk)

i. Very little glucosein the blood(1mk)

2. The diagram below shows a smear of blood on a microscope slide.



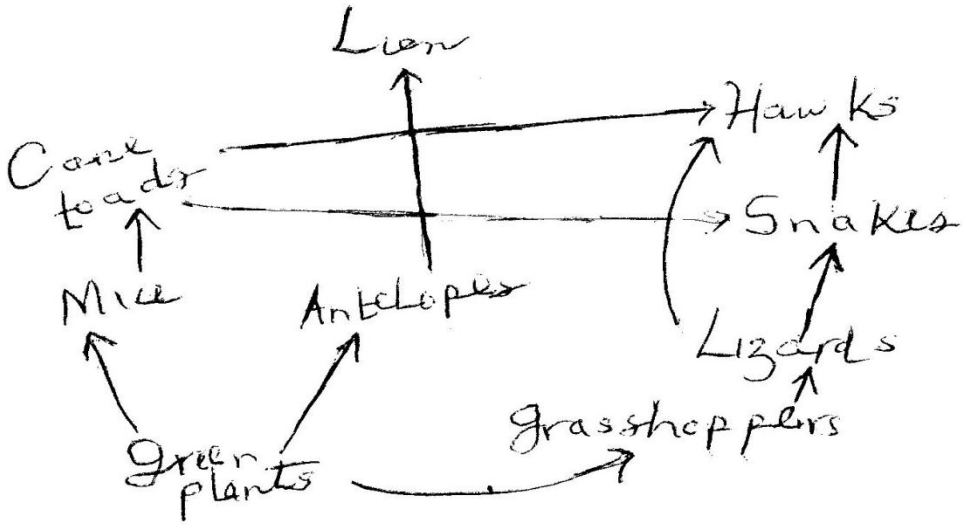
a. Identify the structures labeled A,B and C .(1½mk)
   A-
   B-
   C-

b. State the importance of the large number of structures A in the blood smear.(1mk)

c. Name the process by which structure D would engulf C and state its importance.(1½mks)

d. State one adaptation of the structure labeled A to its function.(1mk)

3. The flow chart below shows a food web in a terrestrial ecosystem.



a. From the food web, construct a food chain with five organisms.(1mk)

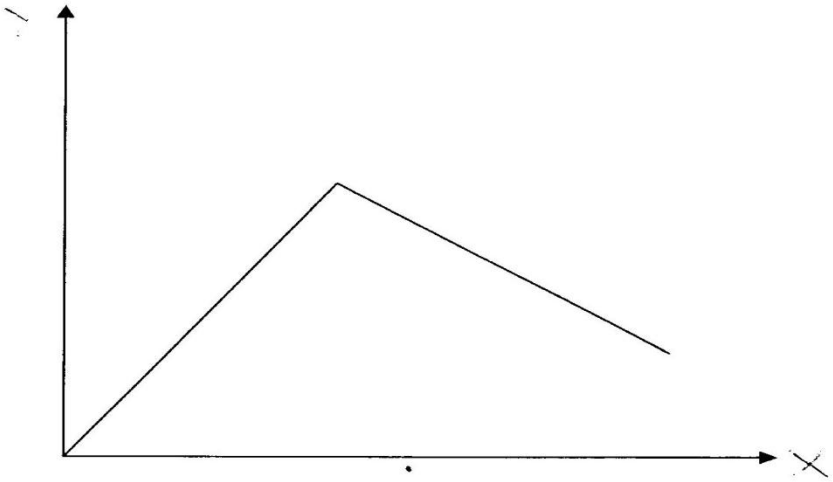
b. Name the trophic level occupied by:
   i. Hawks(½mks)

   ii. Cane toads(½mk)

c. What would happen if leopards were introduced into the ecosystem.(2mks)

4. Describe the processes that occurs in the chest cavity during inspiration.(6mks)

5. The graph below represents the effect of temperature on the rate of photosynthesis.

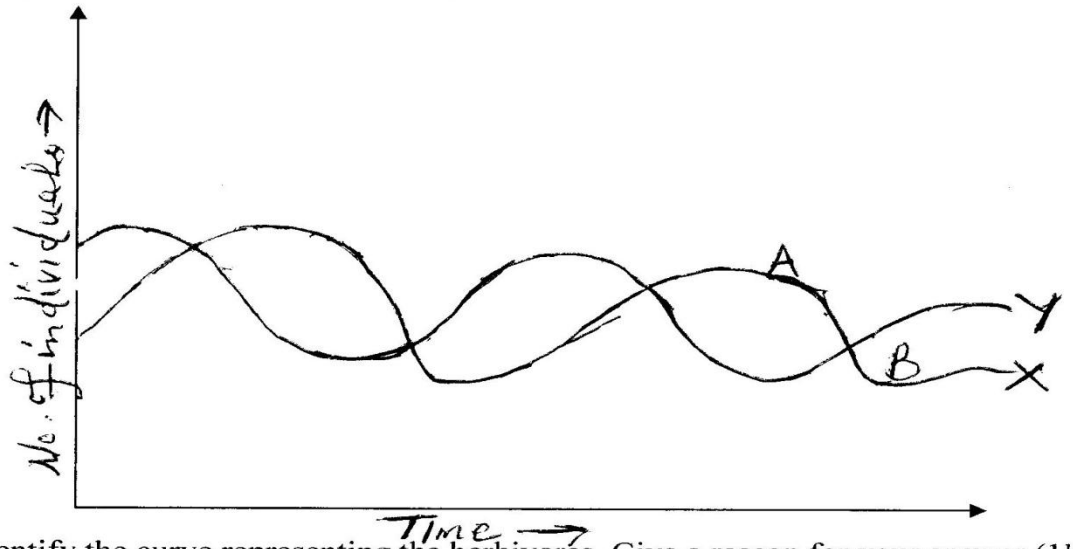


a. On the diagram, label the axes(1mk)

b. Comment on the general trend of the graph.(2mks)

c. List two other factors that may affect the shape of the graph.(2mks)

6. The graph below shows the relationship between number of herbivores and carnivores in a park.



a. Identify the curve representing the herbivores .Give a reason for your answer.(1½mk)

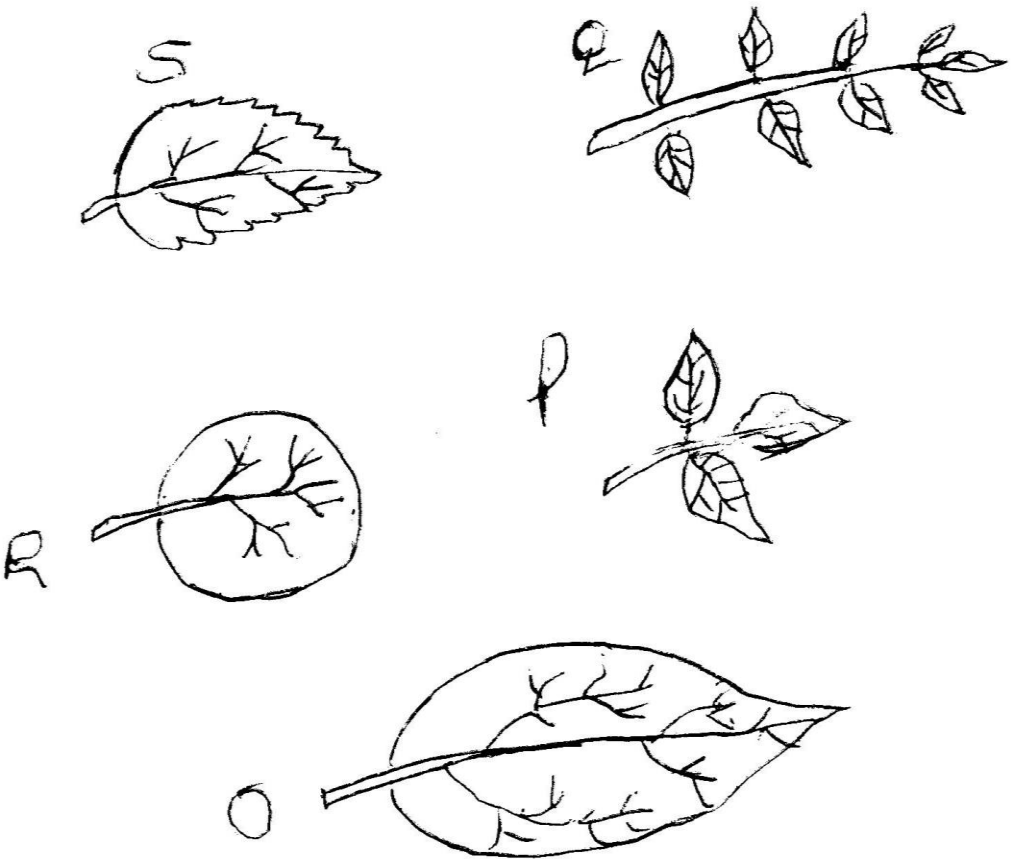
b. Suggest a reason for the slope of graph x between points A and B.(2mks)

c. I)Name the relationship between the two types of organisms as portrayed by the graph.(1mk)

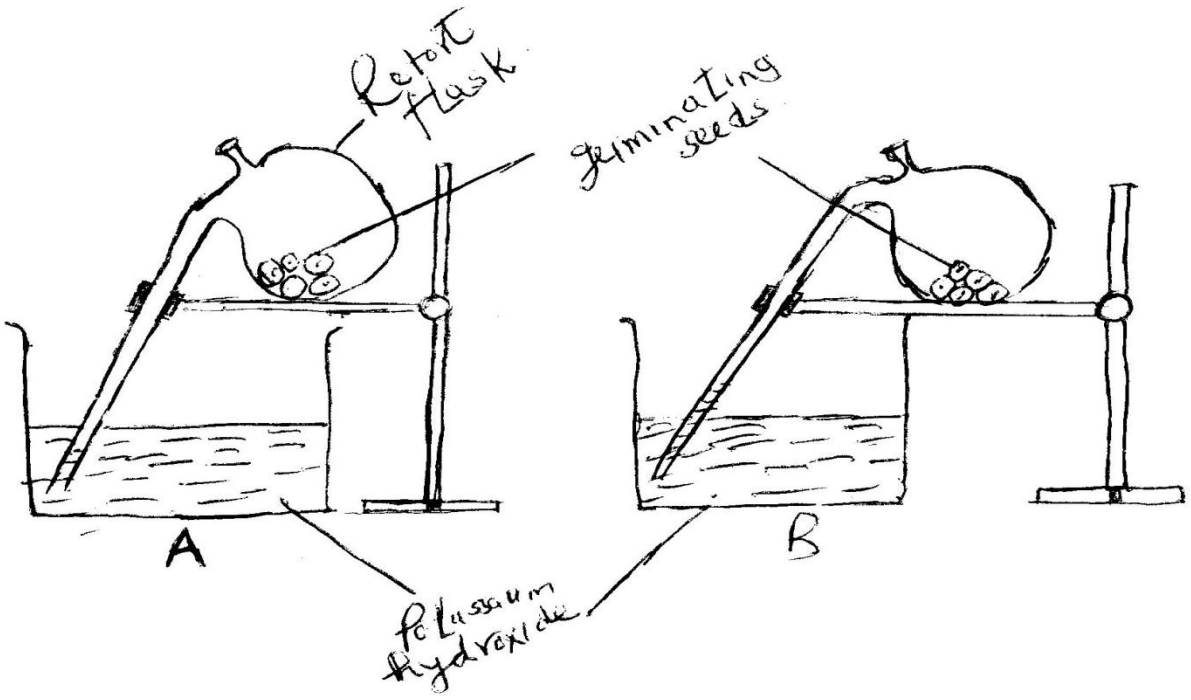
ii)State the significance of the relationship you have stated in (c)(i) above.(1mk)

d. Describe the long-term effect on the parks ecosystem if the species of the carnivores were to become extinct.(2mks)

7. Use the diagrams of leaves below to construct dichotomous keys. Identify the steps you followed to identify leaves O,P,Q and R.(12mks)



8. In an experiment, germinating pea seeds were put in a retort flask which was placed in a beaker containing potassium hydroxide solution as shown in diagram A below. At the e the experiment, the results were as shown in diagram B.



a. Suggest the aim of the experiment(1mk)

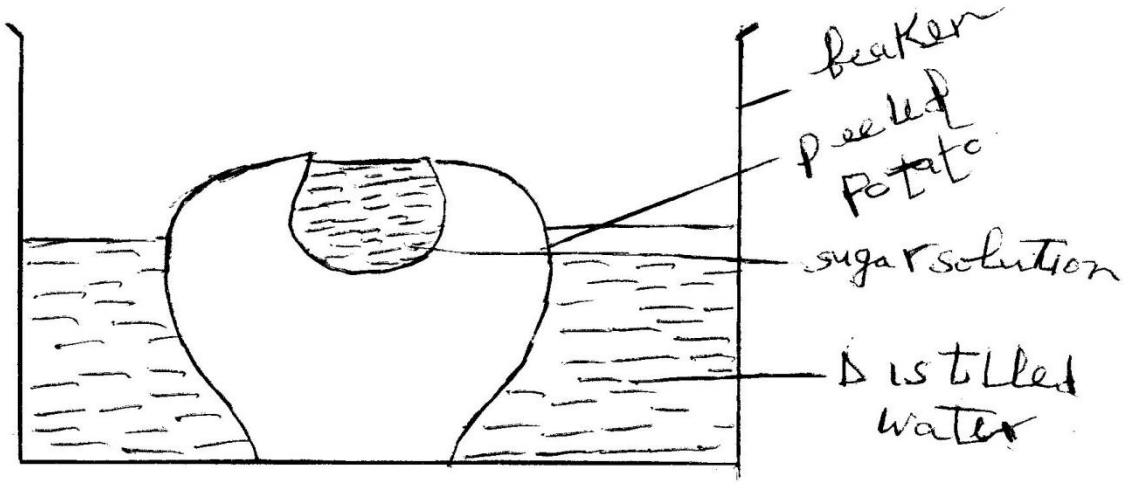
b. State the observable changes that occurred as shown in the diagram .(2mks)

c. Account for the changes noted in (b) above.(3mks)

d. Name the chemical process taking place in the peas.(1mk)

e. How would a control for this experiment be set.(1mk)

9. A group of students set up an experiment to investigate a certain physiological process as shown in the figure below. After some time, the students observed that the level of the sugar solution had risen.



a. What physiological process was being investigated?(1mk)

b. Account for the rise in the sugar solution in the experiment.(2mks)

c. Suggest with a reason the results that the students would obtain if they repeated the experiment using a piece of boiled potato.(1mk)

d. Explain why the cells of the potato above, would not burst when immersed in distilled water and left for some time.(2mks)

SECTION B(20MKS)- Compulsory.

10. Leaves were collected from the plant of a certain species growing in a shaded site and a plant from the same species growing in an open site. The surface area of each leaf was worked out. The results obtained are shown in the table below.

Surface area of leaves(cm^3)	
Shaded site	Open site
21	15
14	17
16	18
18	17
19	17
21	19
19	13
22	14
18	21
16	13
13	16
22	13
21	16
23	12
19	14
18	22
15	20
Mean surface area = x_1	Mean surface =x_2

a. Calculate the mean score x_1 and x_2(2mks)

b. Suggest one reason for the differences in the mean surface areas between the leaves from the two sites. Explain your answer.(2mks)

c. Briefly state the adaptations of plant leaves to a desert habitat.(6mks)

d. The leaves of a plant exposed directly to sunlight are often thicker than leaves found in the shade. Suggest two reasons for this observation.(2mks)

e. How does the observation in (d) improve the efficiency of leaves exposed to direct sunlight?(2mks)

f. Apart from photosynthesis, state two other functions of a leaf.(2mks)

g. State how a leaf is adapted for the functions you have stated in (f) above(3mks)

h. Some plants have rolled leaves. Explain the importance of such leaves to the plant.(1mk)

SECTION C(20MKS)

Select and answer only one questions in this section in the spaces provided.

