FORM 4 ENDTERM 1 EXAMS

ALL SUBJECTS

Compilation of Standard set of End-Term 1 Questions for the Current Candidates. Contains both Paper 1, 2 & 3 where necessary.

SUBJECTS COMPILED;

Mathematics, English, Kiswahili, Biology, Chemistry, Physics, CRE, Geography, History, Business Studies, Agriculture & Computer Studies.

SERIES 2

For Marking Schemes

Mr Isaboke 0746 222 000 / 0742 999 000

MWALIMU CONSULTANCY

FORM 4 ENDTERM 1 EXAMS

SERIES 2

BIOLOGY

PAPER 1

TIME: 2 HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

Instructions to Candidates:

(a) Write your name and Index Number in the spaces provided above.

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

*(c) Answer **all** questions in the spaces provided in this booklet.*

*(d) **Candidates should answer the questions in English.***

For Examiner's Use Only

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

17	18	19	20	21	22	23	24	25	26	27	28	Grand Total	

1. State **FOUR** environmental problems that can be solved by studying biology. **(4 marks)**

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2. Aerobic break down of glucose yields 2880 kJ of energy whereas anaerobic breakdown yields 150 kJ. Give an explanation to account for this difference**.** **(4 marks)**

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3. How many of 20 micrometres animal cells would fit in a 1cm long line**?** **(2marks)**

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4. State the