11. a) Explain how the gills of a fish are adapted to the process of gaseous exchange.(5mks)

b)Describe the mechanism of gaseous exchange in the gills of a bony fish(15mks)

12. Explain how the mammalian skin is adapted to perform its functions.(20mks)

BUSINESS STUDIES

PAPER 1

TIME: 2HRS

ANSWER ALL THE QUESTIONS

1. Name the discipline described below that is part of the subject Business Studies (4mks)

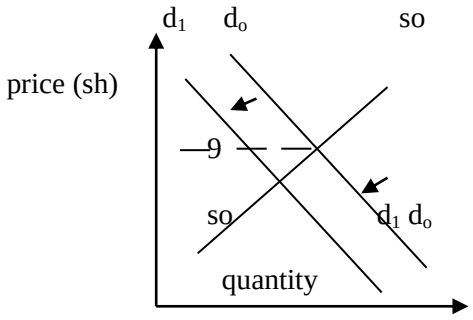
    a) **Study of all activities that take place in an office**

    b) **Study of trade and aids to trade**

    c) **Study of the process of identifying business opportunities and starting a business**

    d) **Study of the systematic ways of recording business transactions**

2. The diagram below shows a shift of the demand give of a commodity from dodo to d1d1. Outline any four factors that could have led to the shift (4mks)



3. Highlight four factors that may make communication in an organization to be ineffective (4mks)

4. Give four circumstances under which a cooperative society may be dissolved (4mks)

5. Outline any four characteristics of an imperfect competition market (4mks)

6. Write down the meaning of the following terms as used in business (4mks)

7. Give four benefits of electronic filing in an office (4mks)

8. Give four reasons why business firms advertise their products (4mks)

9. Mr Kigen is the managing director of Mbau furniture ltd. Which has a large, well equipped workshop with expensive machines. The company handles large sums of money. Outline four insurance policies that the company may have (4mks)

10. Outline four benefits to a firm that uses modern technology in its production activities(4mks)

11. Highlight four benefits to a retailer who uses a public warehouse to store goods (4mks)

12. A business wishes to communicate the arrival of much waited stock of goods to its customers. Give four reasons why it might describe to write a short text message(sms) to the customers instead of a business letter (4mks)

13. Outline any four advantages of using intermediaries in the chain of distribution (4mks)

14. List down four assumptions of the circular flow of income in a two sector economy (4mks)

15. Give any four challenges faced by human beings in their endevour to satisfy human wants (4mks)

16. Highlight any four benefits that the recently launched standard gauge railway from Mombasa to Kisumu would bring to Kenya's economy (4mks)

17. Name any four occupations that are found at the extractive level of production (4mks)

18. Outline any four advantages of small-scale retailers over large-scale retailers (4mks)

19. Highlight any four methods used to determine prices of goods and services in the economy (4mks)

20. Outline any four challenges that entrepreneurs face in Kenya (4mks)

21. Highlight four characteristics of free resources (4mks)

22. Give four advantages of self employment (4mks)

23. Outline any four duties of an office receptionist (4mks)

24. Name the types of advertising that are described below (4mks)
    i. Brand name and other features of the brand features more prominently –

    ii. Advertising that aims at popularizing a new product –

    iii. Advertising that popularizes the business organization –

    iv. **U**sed by organization that deals with similar products to convince potential customers to buy their products and not the other –
25. Highlight any characteristics of subsistence production in Kenya (4mks)

BUSINESS STUDIES

PAPER 2

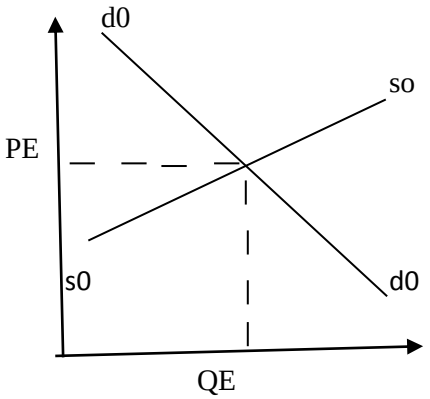
TIME: 2 ½ HRS

1. a) Outline any five differences between a public limited company and a public corporation (10mks)

b) Explain five factors that influence the location of business enterprises (10mks)

2. a) The diagram below shows the equilibrium price and quantity of commodity A which is produced jointly with commodity B.

do do-demand curve
so so - supply curve
PE -Equilibrium point
QE -Equilibrium quantity



   i. On the diagram show the effect of a decrease of tax charged on commodity B on the equi8librium price and quantity of commodity A (4mks)
   ii. Explain the effect of a decrease of tax charged on commodity B on the equilibrium price and quantity of commodity A (6mks)

   b) Bidco Kenya Ltd. is a manufacturer of soap and edible oil products. Highlight five reasons why the company chooses to distribute its products through wholesalers rather than selling directly to consumers (10mks)

3. a) Explain any four ways in which the Kenya government involves itself in government activities in the country (10mks)

   b) Discuss five ways which county governments in Kenya can use to attract entrepreneurs in their areas. (10mks)

4. a) Kenya association of manufactures (KMA) brings Kenyan manufacturers together to solve problems faced by the manufacturers as well as consumers. Discuss five measures taken by the manufacturers to protect consumers (10mks)

   b) Discuss five importances of natural resources in a country (10mks)

5. a) A recent economic survey showed a very big gap between the rich and the poor in Kenya Explain any five factors that could have led to this disparity in income distribution among individuals in Kenya (10mks)

   b) Highlight any five reasons why there are so many small-scale business firms in Kenya despite the economies of scale enjoyed by large firms (10mks)

6. a) Discuss any five circumstances under which an insurer may not compensate the insured in the event of occurrence of a loss (10mks)

   b) Explain any five functions of marketing boards in Kenya (10mks)

CHEMISTRY
THEORY
PAPER 1

Name: ……..class: ……..Adm no: …….school:…….

1. Name another gas which is used with oxygen in welding [1 Mk]

2. a. write the electronic configuration of calcium (atomic number 20) and magnesium (atomic number 12)
   Calcium…….. [½ Mk]

   Magnesium…….. [½ Mk]

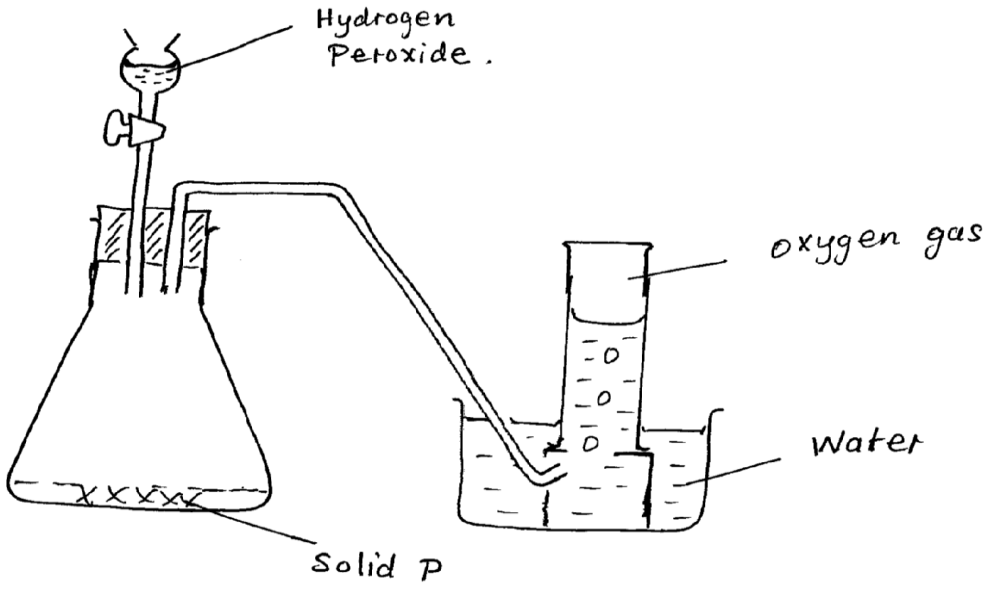
   b. Why is calcium more reactive than magnesium? [2 Mks]
   ……
   ……
   ……
   ……
   ……

3. The table below shows the relative atomic masses and the percentage abundance of the isotopes T_1 and T_2 of element T

	RAM	% abundance
T_1	62.93	69.09
T_2	64.93	30.91

   Calculate the relative atomic mass of element T [3 mks]

4. The diagram below is a set-up for the laboratory



preparation of oxygen gas.

a. Name solid P. ……[1 mk]

b. Write an equation for the reaction that takes place in the conical flask
……[1 mk]

c. Give two commercial uses of oxygen [2 mks]

i. ……

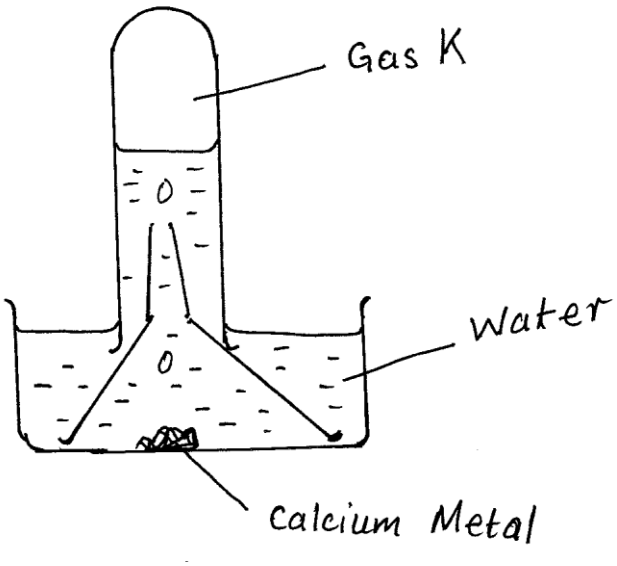
ii. ……

5. State two reasons why hydrogen is not commonly used as a fuel [2 mks]

i. ……

ii. ……

6. The figure shows a set-up by a form three student to prepare a certain gas



a. Write an equation for the formation of gas K [1 mk]

……

b. Give one use of gas K in the industries [1 mk]

……

c. Give one use of the resulting solution after the metal has reacted [1 mk]

……

7. Draw a dot and cross diagram showing the bonding in a molecule of calcium oxide. Name the type of bond.
[3 mks]

8. When 0.288g of an oxide of metal M was reduced using suitable reducing agent, 0.256 of pure metal was formed. Determine the empirical formula of the oxide of the metal M. [M=64 O=16]
[4 mks]

……

……

9. X+ is an ion with electronic configuration 2,8,8. Identify element X [1 mk]

……

10. 20g of solid sodium hydroxide were dissolved in distilled water and made to 400cm^3. 30 cm^3 of this solution required 27 cm^3 of dilute sulphuric (iv) acid for complete reaction. [Na=23 O=16 H=1]

Determine

i. Moles of sodium hydroxide contained in 30 cm^3 of solution [2 mks]

……

……

……

ii. Moles of sulphuric (iv) acid that reacted [2 mks]

……

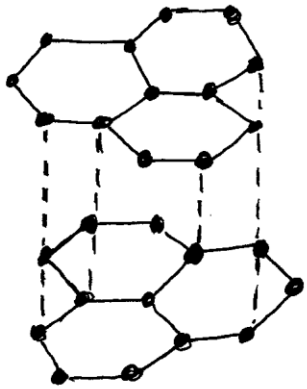
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iii. Concentration of the sulphuric (iv) acid in moles per litre [2 mks]

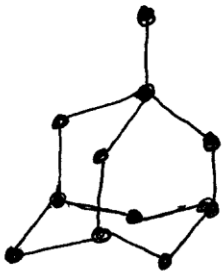
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11. The diagram shows the structures of two allotropes of carbon. Study them and answer the questions that follow.



A



B

a. Name allotrope A and B [2 mks]

A……..

B……

b. Give two uses of allotrope B [2 mks]

i. ……

ii. ……

c. Which allotrope conducts electricity? Explain. [2 mks]

……..

……

12. An oxide of element F has the formula F_2O_5

a. Determine the oxidation state of F. [1 mk]

……..

b. In which group of the periodic table is element F? [1 mk]

……..

13. Explain how you would obtain solid sodium carbonate from a mixture of lead II carbonate and sodium carbonate. [3 mks]

……..

……

……

……

14. Give two properties of aluminum that makes it very suitable for making cooking utensils [2 mks]

i. ……

ii. ……

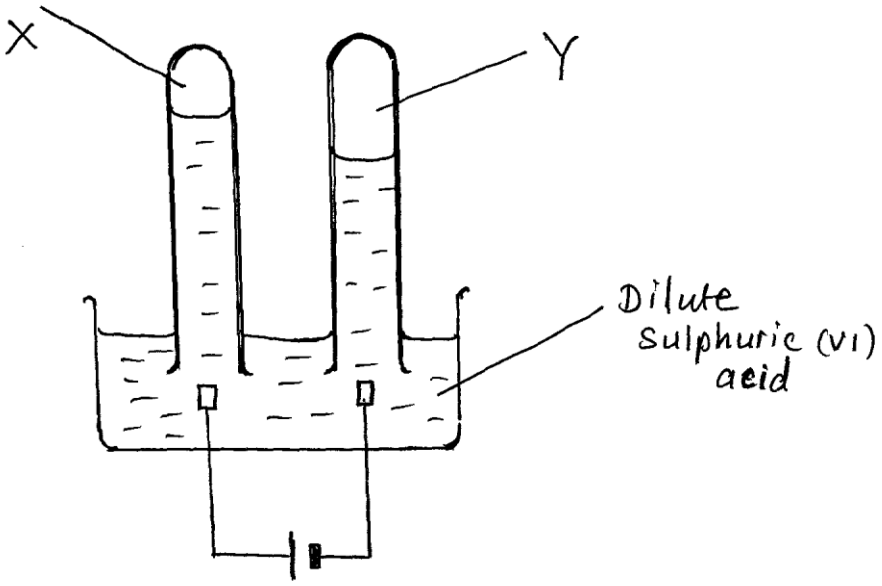
15. Write down an ionic equation for the reaction between dilute hydrochloric acid and calcium carbonate [3 mks]

……

……

……

16. The diagram shows electric current passing through dilute sulphuric (iv)acid



a. On the diagram identify the cathode and the anode [2 mks]

b. Identify substances X and Y [2 mks]

X ……[1 mk]

Y ……[1 mk]

17. State and explain the change in mass that occur when following substances are separately heated in open crucibles [4 mks]

a. Copper metal……

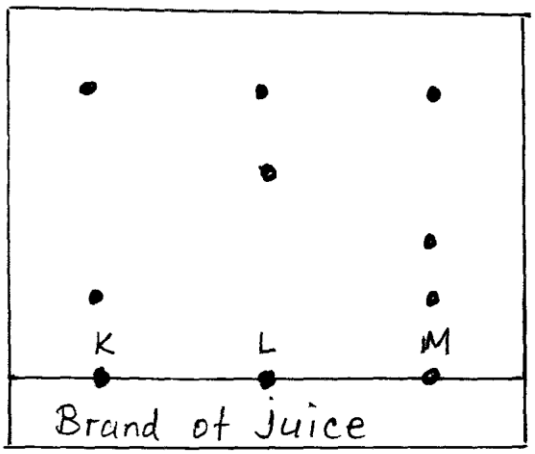
……

b. Copper II nitrate……

……

……

18. The diagram below represents a paper chromatograph for three brands of juices suspected to contain banned food colourings



The result showed presence of banned food colourings in L and M only

a. On the diagram
   i. Circle the spots which show the banned colourings [2 mks]
   ii. Show the solvent front [1 mk]

b. On the same diagram indicate and label the baseline [1 mk]

19. Determine the number of sodium ions contained in $25cm^3$ of 0.5M sodium carbonate solution [a=6.023×10^{23}] [3 mks]

……

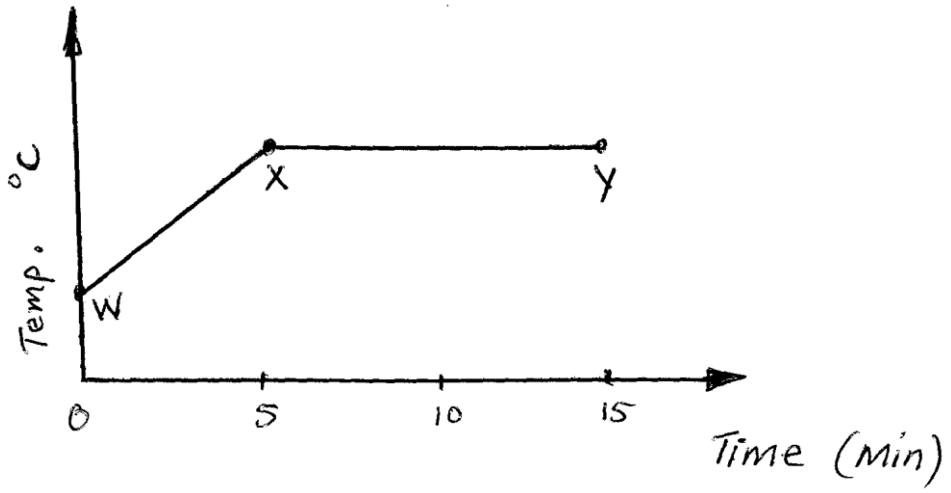
……

……

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20. The graph below shows a curve obtained when water at 20°C was heated for 15 mins.



a. What happens to the water molecules between points W and X [1 mk]

……

……

b. In which part of the curve does a change of state occur? [1 mk]

……

……

c. Explain why the temperature does not rise between points X and Y [1 mk]

……

……

21. Write down the formula of the following compounds

i. Potassium manganate vii……[1mk]

ii. Aluminium oxide ……[1mk]

iii. Iron III chloride ……[1mk]

22. Write balanced equations for the following reactions

a. Reaction between sodium and excess oxygen [1mk]

……

……

b. [1mk]

……

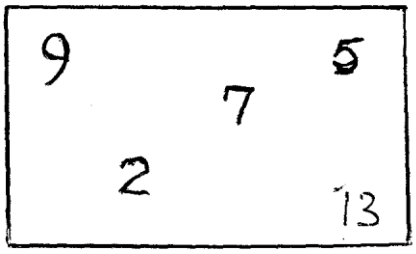
……

a. Reaction between Zinc and hydrochloric acid [1mk]

……

……

23. The diagram shows PH values for several substances.



Choose the likely PH value for,

i. Dilute Hydrochloric acid……[1mk]
ii. Calcium hydroxide……[1mk]
iii. Sodium hydroxide ……[1mk]
iv. Lemon juice……[1mk]

24. Briefly outline how you would obtain ethanol from a mixture of ethanol and water. [3mks]

……..
……
……..
……

25. (a) What is rust? [1mkl]

……..

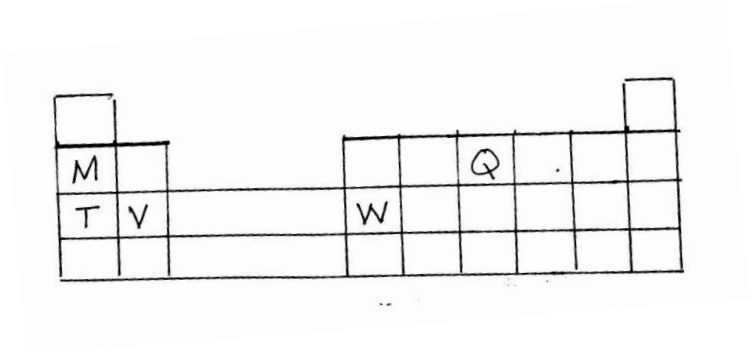
(b) Give two advantages of rusting.

(i) ……[1mk]
(ii)……[1mk]

CHEMISTRY P 2 FORM III
TIME: 2 ½ HOURS:

INSTRUCTIONS: Answer all questions in the space provided.

Q 1. The diagram below represents part of the periodic table use it to answer the questions that follow.



a) Write the electronic management for the stable ion formed by W (1mk)

.....

b) Write the question for the reaction between V and Q (1 mk)

……

c) How do we ionization energies of the elements M and T compare. Explain (2mks)

……

……

Q 2. 60 cm^3 of oxygen diffuses through a porous pot in 50 seconds. How long would it take 60 cm^3 of oxygen gas diffuses through a porous pot in 50sec.How long would it take 60cm^3 of Sulphur (iv) oxide to diffuse through the same pot under the same conditions? (4mks)

……

……

……

Q 3. Give 2 reasons why helium is used in weathers ballons (2mks)

i)……

ii)……

Q 4. State the types of change that take place in each of the following situations

a)Burning a piece of charcoal ……..(1mk)

b) Heating copper (ii) carbonate strongly……(1mk)

c) Heating Zinc oxide strongly ……(1mk)

Q 5. In a experiment to determine the percentage of purity of a sample of sodium carbonate, 2.15g of the sample reached completely with $40cm^3$ of 0.5m sulphuric (iv) acid

i)Calculate the number of moles of Sodium Carbonate that reacted (2mks)

……

……

……

ii)Determine the percentage of Sodium Carbonate in the sample (Na=23,C=12,0=16 (3MK)

……

……

……

iii) Name two industrial uses of Sodium Carbonate (2mks)

……

……

……

Q 6 A certain mass of gas occupies $0.15dm^3$ at 20c and 98,648.5pa, Calculate it volume at 101325pa and 0^0c (3mks)

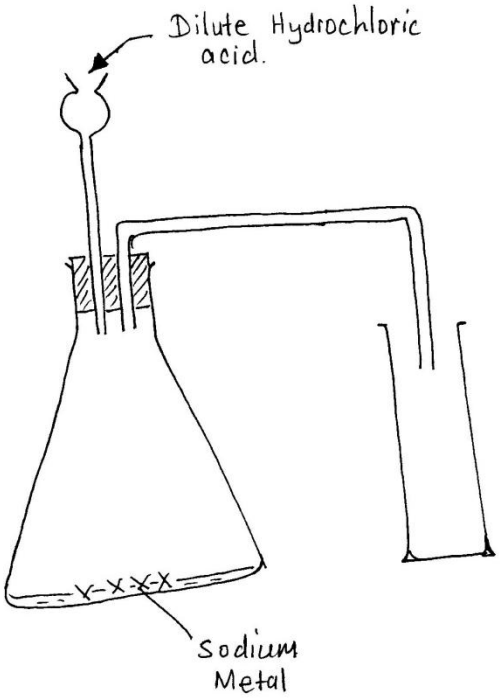
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Q 7 a) Explain why aluminum is a better conductor of electricity than Sodium (2mks)

b) State one property of aluminum that makes it suitable for power transmission cables (1mk)

Q 8 The diagram below shows set-up for preparing hydrogen gas by a Form 3 Student .



a)Identify three mistakes with the set-up (3mks)

……

……

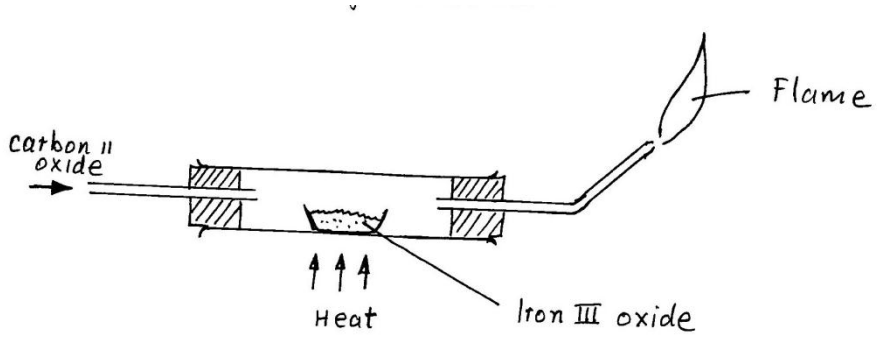
……

b) On the diagram make suitable modification to solve the mistakes in(a) above (3mks)

c) What is the test for hydrogen gas (1mk)

……

Q 9 Carbon Oxide gas was passed over heated iron III Oxide as shown in the diagram below



a) Give the observation made in the combustion tube (1mk)

……

……

b) Write the equations for the reaction which take place in the combustion tube (1mk)

……

……c) Which property of carbon II Oxide as demonstrated by the experiment (1mk)

……

Q 10. State and explain the function of tartaric acid in baking powder (2mks)

……

……

……

Q 11. a) State Boyle's Law (1mk)

……

……

……

b) 300cm^3 of a gas at 800mm Hg was compressed to 200mm Hg pressure at constant temperature. Determine the new volume (2mks)

……

……

……

……

Q 12. Explain why is not suitable to have a

a) Jiko with burning charcoal in a closed room (2mks)

……

……

……

……

b) Which gas is contained in tizzy drinks? 1mk)

……

……

……

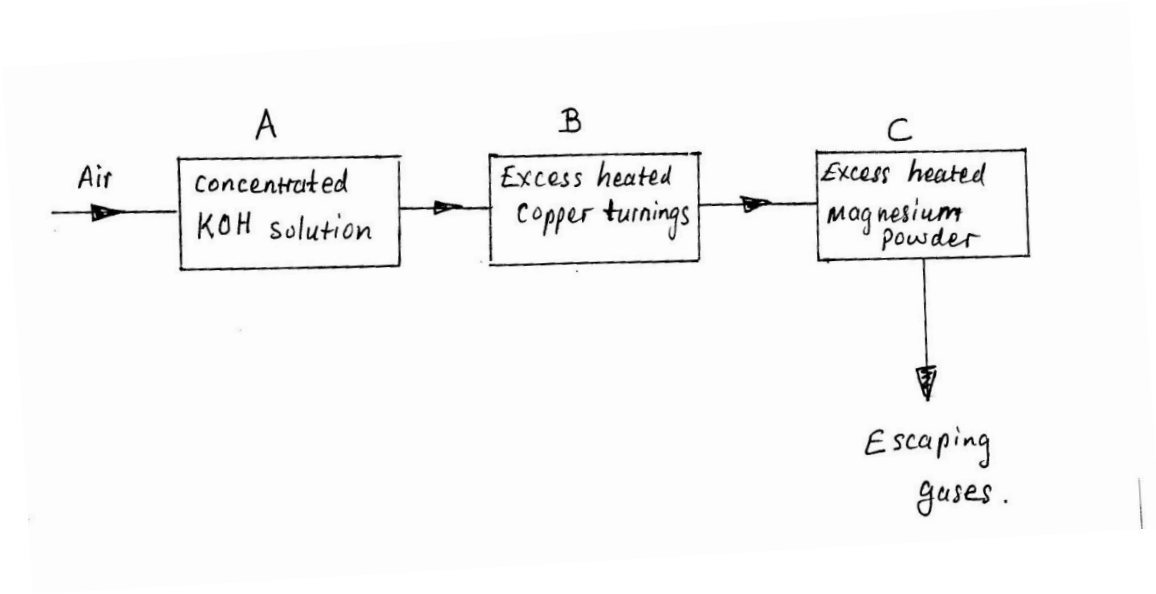
c) Write an equation for the reactions on the gas contained in dizzy drink and water (1mk)

……

……

……

Q 13. Air was passed through several reagents as shown in the flow chart below



a) Identify substances removed from chambers A and B then

A …… (1mk)

B……(1mk)

b) Write an equation for the reaction which take place in the chamber with magnesium powder (1mk)

……

……

c)Name one gas which escapes from the chamber containing heated magnesium powder.

Give a reason for your answer (2mks)

Gas ……

Reason ……

……

……

Q 14. When potassium Nitrate is heated, it produces potassium Nitrate and gas X

a) Identify gas X (1mk)

……

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

……

Q 15. Write a balanced equation for the reaction between Magnesium and Steam (1mk)

……

Q 16. When Chlorine gas was bubbled through water the resulting solution act as a bleaching agent

a) Explain how the resulting solution act as a bleaching agent (2mks)

……

……

……

……

b) Using a neat diagram show how chlorine gas is collected in the laboratory (2mks)

……

……

……

……

Q 17. Study the information in the table below and answer the questions that follow: The letters do not represent the actual symbol of the element).

Element.	Electronic configuration	Ionisation energy $KJ\ mol^{-1}$
P	2, 1	519
Q	2, 8, 1	494
R	2, 8, 8, 1	418

a) What is the general name given to the group in which element P, Q and R belong? (1mk)

……

b) What is meant by ionisation energy (1mk)

……

……

c) Explain why Element P has the highest ionisation energy (2mk)

……

……

……

d)When a piece of element Q is placed on water it melts and a hissing sound is produced as it moves on the surface of the water .Explain this observation (3mks)

……

……

……

……

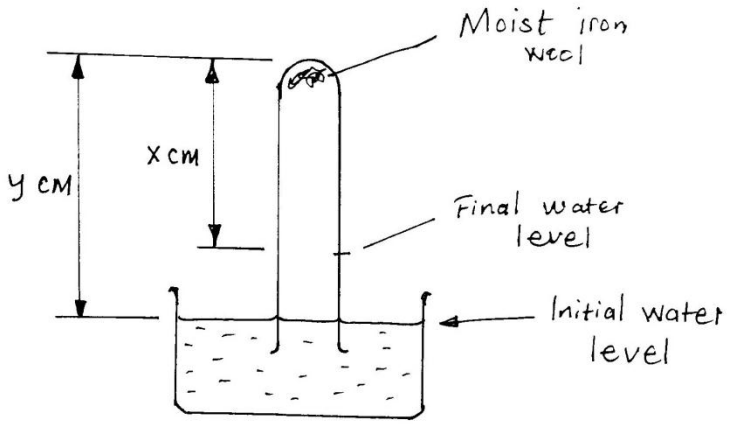
e) Write an equation for the reaction between elements Q and water (1mk)

……

……

……

Q 18 Some moist iron wool was placed in a test tube and the tube inverted and placed in a beaker containing water. The apparatus was left for one week .It was observed that the iron wool had rusted and the water level had raisen.No further change took place when the set-up was left for more days even though not all the iron rusted.



a) Explain whether rusting is a chemical or a physical change (2mks)

……

……

……

c) Write an expression for an approximate percentage of air used up (1mk)

……

……

d) What would be the effect on the level of the water if a larger piece of iron wool was used (2mk)

……

……

……

e) State the similarities between rusting and combustion (2mks)

……

Q 19 The table below gives the number of protons and neutrons in element G,H,I and J

Element	G	H	I	J
Number of protons	3	17	19	19
Number of neutrons	4	20	18	22

a) Which atoms isotopes of the same element? (2mks)

……

c) Which atoms have the same mass number (2mks)

……

f) Write formula of the compound formed between G and H (1mk)

……

……

Q 20 Give the valency of each of the elements (1mk)

or radical in the following chemical compounds. (3mks)

i) Ca(PO4)2
ii) Mg3N2
iii) NaOH

C.R.E PAPER 1

ANSWER ANY FIVE QUESTION S IN THE ANSWER SHEET PROVIDED

1. a) Outline seven activities performed by God in the second biblical account of creation (7mks)

b) Give six similarities between six in the bible and the Traditional African understanding of the evil (6mks)

c) In what ways is the church fighting evil in the society (7mks)

2a) Explain how Abraham demonstrated his faith in God (6mks)

b) Outline the role played by Moses in the history of the Israelites.(8mks)

c) What do Christians learn about God from the ten plaques. (6mks)

3a) Give reasons against theocratic rule in Israel (7mks)

b) Explain seven challenges faced by King David in Israel.(7mk)

c) Identify six reasons why a leader may be rejected in the society today. (6mks)

4 a) state four reasons why God's true prophets were putting their prophecies into writing. (4mks)

b) Give four characteristics for false prophets as depicted in the Old Testament. (6mks)

c) Write down five differences between the traditional prophets and the Old Testament prophets. (10mks)

5. a) Describe the call of Amos. (6mks)

b) Identify the social injustices condemned by prophet Amos. (6mks)

c) Explain four factors which hinder a Christian from helping the needy (8mks)

6. a) Why are taboos important in traditional African communities. (6mks)

b) List 8 ways in which member of the traditional African communities helped the bereaved families (8mks)

c) Identify 6 steps taken by the church to assist orphans. (6mks)

FORM 3 CRE JOINT EXAMINATIONS

PAPER 2

ANSWER ANY FIVE QUESTION S IN THE ANSWER SHEET PROVIDED

1. With reference to Luke's gospels, explain eight ways in which Jesus fulfilled the Old Testament prophesies about the Messiah. (8mks)
b) Explain What Zachariah revealed about John the Baptist in the Benedict sin Luke 1:68-80 (6mks)
c) Give reasons why then birth of a child is celebrated in the modern society? (6mks)

2 a) Give reasons why Jesus was rejected in Nazareth (8mks)
b) Describe the healing of the paralytic (lk 5:17-26) (7mks)
c) Give reasons why a church leader may be rejected today (5mks)
3 a) Narrate the parable of the widow and the unjust judge (lk18:1-8) (6mks)
b) Explain Jesus teaching on prayer (8mks)
c) Give the importance of prayers in a Christian life today (6mks)
4a) Explain actions taken by Jewish leaders to ensure that Jesus was put to death (8mks)
b) Give evidence to show that Jesus resurrected (6mks)
c) What is the importance of Jesus resurrection to Christian today? (6mks)_
5a) Explain the New Testament teaching s on the unity of the believers as expressed in the bride (8mks)
b) Identify causes of disunity in the early church (6mks)
c) Explain how church disciplines those who cause disunity in to church today (6mks)
6 a) Outline seven teachings about Jesus from peters message on the day of Pentecost (7mks)
b) Outline the characteristics of love as taught by St.Paul in 1corinthian 13 (7mks)
c) State activities of the church in Kenya which show that the Holy Spirit is working among them. (6 marks)

ENGLISH
PAPER 1

QUESTION 1

1. You are a young investigative journalist; you've just visited a welfare organization that received funds from a donor. The organization however feels that the funds can't suffice their plans and therefore appeals for more funds from the donor. Write a report.

CLOZE TEST (10mks)

Fill in each blank space in the following passage with a suitable word.

Can you _____1_____ a basic standard two test? You may be schooled but you are not_____2_____ this, a woman's baby is dying _____3_____! Picture this, a woman's baby is on the _____3_____ a disease and a nearby poster On the _____4_____ gives details on how to prevent or _____ 5_____ it, yet _____6_____ cannot interpret it despite having attended primary school. This is part of a dilemma that a group of education researchers are out to ____7_____: Weather Kenya's _____8_____can be read but cannot process information._____9_____Education researchers have designed a unique test _____10_____ at reviewing Kenyans? Ability to read and write completely, despite, going through a rigorous school system.

ORAL SKILLS (30mks)

a) Read the oral narratives below and answer the questions that follow.

Once upon a time, a woman who was pregnant and about to give birth went to the bush to collect firewood. On went to the bush to collect firewood. On reaching the bush, she suddenly gave birth to a baby boy who was so deformed and ugly that she decided to exchange it for another baby. A normal – looking one she found abandoned and crying in a nearby thicket. She didn't know that this baby was a spirit called Ekipie by the Turkana.

The woman returned home with the baby and since it was evening time, she had to milk the cows. So as usual, she took three gourds and filled them with milk from the numerous cows they owned. She put the milk containers in her hut where her eldest daughter was minding the new baby. Then she went out again to complete some of her other chores.

Later, when she returned to the hut where she had left the baby, she found to her dismay, that there was no milk at all. All the three guards were empty. Surprised, and shocked, she questioned her daughter about the milk and what had happened to it. The girl replied;

"The baby has drunk it all".

"I cant belief such a tale. It's ridiculous for you to say such a thing", She scolded her daughter.

"Don't tell lies. Admit you are just imagining things. Who drank the milk?"

The woman persistent in questioning her daughter in questioning her daughter who swore it was the baby.

Strange as it may sound to you, the same thing happened again the following day and a several consecutive days. The woman grew puzzled and confused. Her husband too began to complain about the non – availability of milk in the household. Now, the woman had no alternative but to tell him the truth.

Questions

i) What would you do to prepare your audience to listen to the above story? (2mks)

.....

.....

.....

.....

ii) What two things would indicate to you that the audience is following the story? (2mks)

.....

.....

.....

.....

iii) What two oral devices would you use in narrating this story? 2mks

.....

.....

.....

.....

iv) How would you perform the reply of the girl" The baby has drunk it all" 2mks

.....

.....

.....

b) Provide homophones for the following words.

i) Know.....

.....

ii) Scene.....

.....

iii) Sight.....

.....

Iv. Blew……..

……

.v. Ewe.....

……

c) Explain the difference in meaning between the following sentences. (2mks)

i) The thief entered this house

.....

.....

.....

ii) The thief entered this house

.....

.....

d) In the following paragraph, the writer has utilized one of the genres of oral literature to express his feeling about the subject. Answer the following question based on it.

The prince was their, idol
Through he was enjoying the peas.
He was bored and need parrying,
The regency took the queue
To enjoy from the generous air,
The kind sun of the kingdom.

(Karnabomain)

Replace the underlined words with those that have the same sounds to bring out the intended surface/ literal meaning. (3mks)

i).....

.....

ii).....

.....

iii).....

.....

iv).....

.....

v).....

.....

e) " Your Bob owes our bob. If your Bob doesn't give our Bob the bob owes our Bob, Our Bob will give your Bob a bob in the eye?

i) Identify the genre above (2mks)

.....

.....

.....

.....

ii) Give one characteristic feature of the genre above. (2mk)

.....

.....

.....

.....

f) Mrs. Jabali of Upendo High School asked her class to decide which of the set books in their syllabus they should perform for the rest of the school. Read the form Three champions discussion below and then answer the questions that follow.

Mrs Jabali: Rose, Would you lead the discussion?

Rose: Aha,Ok. The question is, What play should we pick for our class play? Does anyone have suggestions? Mercy?

Mercy: I suggest we do an Enemy of the people.

Sharon: How about shreds of Tenderness?

Rose: No, I dislike Shreds of Tenderness Passionately. Kaunda: I love the River Between.

Mercy: No way! That would make a stupid play! let's do An Enemy of the people.

Rose: Sasha!

Sasha: I have never watched Shreds of Tenderness but .....

Joy: It is a super barb play.

Rose: Joy, Please let Shasa finish then it is your turn.

Joys: Sorry

Sasha: Anyway, I have never seen a play on An Enemy of the People but I have watched a movie and I loved it.

Rose: Lilian

Lilian: I just wanted to say that I like think Shreds of Tenderness is really good play.

Rose: Naom?

Naom: I saw the Movie An Enemy of the people too, and I really liked it. I loved the part where Catherine storms the.....

Rose: Excuse me, Naom, But we should talk about that after the discussion is over. Does anyone have any other suggestions? No? Ok.Mercy proposed An Enemy of the People, Sharon like Shreads of Tenderness and Kaunda wants the River Between. Has anybody seen or read all three? No? Ok. I suggest that we read them and then continue the discussion in a couple of days. Is that okay with everyone? Ok.

The discussion is over.

i) In terms of effective communication identify five things some members of form four champions did wrong in the discussion. (5mks)

.....

.....

.....

.....

ii) Mention three aspects or etiquette displayed by some members during the discussion. (3mks)

ENGLISH PAPER 2

FORM 3
TIME 2hrs 30 mins

Attempt all the questions

1. ***Read the passage*** below ***and answer the questions that follow.*** **(20mks)**

One good thing about music, Bob Marley sang in Trenchtown Rock, is when it hits you, you feel no pain – but for South Africa's apartheid regime, the opposite was true as it felt the wrath of musicians who composed protest songs against its oppressive policies.

During the apartheid years, music was more than a solace – it was a "weapon of struggle" used against the aggressor whose only recourse was to ban it from the airwaves, but never from the hearts of the millions who were oppressed.

Music had always been used to soothe souls during sufferance and it is said that it is slavery that gave birth to (heavy metal) rock when slaves used their shackles or tools to make music either to entertain themselves or to irk their captors.

The separatist system that saw people like Nelson Mandela and other black South African leaders jailed for dissidence gave rise to more protest music than ever before.

And South Africa's anti-apartheid musicians were so influential that their songs were not only banned, but they were also forced into exile. Mandela believes that these protest songs, together with those of non-South Africans, played a significant role in the collapse of apartheid and, indeed, his February 11, 1990 release from Robben Island.

"Artistes reach areas far beyond the reach of politicians. Art,especially entertainment and music, is understood by everybody, and lifts the spirits and the morale of those who hear it," Mandela admitted after his release.

South Africa's musicians like Hugh Masekela and the MirimaMakeba started the protest campaign back in the late '50s and early '60s after leaving South Africa for the United States, where they used music to highlight the desperate situation of their compatriots who were living under oppressive rule in the townships back home.

The Musical campaigns against apartheid intensified internationally throughout the'70s and '80s and saw the composition, production and performance of many a political song by musicians who had never even set foot in African but were inspired to join the anti-apartheid bandwagon- with some, like Paul Simon, even stirring controversy when he was accused of breaking the cultural boycott against South Africa by touring the country and utilizing contributions from local acts.

But the beat never stopped. In the UK, The Specials released Free Nelson Mandela while in the US, Gil Scott-Heron and Brian Jackson released protest classic Johannesburg off the album From South Africa to South Carolina. Little Steven (and the Disciples of Soul), together with Artists United Against Apartheid, conceived and produced Sun City Resort in one of South Africa's so-called homelands where international Musical concerts were frequently held.

Adopted from Sunday Nation December 8th 2013.

(a) What type of music is the author referring to in the passage (1 mark)

……

……

(b) According to the passage what were the contributions of the anti-apartheid musicians.
(2 marks)

……

……..

……

(c) Who are the international singers who joined the musical campaigns against apartheid. (3mark)

……

……..

……....

(d) Artistes reach areas far beyond the reach of politicians (add a question) (1 mark)

……

……

(e) Make notes on the titles of songs sung against the apartheid regime (4marks)

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……..

……...

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……..

……....

(f) Identify the setting of the passage (2 marks)

……..

……

(g) ***Paraphrase the following sentence***

"artists reach areas far beyond the reach of politicians. Art, especially entertainment and music is understood by everybody, and it lifts the spirits and the morale of those who hear it " (3 mark)

……

……..

……....

……

(h) Give this passage another title (1 mark)

…….

(i) ***Explain the meaning of the following words and phrases*** (3 marks)

(i) irk their captors

……

(ii) dissidence

……

(iii) stirring controversy

…….

2.BLOSSOMS OF THE SAVANNAH (25mks)

Read the following excerpt and answer the questions that follow

They were silent as they climbed the hill on their way back from Nasila to draw water .The water containers that they carried on their backs were now heavy. The straps that supported the containers pressed down their heads with a painful exhaustion.

As they walked, each one of them allowed her mind to fleeting roam the fanciful land of wishful thinking. Resian thought how wonderful it would be, had she had a chance to enroll at the Egerton University and after graduation had a chance to work with her role model ,MinikeneNkoitoi ,the Emakererei at the sheep ranch that she managed .She imagined herself already there driving a large flock of sheep .And when she thought of sheep , her mind flew back to fifteen years or so earlier and **reminisced**the first time she saw a sheep.It was a childhood memory ,a memorable picture from the swirling scene around her which had been captured and preserved by her mind when she and Taiyo accompanied their father to the Nakuru Agricultural show.She could still see in her mind a group of big,docile tawny woolly animals that stood panting drowsily in a green pasture ,with the sun beaming down brightly from a clear blue sky .She had then admired the white long overcoats that the handlers wore.

Taiyo also thought of Emakererei .She would ask Joseph Parmuat , to assist her compose a song in her praise .She had already put words to a tune she had composed to ridicule the three women who she thought **collaborated** with men to oppress the women folk .They were Nasila's three blind mice who , she thought , did not seem to know that the world was changing .Those were the *enkasakutoni*who threatened to curse *intoiyenemengalana*and ensured they did not get husbands nor children;the midwife Enkaitoyoni who threatened to spy on the young women as they gave birth to ensure that any who was among intoiye-nemengelana had her

status altered there and then;and the **dreaded** Enkamuratani,who will never tire of wielding her olmurunya**menacingly.**

QUESTIONS

i) place the excerpt in its immediate context. (4 marks)

ii) identify and illustrate two aspect of style in this excerpt (4marks)

iii) discuss two themes evident in this excerpt (4 marks)

iv) discuss one character trait of Resian and Taiyo in the excerpt (4 marks)

v) The straps that supported the containers pressed down their heads with a painful exhaustion. Rewrite beginning: with…… (1 mark)

vi) How does Resian's thoughts come to be fulfilled in future ?briefly explain(4marks)

vii).Explain the meaning of the following words as used in the excerpt. (4 marks)

i. Reminisced.

ii. Collaborated

iii. Dreaded

iv. Menacingly

3.***Read the poem below and answer the questions that follow***

The earth does not get fat.
It makes an end of those who wear the head plumes.
We shall die on the earth.
The earth does not get fat. It makes an
end of those who act swiftly as heroes
Shall we die on the earth?
Listen O earth. We shall mourn because of you.
Listen O earth. We shall die on the earth?

The earth does not get fat. It makes and an end of chiefs.
Shall we die on the earth?
The earth does not get fat.
It makes an end of the women chiefs
Shall we die on the earth?

The earth does not get fat. It makes an
end of the royal women
Shall we die on the earth?
Listen O earth. We shall mourn because of you.
Listen O earth. We shall die on the earth?

The earth does not get fat. It makes an end of the beast
Shall we die on the earth?
Listen you who are asleep, who are
left tightly closed in the land.

Listen you who are asleep, who are
Left tightly closed in the land.
Shall we all sink into the earth?
Listen O earth, the sun is setting tightly
We shall all enter into the earth.

(a). Identify the genre above (2 marks)

……

……

(b). Explain the functions of the above genre (4 marks)

……

……

……

……

(c). Explain the meaning of the words, "The earth does not get fat" (2 marks)

……

……

……

(d). Identify **two** aspects of style and comment on their effectiveness (6 marks)

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(e). What is the speaker's attitude towards the subject. (2 marks)

……

……

……

(f). ExplainTwo characteristics of the genre above (2 marks)

……

……

……

……

(g) Under what circumstances is the genre likely to be performed and for what purpose? (2 marks)

……

……

……

……

4.Rewrite the following sentences according to the instructions after each (3 marks)

(a) You can do better than this. (Begin: This ……..)

……

(ii) Having failed once, I do not want to fail again. (Begin. As……)

……

(iii) The teacher asked Kamau if he would go home that day or the following day. (Change to direct speech)

……

(b) ***Using the verbs in brackets, replace the underlined words and phrases with correct phrasal verbs*** (3 marks)

(i) The two friends met each other accidentally……..(run) in town

(ii) The city council askariesdemolished ……kiosks in the city Centre (bring)

(iii) Otienovisited ……..us on his way to town (call)

(c) ***Complete each of the following sentences with the appropriate prepositions*** (3 marks)

(i) Many people think that manual labour is……their dignity

(ii) The judge was prejudiced……the accused from the beginning.

(iii) John has retired……private life.

(d) ***Supply one word which means the same as the underlined phrases in the following sentences*** ***(2 marks)***

(i) The man who broke into the house was finally arrested……..

(ii) The kitchen was filled with a pleasant smell from the day's recipe ……..

(e)***Explain the differences in meaning between the sentences in each of the pairs given below*** (4 marks)

I. I saw parents in the school library

II, I saw “parents” in the school library

……

……

……

I. His brother who lives in Lamu is a mechanic
II. His brother, who lives in Lamu, is a mechanic

……

……

……

101/3 - ENGLISH
PAPER 3
(CREATIVE COMPOSITION AND ESSAYS BASED ON SET TEXTS)
TIME: 2 ½ HOURS

Instructions
(a) Answer three questions only.
(b)Question one and two are compulsory
(c)In question one, choose one composition either a or b. In question 2, all the questions are compulsory.

1. Imaginative composition. (20marks)

Either:

a) Write a composition beginning:

Looking at my father, I knew my brother and I were in hot soup.....

Or

Write a story to illustrate the saying

"All that glitters is not gold"

2. The compulsory set text

BLOSSOMS OF THE SAVANNAH

(a)'Women are their own enemies .'Write an essay exemplifying the truth of this statement using Blossoms of the Savannah .(20mks)

(b)'Not all aspects of culture and traditions are bad.' Drawing your illustrations from the novel Blossoms of the Savannah ,validate the above assertion .(20mks)

GEOGRAPHY PAPER 1
FORM 3

SECTION A:

ANSWER ALL THE QUESTIONS:

1. a. State three forces that influence the shape of the earth. (3 mks)

   b. State three proofs that show that the earth is spherical. (3 mks)

2. a. Distinguish between a rock and a mineral. (2 mks)

   b. Give the metarmophic equivalent of the following rocks. (3 mks)

Original rock	metarmophic
Granite –	
Limestone –	
Shale –	

3. a. What is the longitude of a place M whose local time is 11.00 am. If the local time at longitude 30^{o}E is 2.00 pm. (3 mks)

   b. State the effect of the International Date Line. (1 mk)

4. a. What is Mass Wasting. (2 mks)

   b. State 3 factors which affects the rate of mass wasting. (3 mks)

5. a. Define the term Vulcanicity. (2 mks)

   b. Name i. Two Intrusive landforms (2 mks)
   ii. Two Extrusive landforms (2 mks)

SECTION B:
ANSWER QUESTIONS *SIX* (COMPULSORY) AND ANY OTHER TWO QUESTIONS.

6. Study the map of Karatina (1:50,000) sheet 121/3 provided and answer the following questions.

   a. i. What type of map is Karatina? (1 mk)
   ii. Convert the scale used in the map into a statement scale. (2 mks)
   iii. Outline 3 marginal information which you can be able to identify from the map given. (3 mks)

   b. i. Citing evidence from the map, use list three social functions of the area covered by the map. (6 mks)
   ii. Name 3 human made features from the map. (3 mks)

   c. i. Citing evidence from the map explain three economic activities of the area covered by the map.

   ii. Describe the drainage of the area covered by the map. (4 mks)

7.a. i. Name three types of faults. (3 mks)

ii. Apart from compressional force explain two other processes that may cause faulting. (4 mks)

b. With aid of diagrams, describe how compressional forces may have lead to the formation of the Great Rift Valley. (8 mks)

c. Explain five ways in which faulting is of significance to human activities. (10 mks)

8. a. The table below shows Rainfall and Temperature figures of a station in North America.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Rainfall in mm	15	8	8	13	31	51	51	51	28	25	18	20
Temp (^oC)	-22	-19	-12	-1	4	10	11	11	5	-11	-18	-20

a. On the graph paper provided, draw a bar graph to represent the rainfall figures. (Use a vertical scale of 1cm represent 10 mm) (5 mks)

b. Give four characteristics of a bar graph you have drawn. (4 mks)

c. i. Calculate the mean of temperature for the station. Show your working. (2 mks)

ii. State five characteristics of the climate experienced in the station. (5 mks)

d. You intend to carry out a field study on vegetation around the station with the above climate.

i.. State 3 methods you would use to collect the data. (3 mks)

ii. Highlight 3 methods you are likely to use to record the data. (2 mks)

iii. State 3 problems you are likely to face during the field study.

9. a. Name three types of physical weathering. (3 mks)

b. i. Give three factors that influence the rate of weathering. (3 mks)

ii. Describe two causes of biological weathering. (6 mks)

c. i. Give five types of chemical weathering. (5 mks)

ii. Explain four significances of weathering to human activities. (8 mks)

10. a. What is aridity? (2 mks)

b. What is desertification. (2 mks)

c. State five causes of aridity and desertification. (5 mks)

d. i. Explain 5 effects of aridity and desertification. (10 mks)

ii. Suggest 3 possible solutions to aridity and desertification. (6 mks)

GEOGRAPHY PAPER 2
FORM 3:

SECTION A:

ANSWER ALL THE QUESTIONS IN THIS SECTION:

1. a. Define the term Geography? (2 mks)
   b. Outline 4 importances of Geography in the learning process. (4 mks)

2. a. State 4 layers of the earth. (4 mks)
   b. Name the boundary that separate:- (2 mks)
      i. The crust and Mantle.
      ii. The mantle and the core.

3. a. State 2 effects of earths rotation. (2 mks)
   b. Outline 3 causes of earth movements. (3 mks)

4. a. Give three examples of rapid mass movements. (3 mks)
   b. Name 3 fold mountains of Alphine Orogeny. (3 mks)

5. a. What is agro-forestry. (3 mks)

SECTION B:

INSTRUCTIONS:
QUESTION 6 IS COMPULSORY AND ANY OTHER TWO:

6. The table below shows temperature and rainfall date of station X.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temp. ^{o}C	12	13	14	17	19	22	24	26	24	20	16	13
Rainfall in (mm)	112	84	74	41	46	15	10	5	41	79	130	137

   a. Use the data to calculate
      i. The mean monthly temperature. (3 mks)
      ii. The mean monthly Rainfall. (3 mks)
      iii. The median rainfall. (2 mks)
      iv. The temperature and rainfall range. (4 mks)

   b. Use the rainfall data to draw a simple line graph. (7 mks)

   c. State 3 advantages of using a simple line graph. (3 mks)

   d. Outline clearly 3 disadvantages of using this technique. (3 mks)

7. a. Define the term vegetation. (2 mks)

   b. i. State and explain 4 factors which influences the distribution of vegetation. (8 mks)
      ii. Explain clearly 4 uses of vegetation. (8 mks)

c. i. Give 3 characteristics of Savanna Grasslands. (3 mks)

ii. Fill in the blank spaces. (4 mks)

Temperature grassland	Where its found
Prairies	-
Steppes	-
Pampas	-
Veldt	-

8. a. i. Define the term forest. (2 mks)

ii. Explain five uses of forests and forest products in Kenya. (10 mks)

b. i. Outline any 4 problems facing forestry in Kenya. (4 mks)

ii. Highlight five forest conservation measures commonly used in Kenya. (5 mks)

c. Compare and contrast softwood forestry in Canada and Kenya. (4 mks)

9. a. i. Define the term mining. (2 mks)

ii. State three ways in which minerals occur. (3 mks)

b. i. State and explain 4 factors that influence the occurrence and exploitation of minerals.(8 mks)

ii. Explain any two methods employed in underground mining. (4 mks)

c. i. State 4 effects of mining in the environment. (4 mks)

ii. Highlight 4 problems facing mining in Kenya. (4 mks)

10. a. Name the minerals found in the following places in East Africa. (3 mks)

i. Ruhuhu valley

ii. Kariandusi

iii. Tororo

b. Describe the stripping method of open cast mining. (3 mks)

c. Study the data below and answer questions that follow:-

Percentage of mineral production.

COUNTRY A		**COUNTRY B**	
Lime stone	- 10%	Iron ore	- 50%
Coal	- 20%	Bauxite	- 10%
Iron ore	- 50%	Tin	- 10%
Trona	- 20%	Others	- 30%

i. Draw a dividend rectangle 10cm long to show the percentage of minerals mined in country A. (5 mks)

ii. State three advantages of using dividend rectangles to represent geographical data. (3 mks)

d. i. Name two areas where diamond is mined in South Africa. (2 mks)

ii. Describe the stages involved in the processing of diamonds. (4 mks)

iii. State 5 economic contributions of diamonds to the economy of South Africa.(5 mks)

FORM 3
HISTORY & GOVERNMENT PAPER 1

SECTION A: (25mks)
Answer all questions in this section

1. Give two branches in the study of History and Government in Kenya (2mks)

2. Name the pre-historic site in Kenya where the Kenyapithecus fossil was discovered (1mk)

3. Identify two original inhabitants that the Agikuyu came across in Central Kenya as they settled in the area (2mks)

4. Give two economic reasons why the Cushites migrated form their original homeland (2mks)

5. Name two Historical monuments built by the Portuguese along the Kenyan Coast (2mks)

6. Give two types of Human Rights (2mks)

7. Name the Executive head of the colony in colonial Kenya (1mk)

8. Identify one condition when one may be denied the right to life (1mk)

9. Which was the main reason that enabled the British to conquer Kenya? (1mk)

10. What is democracy? (1mk)

11. Name the type of constitution used in Kenya (1mk)

12. Identify two development rights of children (2mks)

13. Name two communities in Kenya that showed mixed reaction to colonial Kenya (2mks)

14. Name the person who mobilized the Agiriama resistance against the British (1mk)

15. Name the agreement that marked the end of the scramble and partition of East Africa (1mk)

16. Name the Agikuyu leader who led the raid against the British at Fort Smith (1mk)

17. Give two reasons why the Bukusu resisted British invasion (2mks)

SECTION B (45mks)
Answer any 3 questions from this section

18. a) Give the duties of Portuguese captains along the coast (3mks)
    b) Explain the impact of Portuguese rule along the coast (12mks)
19. a) Give three ways in which the Luo interacted with the Abagusii in the 19th century (3mks)
    b) Describe the social and political organization of the Luo (12mks)
20. a) State the causes of the Nandi resistance to British rule (5mks)
    b) Explain the results of Nandi resistance (12mks)
21. a) State reasons why Nabongo Mumia of Wanga kingdom collaborated (5mks)
    b) Explain the impact of Wanga collaboration (10mks)

SECTION C (30mks)
Answer any two questions

22. a) Give three symbols of National Unity (3mks)
    b) Explain six factors which undermine National Unity in Kenya (12mks)
23. a) State three methods used by the British to establish their rule in Kenya (3mks)
    b) Describe the organization of the central government in Kenya during the colonial period (12mks)
24. a) Give five political duties of a Kenyan citizen (5mks)
    b) Explain five reasons why national integration is important in Kenya (10mks)

FORM 3
HISTORY & GOVERNMENT PAPER 2

SECTION A: (25mks)
Answer all questions in this section

1. Identify one specific tool invented by Homo Sapiens that greatly improved his way of life (1mk)

2. Identify the term used to refer to animal and plant remains found by Charles Darwin (1mk)

3. Identify two sub species of the Homo Sapiens (2mks)

4. Why is the period of early man referred to as Stone Age? (1mk)

5. Name the famous building in Athens built in honour of the goddess Athena (1mk)

6. Who discovered penicillin? (1mk)

7. State two advantages of using bicycles as a mode of transport (2mks)

8. State two factors responsible for the decline of Merowe as an urban centre (2mks)

9. Identify the title given to the state kings in the Asante Kingdom (1mk)

10. Give the main advantage of the cell phone (1mk)

11. Identify two treaties that Lewanika of the Lozi signed with the British (2mks)

12. Which European leader was responsible for convening of the Berlin conference 1884 – 1885? (1mk)

13. Give two strategies employed by Samori Toure in his war of resistance against the French (2mks)

14. Apart from river Congo, name the river that was declared free to all Europeans for navigation at the Berlin conference (1mk)

15. What was the main contribution of religion in the Maji maji uprising against German rule in Tanganyika? (1mk)

16. Give two reasons why the British adopted the system of indirect rule in Northern Nigeria (2mks)

17. Define the term the Egyptian question in the scramble and partition of Africa (1mk)

18. List two communes in Senegal where Assimilation was successfully applied (2mks)

SECTION B (45mks)
Answer any three questions

19. a) What factors led to the development of early agriculture in Mesopotamia? (5mks)
    b) Explain five factors that have led to shortage of food in Third World countries (10mks)
20. a) Give three stages of evolution of man (3mks)
    b) Describe six ways in which the discovery of fire improved man's way of life (12mks)
21. a) Identify three ways in which water was used in industries during the 18^{th} century (3mks)
    b) Explain six social results of the Industrial revolution in Europe during the 18^{th} century (12mks)
22. a) Identify five causes of Maji maji rebellion in 1905 – 1907 (5mks)
    b) Why were the African communities defeated by the Germans during maji maji rebellion? (10mks)

SECTION C (30mks)
Answer any two questions

23. a) Identify 3 European powers that acquired colonies in Africa. (3mks)
    b) Explain six reasons why the Lozi collaborated with the British during colonization (12mks)
24. a) Give three economic activities of the Baganda in the pre-colonial period (3mks)
    b) Describe the political organization of the Buganda in the pre-colonial period (12mks)
25. a) Outline five reasons why Samori Toure's second empire was not suitable (5mks)
    b) Explain five factors that led to the defeat of Samori Toure by the French (10mks)

KISWAHILI

KARATASI YA 1

INSHA

MUDA: SAA 1¾

MAAGIZO

(a) Andika insha mbili. Insha ya kwanza ni ya lazima.
(b) Kisha chagua insha moja nyingine kutoka hizo tatu zilizobakia
(c) Kila insha isipungue maneno 400
(d) Kila insha ina alama 20

1. Wewe ni katibu wa chama cha waandishi habari chipukizi shuleni mwako. Andika kumbukumbu za mkutano uliofanyika mnamo MACHI 7, 2014.

2. Fahali wawili wapiganapo ziumiazo ni nyasi.

3. Anza kisa kwa maneno haya:

   Mtoto aliletwa mbele yangu akiwa anatiririkwa damu usoni. Singeweza kumtambua hadi pale…….
   ……..……
   ……

4. Mvua husababisha madhara mengi. Jadili

KISWAHILI

KARATASI YA 2

UFAHAMU, UFUPISHO, MATUMIZI YA LUGHA NA ISIMU JAMII MUDA:

SAA 2 ½

1. UFAHAMU (Alama 15)

Soma makala yafuatayo kasha ujibu maswali

Huku ulimwengu unapoingia katika teknologia ya tarakilishi na sera ya utandaridhi, ukweli wa mambo ni kuwa akina mama wamezinduka. Suala la usawa wa kijinsia limeanza kushamiri kote duniani na ole wake mwanamume yeyote ambaye hajawa tayari kutembea na majira. Lakini hebu tuchunguze jambo hili kwa makini zaidi.

Usawa wa jinsia ni nini? Usawa wa kijinsia ni usawa wa binadamu wote; wawe wake au waume. Usawa huu unapaswa kudhihirika katika kugawa nafasi za kazi, utoaji wa elimu, nafasi za uongozi na nyanja nyinginezo zozote za maisha.

Ubaguzi wa aina yoyote ile hasa dhidi ya mwanamke ni jambo linalokabiliwa na vita vikali sana ulimwenguni kote.

Dahari na dahari, hasa katika jamii za kiafrika, kumekuwa na imani isiyotingisika kuwa mwanamke ni kiumbe duni akilinganishwa na mwanaume. Kwa hivyo mwanamke amekuwa akifanyiwa kila aina ya dhuluma ikiwepo kupigwa, kutukanwa, kudharauliwa, kunyimwa haki zake, kunyimwa heshima na mambo kama hayo. Lakini je, ni kweli kuwa mwanamke ni kiumbe duni asiyefaa kutendewa haki?

Tukichunguza jamii kwa makini tunaweza kuona mara moja kuwa hivyo ni imani potofu isiyo na mashiko yoyote. Ukiimulika familia yoyote ile iliyopiga hatua kimaendeleo, uwezekano mkubwa ni kuwa mume na mke wa familia inayohusika wana ushirikiano mkubwa. Mume anamthamini mke wake na hadiriki kufanya maamuzi muhimu yanayoweza kuathiri maendeleo ya familia bila kumhusisha mke. Mume kama huyo huketi na mkewe, wakishauriana na kufikia uamuzi bora.

Tukitoka katika muktadha wa kifamilia na kumulika ulimwengu wa kazi iwe ni katika afisi za kiserikali au kwenye makampuni binafsi, ukweli ni kwamba kiongozi yeyote yule aliyefaulu katika usimamizi wake mara nyingi huwa na mke nyumbani ambaye wanashauriana kila uchao kuhusu kazi anayofanya hata kama mke hafanyi kazi mahali pale. Hisia na

mawaidha anayotoa mke kwa mume wake ni tunu na huenda asiyapate kwingineko kokote hata katika vitabu vya kupigiwa mifano. Hii ni mojawapo ya sababu ambayo huwafanya viongozi wa nchi mbalimbali kupenda sana kuwatambulisha wake na familia zao waziwazi kwa vile wanajua kuwa jamii inathamini sana msingi wa jamii. Kiongozi ambaye hana mke au familia au yule ambaye mke wake hatambuliki, hutiwa mashaka na jamii hata kama ni kiongozi aliye na azma ya kushikilia kazi ngumu ya kuongoza umma.

Tukirudi nyuma kidogo na kupiga darubini mataifa ya mbali, tunaweza kuwaona wanawake mashuhuri walio uongozini ambao hadi waleo unapigiwa mfano. Wanawake mashuhuri waliotoa uongozini ambao hadi waleo unapigiwa mfano. Wanawake hao walisimamia mojawapo ya mataifa yenye uwezo na ushawishi mkubwa zaidi duniani. Ingawa wengi wao sasa wameng'atuka, uongozi wao bado unakumbukwa hata baada ya miaka mingi ya wao kuamua kupumzika, Mifano ni kama: Bi Margaret Thatcher aliyekuwa waziri mkuu wa Uingereza, Bi Bandranaike wa Sri Lanka, Golda Meir wa Israel na wengine wengi katika mataifa kama Indonesia, Ufilipino, Bangladesh, Pakistani na kwingineko.

Katika kufikia tamati, tunapozungumza kuhusu jinsia, hatuna budi kugusia kitafsili masuala nyeti. Kwanza, imani ya kushikilia kikiki tamaduni zisizofaa, ni jambo linalofaa kuchunguzwa kw makini. Kwa mfano, kuna badhi ya jamii ambazo humlazimu mke kurithiwa baada ya kifo cha mumewe. Vile vile baadhi ya jamii za kiafrika zinashikilia kuwa mwanamke hana haki ya kurithi. Kutokana na imani hii, wanawake wengi huishi maisha ya taabu baada ya kutengana na waume zao kwa vile hawana haki ya kurithi chochote kutoka kwa wazazi wao hata kama wazazi hao wana mali nyingi kupindikukia. Mali ya wazazi ni haki ya watoto wa kiume wala si watoto wa kike! Hili ni jambo la kusikitisha mno.

Isitoshe, wanawake hukumbwa na kizingiti kingine wanapojaribu kumiliki mali ya waume zao baada ya waume hao kukata kamba. Sababu ni kuwa, baada ya hao wenda zao kuwekwa kaburini, vita vya umiliki wa mali huanza mara moja na mwishowe yule mke maskini hujikuta hana hata mahali pa kulala sembuse mali waliyochuma na mali yake yote kunyakuliwa na aila ya mumewe . Jambo hili linaonyesha namna tulivyoachwa nyuma na uhalisia wa mambo. Ni lazima jamii izinduke na itoke kwenye kiza hiki chenye maki nzito.

MASWALI

(a) Ina maana gani kusema kuwa wanaume hawana budi "kutembea na majira?"

(alama2)

……

……

(b) Kabla ya uzinduzi huu kuhusu usawa wa kijinsia, wanawake wamekuwa wakitendewa dhuluma za kila aina. Taja tatu. (alama 3)

……

……

(c) Je, ni kwa nini viongozi wengi hupenda kujitambulisha na familia zao? (alama 2)

……

……

(d) Je, unaamini kuwa hisia na mawaidha anayotoa mke kwa mume wake ni tunu na huenda yasipatikane kwingineko? Fafanua (alama 2)

……

……

(e) Je licha ya kunyimwa haki yake ya kujiamulia, ni matatizo yapi mengine yanayoweza kumukumba mke anayelazimishwa kurithiwa? (alama 3)

……_

(f) Eleza maana ya maneno yafuatayo jinsi yalivyotumiwa katika muktadha. (alama 3)

Kushamiri……

……

Hulka……

……

Azma……

……

MUKHTASARI (Alama 15)

Soma taarifa ifuatayo kasha ujibu maswali yatakayofuata.

Binadamu hupenda kujivika vilemba vingi mno.Tunapenda kuheshimiwa na kutukuzwa na kila mtu. Tunapenda kuombwa ushauri na wote ambao wanahitaji ushauri! Tunapenda kutambuliwa popote tuendapo.

Watu wengi hukataa kufanya jambo la halali kwa kuhofia kuitwa wajinga. Mfano mzuri ni pale ambapo mtu amekosea kidogo katika kutenda jambo; utaona kuwa mtu huyo anaona ugumu wa kuomba radhi au samahani ati kwa sababu ataonekana mjinga.

Je, ni mara ngapi mkurugenzi ameita mkutano na katika barua yake akatisha kuwaadhibu watakaochelewa na mwishowe ni yeye mwenyewe anayechelewa? Tena huwa haombi msamaha. Ataulaumu usingizi uliomchukua, au gari lililomleta.

Aghalabu tunapowakuza watoto wetu, tunawafunza maadili mema. Tunawahimiza wale wadogo kwamba ni vizuri kuomba radhi kwa wakubwa wako unapowakosea. Lakini kumbuka kwamba kukosea ni kwa binadamu wote. Mtu anaweza kukukosea kwa makusudi au kwa bahati mbaya. Kwa hivyo tunapaswa kufahamu kwamba, tunapofanya makosa ni lazima tuombe msamaha, iwe ni kwa wakubwa au kwa wadogo, ili kuondoa kero.

Waja wengi huogopa kusimama mbele za watu na kuwasilisha au kutenda jambo fulani. Kisa na maana, mtu hataki kutenda jambo fulani halafu akosee. Hajiamini na anaogopa kuwa huenda watu wakaona kasoro yake. Lakini kumbuka, kukosa njia ndiko kuijua.

Huenda ikawa watu wanajadili maswala ibuka kama vile ufisadi, kuavya mimba, matumizi ya dawa za kulevya, ukimwi, uzuiaji wa kizazi na kadhalika... labda huyaungi mkono maoni ya watu wengine kwa sababu ya imani na maadili yako. Hata hivyo, hutaki kusimama ukatoa msimamo wako mbele za watu ingawa dhamiri yako imekwazika. Baadaye utasikika ukiwalaumu watu wengine ilhali ulikataa kusimama na kutetea msimamo wako.

Wengi wetu hujichukua kuwa watu muhimu sana. Wanaona kuwa sherehe au mkutano wowote hauwezi kufaulu ikiwa wao hawako. Wanapokuwa kwenye hiyo mikutano wao hutaka watambuliwe. Hupenda majina yao yatajwe. Haya huwaridhisha , lakini swali ni je, kuwepo kwao ni muhimu kiasi hicho? Kumbuka kwamba mkutano ungeendelea vizuri bila kuwepo kwao. Kwa hivyo, tusiwe watu wa kutaka kutambuliwa kila tunapoenda mahali. Pia, tusilalamike ikiwa hatukuhusishwa katika jambo fulani.

Unaposhuhudia jambo fulani, kama wizi au ajali, usiwe na woga wa kutoa usaidizi kwa kutoa ushuhuda. Wengine hata huogopa kutoa usaidizi huo, hata kwa manusura wa ajali za barabarani, eti kwa sababu wanahofia kuitwa mahakamani kutoa ushuhuda. Kuna shida gani kuenda kusema yale uliyoyashuhudia bila kuongeza au kutoa chochote?

MASWALI

a) Bila kupoteza maana, fupisha aya ya kwanza hadi ya nne.(maneno 60) (alama 7)

Nakala chafu:

Nakala safi:

b) Fupisha aya nne za mwisho. (maneno 50) (alama 8)

Nakala chafu.

Nakala Safi.

MATUMIZI YA LUGHA (Alama 40)

a. Taja tofauti iliyopo kati ya sauti /f/ na /v/ (alama 1)

……

……

b. Andika sentensi ifuatayo ukitumia kinyume cha neno lililoandikwa kwa herufi ya mlazo: (alama 1)

Binadamu hawezi *kumuumba* mwenzake.

……

……

c. Andika sentensi ifuatayo upya ukizingatia kisawe cha neno lililopigwa mstari:

(alama 1)

Mtoto mwenye <u>hamaki</u> hawezi kuelewa maagizo.

……

……

d. Andika kwa usemi halisi: (alama 3)

Yule mshukiwa aliyekamatwa na polisi alisema kuwa papo hapo ndipo alipoficha ule mkufu.

e. Tunga sentensi inayoshirikisha nomino uliyopewa pamoja na vipashio vifuatavyo vya sarufi: kivumishi kisisitizi, kitenzi kishirikishi, kitenzi, na kielezi cha wakati.(alama2)

Pinde……

…… f.

Sahihisha sentensi zifuatazo :

(i)Ndegwa alipeana kalamu yake kwa mwanafunzi. (alama 1)

……

……

(ii)Siku hizi mahitaji imezidi na pesa haitoshi. (alama 1)

……

……

g. Tunga sentensi mbili kubainisha maana mbili tofauti za neno: **rudi.** (alama 2)

(i) ……

(ii)

……

……

h. Akifisha: (alama 2)

Mtume asimame nusura aingie kwenye shimo la taka

……

i. Unda nomino kutokana na kivumishi:**refu** (alama 1)

……

j. Onyesha chagizo katika sentensi ifuatayo: (alama 1)

Watu wanne walipeperushwa juu kwa juu na upepo mkali.

……

……

k. Tunga sentensi ukitumia**: isije ikawa** (alama 2)

……

l. Andika upya sentensi ifuatayo ukitumia virejeshi vya tamati: (alama 2)

Mwanafunzi anayefanikiwa maishani ni yule anayesoma kwa bidii na pia anayewatii wazazi wake.

……

……

m. Ainisha viambishi awali na tamati katika sentensi: **Anikumbukaye** (alama 2)

……

……

n. Kanusha kwa udogo: Mwizi aliiba kikapu na ng'ombe. (alama 2)

……

……

o. Andika umoja wa sentensi: (alama 1)

Kwato za wanyama hutufaidi.

……

……_

p. Andika kwa wingi : (alama 4)

Wimbi hilo la maji lilimhofisha mvuvi akashindwa kutupa wavu wake majini.

……

……

q. Andika katika hali ya kutendewa: (alama 2)

Kuku hawa wamemsumbua Sabina kwa muda mrefu.

……

r. Tumia sentensi moja moja kubainisha tofauti kati ya sentensi **sahili** na sentensi **ambatano** (alama 2)

……

……

s. Changanua sentensi ifuatayo kwa njia ya mistari au mishale:

Mwanasiasa aliyewapuuza wanaeneo bunge lake amekomelewa. (alama 4)

……

……

t. Andika katika usemi wa taarifa. (Alama 2)

"Karibu Bakari, tafadhali kaa", Maimuna alisema. "Asante, je, habari za nyumbani?" Bakari aliuliza.

……

……

u. Taja aina ya yambwa iliyopigiwa mstari katika sentensi uliyopewa: (alama 1)

Mpishi amempikia <u>mgeni</u> wali vizuri.

……

……

……

ISIMUJAMII (Alama 10)

(a) Taja nadharia zozote mbili zinazohusiana na chimbuko la lugha ya Kiswahili. (alama 2)

……

……

(b) Kwa kutolea mifano, eleza sifa zozote nne za kimsingi za sajili inayoweza kutumika darasani. (alama 8)

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FORM 3 MATHEMATICS PAPER 1

SECTION 1

Answer all questions in this section

1.Find without using tables or a calculator the value of

(3mk|)

$$\frac{1.33 \times 0.51}{0.19 \times 0.0017}$$

2. The ratio of the size of the exterior angle to the interior angle of a regular polygon is 1:3. Determine the number of sides of the polygon and name it. (3mk)

3. Given that $2x^2-kx+18$ is a perfect square, find k and hence solve the equation $2x^2-kx+18=0$ by factorization. (4mk)

4. Work out using logarithms to 4 s.f

$$\frac{\sqrt{(6.225\log 1.001)}}{(56.7\times 0.031)^3}$$

(4mk)

5. Mr. Kanja,Miss Kanene and Mrs Nyaga have to mark a form three math contest for 160 students. They take 5mins, 4mins, and 12mins respectively to mark a script. If they all start to mark at 9.00 am non-stop, what is the shortest time they can take to complete the marking?

(3mk)

6. Jackie takes 5minutes to run a distance of 1km in a race. Express her speed in

a) km/hr

b) m/s (2mk)

7. Use reciprocal tables to find the value of f given that $\frac{1}{f} = \frac{1}{11} + \frac{2}{13}$ (3mk)

8. A man left $\frac{1}{5}$of his estate in Kerugoya to his wife and $\frac{1}{3}$ to each of his two sons .The remainder was to be shared equally among his six brothers. If the estate was worth sh 3 456 000, how much did each of those people get? (3mk)

9. A distance of 12km is represented by a length of 4cm on a map. Given that the scale of the map is 1:n, find the

a) value of n

b) actual area in hectares of a field on the map with an area of $32cm^2$ (3mk)

10. Solve the equation $\frac{1}{3}(x+4)-\frac{1}{2}(2x-4) = 2$ (2mk)

11. The sides of a right angled triangle measured to the nearest cm are 5cm, 12cm and 13cm

Determine the

a) limits within which the measured dimensions lie (1mk)

b) percentage error in the area of the triangle. (3mk)

12. Form a quadratic equation in the form $ax^2+bx+c=0$ whose roots are b and twice the negative reciprocal of b. (3mk)

13. The coordinates of points A and B are A (2, 3).B (4,–5). M is the midpoint of vector AB.

Determine the coordinates of point M and the magnitude of vector BM. (3mk)

14. The equation of line L is y=3x–4 and is perpendicular to line H. They cross each other at the y-intercept of line L. Find the equation of line H. (3mk)

15. In a circle radius 10cm, an arc PQ subtends an angle of $\frac{5}{12}\pi$ radians at the centre of the circle. Calculate the radius of another circle whose circumference is equal to the length of arc PQ

(4mk)

16. Solve for a in $3^{2a+3} = 2187$ (3mk)

SECTION 2

Answer any 5 questions in this section

17. Four towns are situated in such a way that town Q is 500km on a bearing of 120º from P. Town R is 240km on a bearing of 210º from town P, while town S is due north of town Q and due east of town P.

a) Draw a sketch diagram showing the relative positions of P, Q, R and S. (2mk)

b) Find by calculation

i) the distance QR (2mk)

ii)the distance QS (2mk)

iii)the angle PRQ (2mk)

iv)area of triangle PQS (2mk)

18. a) Represent the following inequalities graphically by shading the unwanted region

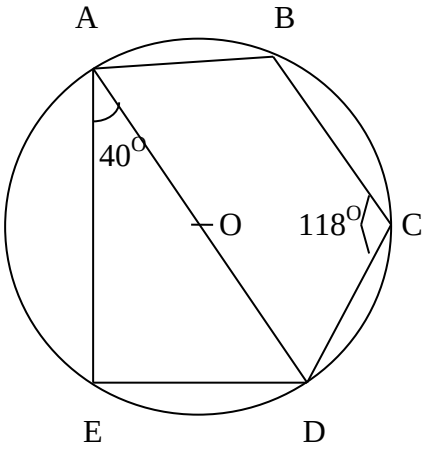
$x \geq 0, y \geq 0, x+y \geq 5, x+y \leq 10, y \leq 7, x \leq 7$ (6mk)

b) write down the coordinates of one point that is inside the wanted region (1mk)

c) Name the figure formed by the unshaded region (1mk)

d)measure and find the sum of all the angles in the figure formed in c) above. (2mk)

19. In the figure below, O is the centre of the circle and $\angle EAD=40^{\circ}, \angle BCD=118^{\circ}$



Find giving reasons

a) $\angle ADE$ (2mk)

b) reflex $\angle EOD$ (2mk)

c) ∟EBD (2mk)

d) ∟EAB (2mk)

e) ∟DAB (2mk)

20. The marks scored in a form three maths exam were recorded as follows

69 70 72 40 52 60 22 31 78 53 28 67 63 54 57 48 47 56 55 62

75 38 37 44 62 64 58 39 45 48 65 50 85 46 47 57 35 34 58 64

62 37 41 42 36 54 82 48 53 57 56 72 56 48 44 55 78 59 50 45

a) Make a grouped frequency table with classes 20—29,30—39,40—49,etc (2mk)

b) What is the modal distribution of the test (1mk)

c) Calculate the mean of the data (4mk)

d) Calculate the median mark (3mk)

21. The velocity(v)of a vehicle measured at intervals of time(t) were recorded as follows

t(s)	0	2	4	6	8	10	12
v(m/s)	0	20	40	40	30	8	0

a) Represent this motion on a graph (3mk)

b) Calculate the acceleration (2mk)

c) Calculate the total distance travelled by the vehicle (3mk)

d)Calculate the average velocity of the vehicle (2mk)

22. A wooden stool is in the form of a frustum of a cone with slant edge 40cm,top diameter 30cm and bottom diameter 50cm.

a) calculate the perpendicular height of the stool (3mk)

b)calculate the total surface area of the stool in terms of π (3mk)

c)calculate the volume of wood used to make the stool in terms of π (3mk)

d)given that the density of the wood used to make the stool is 0.8g/cm³, calculate the mass of the stool in kg (1mk)

23. Using ruler and compasses only,

a) construct triangle ABC in which AB=5cm,BC=6cm and angle ABC=120º. (3mk)

b)measure angle ACB (1mk)

c)drop a perpendicular from C to cut AB produced at P. Measure CP. (2mk)

d)hence calculate area of triangle ABC to 1dp (2mk)

e)calculate the radius of a circle that passes through the vertices of triangle ABC (2mk)

24. The distance between two towns A and B is360km.A minibus left town A at 8.15a.m and travelled towards B at an average speed of 90km/hr. A matatu left town B at 10.35a.m on the same day and travelled towards A at an average speed of 110km/hr.

a)i)how far from A did they meet? (4mk)

ii)at what time did the two vehicles meet? (2mk)

b) A motorist left his home at 10.30a.m on the same day and travelled at an average speed of 100km/hr. He arrived at B at the same time as minibus. Calculate the distance from B to his home.
(4mk)

FORM THREE MATHEMATICS PAPER 2

SECTION 1

Answer all the questions in this section

1.Evaluate $\dfrac{36 - 8 \times -4 - 15 \div -3}{-3 \times -3 - 8(-6 + -2)}$ (3mk)

2.Simplify $\dfrac{a+b}{2} - \dfrac{2a-b}{3}$ (3mk)

3.Find the greatest number which divides 181 and 236 and leaves a remainder of 5 in each case (2mk)

4.A rectangle measures 20cm by 15cm.If each dimension is increased by 2.5cm, by what percentage is

a) the perimeter of the rectangle increased (2mk)

b)the area of the rectangle is increased (2mk)

5.The angle of elevation of the top of a tree from a point P on horizontal ground is 30º. From another point Q 8 metres from the base of the tree, the angle of elevation of the top of the tree is 48º.

a) Calculate to one decimal place the height of the tree. (1mk)

b) Calculate the distance between P and Q (2mk)

6.Given that $\cos\theta = -0.8070$, find θ for $0 \leq \theta \leq 720$ (3mk)

7.A piece of wire 40cm is bent to form a right-angled triangle whose hypotenuse is 17cm long. Find the lengths of the other two sides of the triangle (4mk)

8.Solve for x in $\log 5 - 2 + \log(2x+10) = \log(x-4)$ (3mk)

9. Solve the quadratic equation by completing of squares giving your answer to 3sf

$11x^2 - 13x + 3 = 0$ (4mk)

10. Rationalize the denominator and simplify

$$\frac{4\sqrt{5}+3\sqrt{2}}{2\sqrt{2}-\sqrt{5}}$$ (4mk)

11.Use a calculator to work out

a) $\sqrt[4]{\frac{186\times120}{490\times211}}$ (1mk)

b) $\sqrt[3]{\frac{62^2-270}{91\times4693}}$ (1mk)

12. A tourist from Kenya left for Ethiopia. He exchanged sh 9898 into Ethiopian Birr at the rate of 1 Eth.Birr=ksh7.95. He spent ¾ of the money he got and converted the balance back to Kenyan money at the rate of 1Eth.Birr=ksh7.98 Calculate what he finally got to 2dp (3mk)

13. Simplify the expression

$$\frac{9t^2-25a^2}{6t^2+19at+15a^2}$$ (3mk)

14. Three types of tea costing sh203,sh146 and sh197 per kg are blended in the ratio of 2:5:k. Find the value of k,if the blend when sold at sh221 per kg gives 30% profit (3mk)

15. A two digit number is such that 4 times the units digit exceeds the tens digit by1. If the digits are reversed, the number formed is decreased by 45. Find the number. (3mk)

16. A triangular field has dimensions 21m by 52m by 47m.

a) calculate the area of the field to the nearest m^2. (2mk)

b)calculate the length of a straight ditch dug from the largest angle meeting the opposite side at right angles. (1mk)

SECTION 2

Answer any 5 questions in this section

17. A bookseller bought a number of cartons of books at a cost of ksh 57600 from Kagumo bookstore. Had he bought the same books from Kerugoya bookstore, it would have cost him ksh 480 less per carton. This would have enabled him to buy 4 extra cartons of books for the same amount of money. By taking x to be the number of cartons of books he actually bought;

a) write an expression in x

i) for the cost of each carton he bought at Kagumo bookstore (1mk)

ii)for the cost of each carton had he bought from Kerugoya bookstore (1mk)

b)find the value of x (6mk)

c)the bookseller later sold all the books he had bought each carton at ksh 720 more than he had paid for it. Determine the percentage profit he made (2mk)

18. A cylindrical metal bar of diameter 14cm and length 2m is melted and moulded into spherical balls. In the process, 5% by volume of metal is lost and what remains makes balls of radius 3.5cm.

a)calculate the volume of metal used to make the balls. (3mk)

b)find to the nearest whole number the number of balls made (3mk)

c)find the total surface area of the metal bar (2mk)

d)find the total surface area of the balls made (2mk)

19.a) Draw the graph of $y=(2x-3)(x-1)$ for the interval $-2 \leq x \leq 4$ (6mk)

b)use your graph to solve

i)$2x^2-5x+3=0$ (1mk)

ii)$2x^2=3x+2$ (3mk)

20. a)Plot triangle ABC with coordinates A(1, 1), B(3, 1) and C(1,3) (1mk)

b)Plot A′B′C′ the image of ABC under an enlargement scale factor 2 centre A and write down it's coordinates (2mk)

c)Plot A″B″C″ the image of A′B′C′ under a reflection in the line x+y=0 and write down it's coordinates (3mk)

d)A″B″C″ is then reflected in the line y=0 to give A‴B‴C‴. Give the coordinates of A‴B‴C‴ (2mk)

e)Describe fully a rotation that maps A‴B‴C‴ onto A′B′C′ (2mk)

21Three businessladies Wanjiku, Muthoni and Njoki decided to buy a lorry. The .marked price of the lorry was 2.8million shillings. The dealer agreed that the ladies could pay a deposit of 60% of the marked price and the rest to be paid within a year.The ladies raised the deposit in the ratio of 3:2:5 respectively. At the end of the year the lorry had realized 2.08million shillings which the three shared in the ratio of their contribution. However, they were required to contribute for the balance of the lorry from these earnings again in the ratio of their original contributions.

a)calculate amount to be paid as deposit (1mk)

b)how much did each contribute to pay for the deposit? (3mk)

c)how much did Njoki receive at the end of the year? (1mk)

d)calculate the total amount Muthoni and Njoki contributed to pay for the balance. (3mk)

e)how much money did Wanjiku remain with after paying her share of the balance? (2mk)

22.a)Make a table and draw the graph of y= sinx–cosx for x in the range $0° \leq x \leq 360°$, with y values to 2dp and x intervals of 30° (6mk)

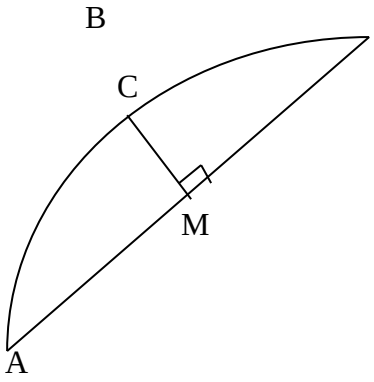
b)use the graph to find the value of y when

i) x=75° (1mk)

ii) x=255° (1mk)

c)find the values of x for which y= –0.9 (2mk)

23.The figure below is a segment of a circle centre O radius r units.CM is the perpendicular bisector of AB .



Given that CM=1cm and AB=$2\sqrt{3}$cm,

a)calculate the radius of the circle centre O from which the segment was cut (3mk)

b)calculate the angle that chord AB subtends at the centre of the circle (2mk)

c)hence calculate

i)the length of arc ACB (2mk)

ii)the area of the segment AMBC (3mk)

24.A rectangular sheet of metal which measures 120cm by 0.8m is 1.5mm thick and is made of material whose density is 2.2 g/cm³. From each of the four corners of the rectangle, a square of side 10cm is cut off and the remaining part folded to form an open cuboid.

a)calculate

i) the capacity of the cuboid in cm³ to the nearest whole number (3mk)

ii)the mass of the empty cuboid in kg to the nearest whole number (3mk)

b)the cuboid is filled with a liquid whose density is 0.75g/cm³. Calculate the mass in kg of the cuboid when full of the liquid (2mk)

c)calculate the mass of metal lost in kg (2mk)

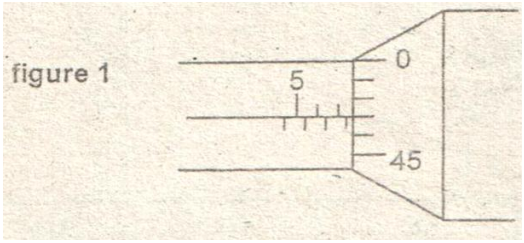
PHYSICS

PAPER 1

SECTION A 25MKS

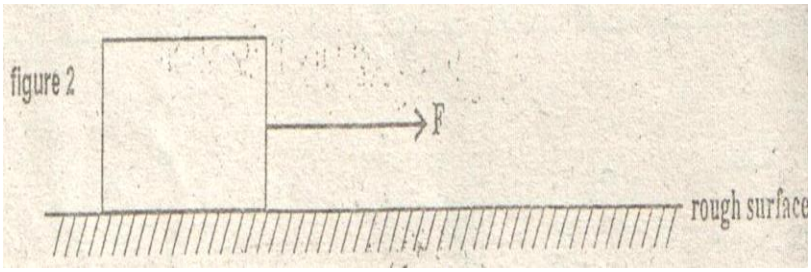
Answer all the questions in this section in the spaces provided.

1. Figure 1 shows a micrometers screw gauge with negative zero error of 0.02mm uses to measure the diameter of a ball bearing

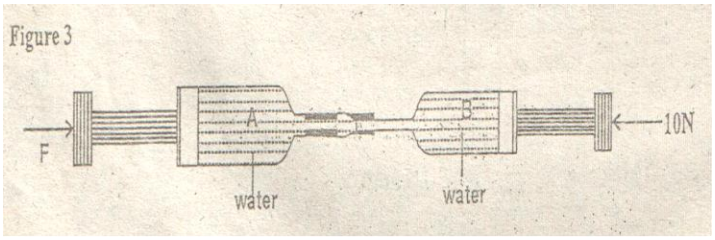


Determine the actual diameter of the ball bearing (2mks)

2. A wooden block resting on a rough surface is pulled by applying a horizontal force F as shown in figure 2 Indicate on the diagram, all the forces acting o the block other than the weight of the block (2mks)



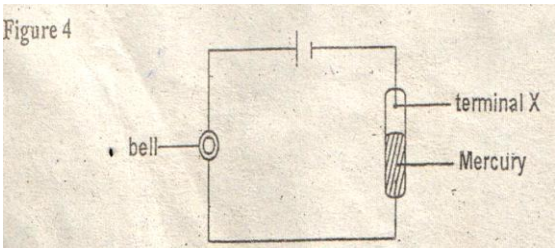
3. The diameter of cylinder A in figure 3 is double that of cylinder B



Determine the force F necessary to keep the system in equilibrium when a force F is applied as shown (3mks)

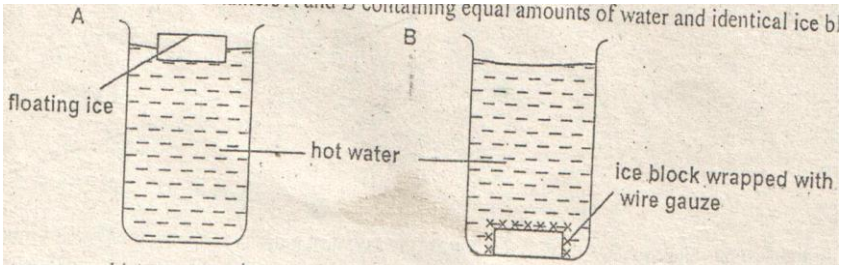
4. State one factor affecting the rate of diffusion of gases (1mk)

5. Figure 4 shows a simple fire alarm



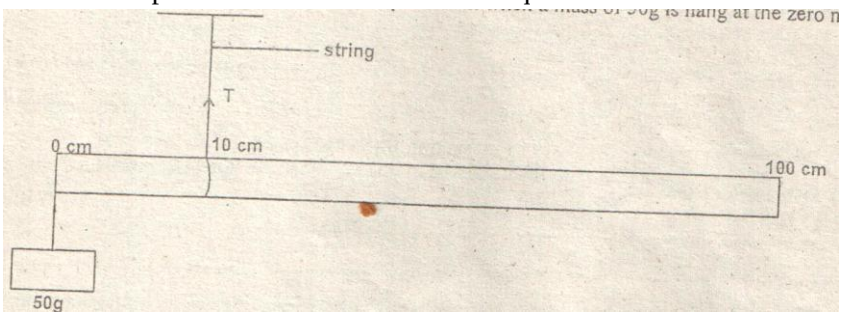
Explain how the alarm functions (1mk)

6. Figure 5 shows two identical containers A and B containing equal amounts of water an identical ice blocks



State with reason, which water cools faster, assuming the gauze absorbs negligible heat (2mks)

7. Figure 6 shows a suspended uniform meter rule in equilibrium when a mass of 50g is hang at the zero mark



Determine the tension T in the string (3mks)

8. A Bunsen burner in the laboratory can be tilted over a large angle and still get back to its original position once the tilting force is withdrawn. State two factors that are responsible for this observation (2mks)

9. Figure 7show a syringe full of water. The area of the piston is 1.5cm3 while the area of the outlet is 1.55mm2 The piston is pushed such that it moves from point B in 2 seconds

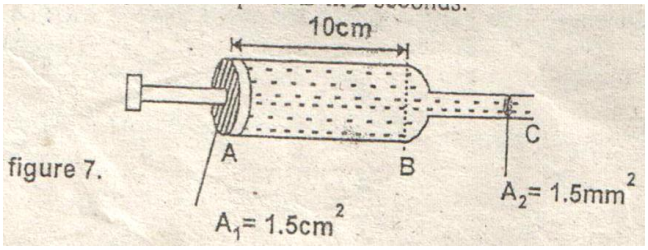


figure 7.

Determine the velocity of water at the outlet (3mks)

10. Sketch a velocity time graph for a body that is uniformly accelerated (1mk)

11. A high jumper loads on saw dust. Explain how the saw dust helps in reducing the force of impact (2mks)

12. A bullet of mass 20g moving with a velocity of 30m/s penetrates a sand bag and is brought to rest in 0.05s. Find the average retarding force of the sand (3mks)

SECTION B 55 MKS

13. a) State Hooke's law for a spiral spring (1mk)

b) In an experiment, a spiral spring was hung vertically from a stand and various weights attached in turn to its lower end. The extension of the spring for the various weight was noted. The results were recorded as shown in the following table.

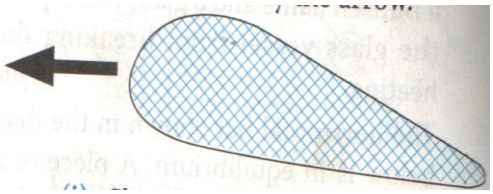
Load(N)	0	0.2	0.4	0.6	0.8	1.0	1.1
Extension (cm)	0	0.95	1.9	2.9	3.9	5.5	7.25

i. Plot the graph of load (y-axis) against the extension of the spring (5mks)
ii. From the graph, determine the elastic limit of the spring (1mk)

iii. From the graph, determine the spring constant within Hooke's law (4mks)

14. State what is meant by streamline flow. (1mk)

b) The figure below shows the cross section of an aeroplane wing (aerofoil), with the aeroplane moving in the direction shown by the arrow.



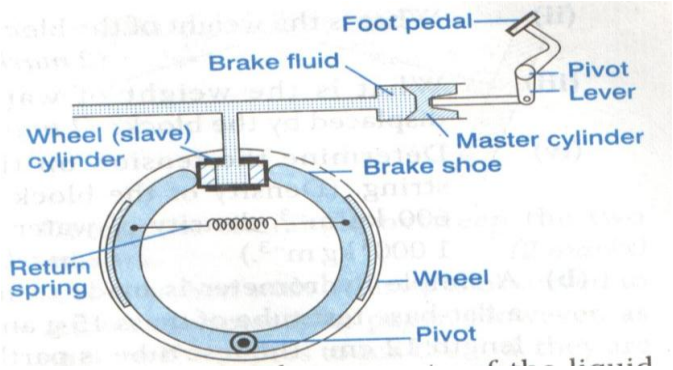
i. Sketch streamlines to show how air flow fast the with as the aeroplane moves (1mk)

ii. Explain how dynamic lift of the aeroplane is caused by the wing. (3mks)

c) A water pipe of diameter 5.2cm is connected to another pipe of diameter 1.3cm. The speed of the water in the smaller pipe is 3ms-1. What is the speed of the water in the larger pipe? (3mks)

15. a) Explain how a person is able to draw milk from a glass using a straw (2mks)

b) The following diagram shows a simplified hydraulic braking system of a car.



i. State the property of the liquid (oil) that makes it more suitable for use as a brake fluid than a gas (1mk)

ii. Explain how the system works, starting from when the driver presses the foot pedal (4mks)

iii. Why would the system not function properly if air leak into the cylinder? (1mk)

16. a) In an experiment to demonstrate Brownian motion, smoke was placed in an air cell and observed under a microscope, Smoke particles were observed to move randomly in the cell.
    i. Explain the observation (1mk)

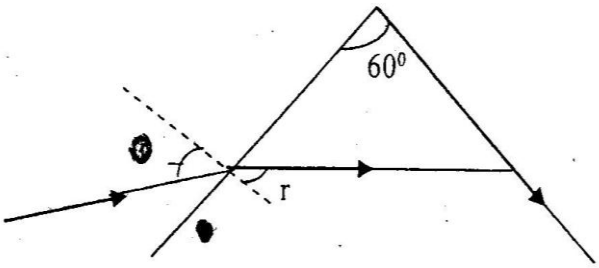
    ii. Give a reason for those of smoke in this experiment (1mk)

    iii. What would be the most likely observation if the temperature in the smoke cell was raised? (1mk)

    b) An oil drop of average diameter 0.7mm spreads out into a circular patch of diameter 75cm on the surface of water in trough.
    i. Calculate the average thickness of a molecule of oil (4mks)

    ii. State two assumptions made in (i) above when calculating the thickness of the oil molecule (2mks)

17. The figure below shows path of ray of yellow light through a glass prism. The speed of yellow light in the prism is 1.88 x 108m/s.



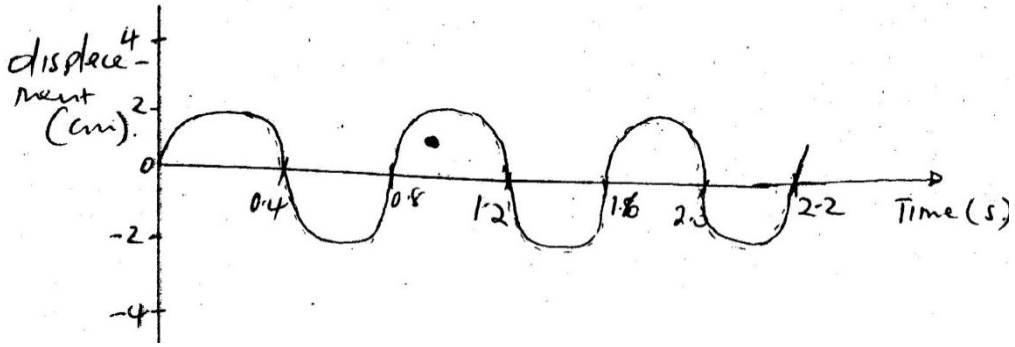
a) Determine the refractive index of the prism material for the light (speed of light in vacuum = 3.0×10^8m/s (3mks)

b) i) Show on the diagram the critical angle (1mk)

c) Given that r=21.2°, determine angle Θ (3mks)

d) On the same diagram sketch the path of the light after striking the prism if the prism was replaced by another of similar shape but lower refractive index (use dotted line for your answer) (2mks)

18. The figure below shows a wave profile



Determine

i. The period of the wave (½ mk)

ii. The amplitude of the wave (½ mk)

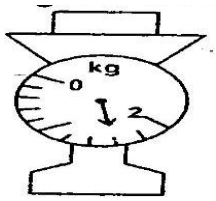
iii. If the velocity of the wave is 4m/s, calculate the wavelength of the wav (2mks)

PHYSICS

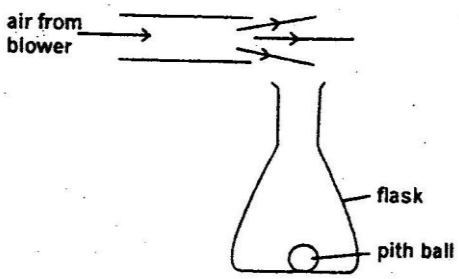
PAPER 2

SECTION A 25MARKS

1. The block of wood on the balance in the figure below is a cube of side 20cm Determine its density in kgm^{-3} (3mks)

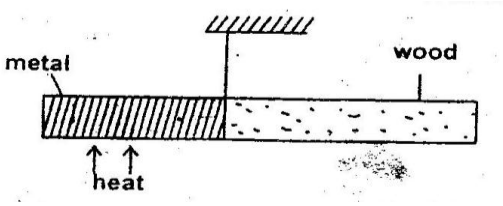


2. The diagram below shows a pith ball in a flask. When a jet of air is blown over the mouth of the flask, the pith ball is found to rise from the bottom. Explain this observation (2mks)



3. It is observed that a smelly gas released at the back of the laboratory spreads faster on a hot day than on a cold day. Explain (1mk)

4. The diagram below shows a rod made of wood on one end and metal on the other end suspended freely with a piece of thread so that it is in equilibrium



The side mad of the metal is now heated with a Bunsen flame. State with reason the side to which the rod is likely to fit (2mks)

5. When a piece of metal is place in water it sinks. But when the same piece of metal is placed on a block of wood it floats explain the observation (2mks)

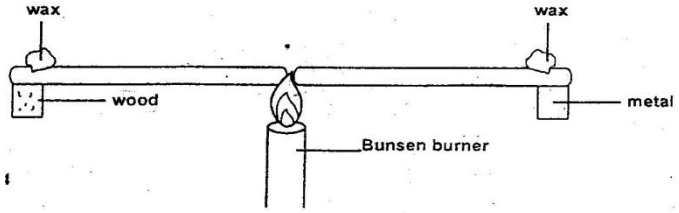
6. A bullet traveling at a speed of $100ms^{-1}$ strikes a wall and penetrates 2cm. How long does the bullet take to stop after striking the wall? (3mks)

7. A balloon of volume $1.5cm^3$ containing helium gas at a pressure of 3.0 x 106pa is released from the ground when the temperature is 20°C. What will be the pressure when it reaches a point where the volume becomes 3.0m and the temperature 5°C (3mks)

8. Explain why mercury forms a convex meniscus and water a concave meniscus in a tube (2mks)

9. A force of 3500N acts on a stationary body of mass 20kg for 0.02 seconds. Calculate the velocity attained by the body (2mks)

10. The diagram below shows two identical iron rods, one is placed on a wooden block and the other on a metal block. The ends of the rods are heated as shown.



State with reason the piece of wax that melts first (2mks)

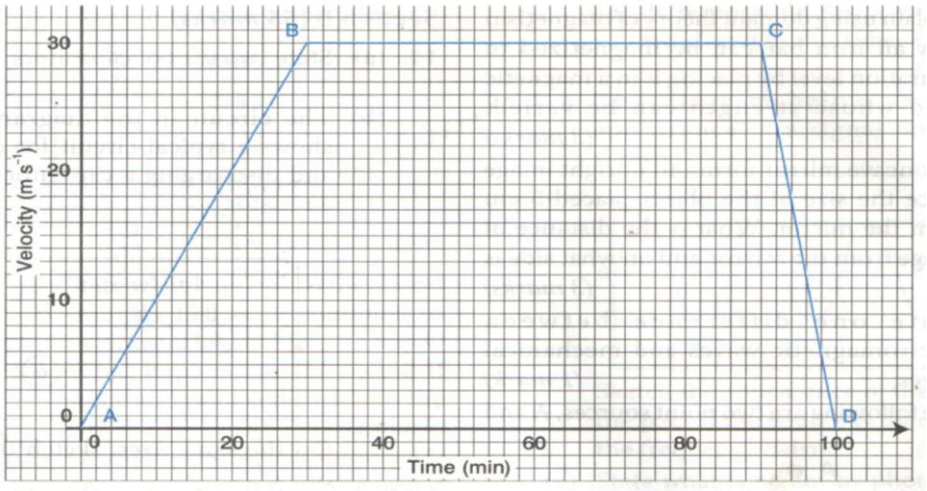
11. A stone is tied to a string and whirled in a horizontal circle at a constant speed. In which direction is the stone being accelerated at each point of its path? (1mk)

12. A force of 2.0N compresses a spring by 1.0mm. Determine the energy stored in the spring

SECTION B 55MKS

13. a) Define the term 'velocity'. (1mk)

b) The following figure shows velocity –time graph for the journey of a car in 100minutes.



i. Determine the acceleration of the car between A and B and between C and D (4mks)

ii. Determine the distance covered by the car during the journey (3mks)

iii. Determine the average velocity of the car (2mks)

c) A ball rolls off a platform of height 1.8m at a horizontal speed of 15 ms^{-1}. How far off the edge of the platform does it land? (4mks)

14. A car of mass 2000kg travelling at $5ms^{-1}$ collides with a minibus of mass 5000kg travelling in the opposite direction at $7ms^{-1}$. The vehicles stick and move together after collision. If the collision lasts for 0.1seconds;

    a) Determine the velocity of the system after collision of 3 decimal places. (3mks)

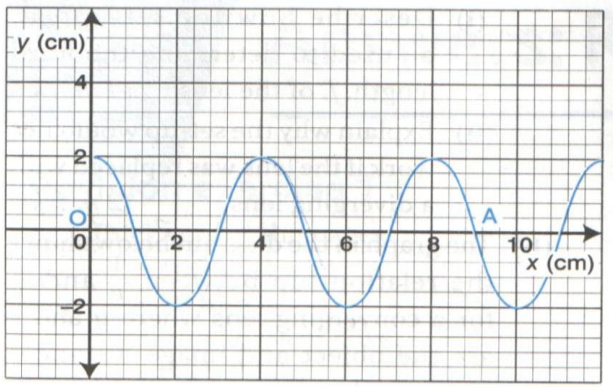
    b) Calculate the impulsive force on the minibus (3mks)

    c) Calculate the change in kinetic energy of the system (3mks)

    d) Explain the change in kinetic energy of the system (1mk)

15. a) What is the difference between longitudinal and transverse waves? (2mks)

    b) The following figure shows a transverse wave travelling along the x-axis.



    i. Determine the wave length and the amplitude of the wave. (2mks)

ii. If the time taken by the wave to move from O to A is 0.04 seconds, determine the frequency and the speed of the wav (4mks)

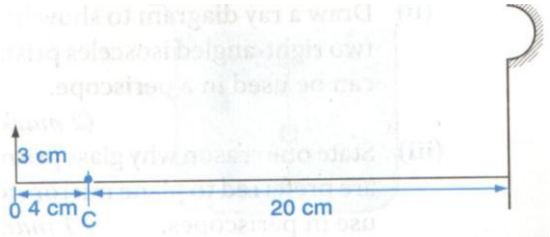
c) A person stands between two vertical cliffs 400m from the nearer cliff. The cliffs are x distance apart.

Every time the person strikes the rock once, two echoes are heard, the first one after 2.5s and the second one 2.0 s later. Calculate

i. the speed of the sound in air (3mks)

ii. the value of x (2mks)

16. a) The following figue shows an object, O, 3cm high placed in front of a concave mirror. C is the centre of curvature mirror. C is the centre of curvature of the mirror.



By constructing a ray diagram, determine the size and the position of the image formed. (3mks)

b) The table shws the object distance, u, and the corresponding image distance v, for an object placed in front of a concave mirror.

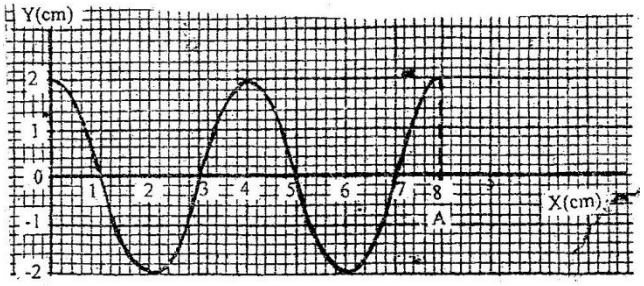
u (cm)	20	25	30	40	50	70
v(cm)	20	16.7	15	13.3	12.5	11.6
$\frac{1}{u}$ (cm^{-1})						
$\frac{1}{v}$ (cm^{-1})						

i. Complete the table by filling in the values of $\frac{1}{u}$ and$\frac{1}{v}$ (2mks

ii. plot a graph of $\frac{1}{u}$ (y-axis) against $\frac{1}{v}$ (5mks)

iii. From the graph, determine the focal length of the mirror. (3mks)

17. The figure 6 shows a transverse wave travelling along the horizontal axis



determine

i. Wave length of the wave in metres (2mks)

ii. Amplitude of the wave (1mk)

iii. If the time take by the wave to move from O to A IS 0.02seconds Determine frequency of the wave (3mks)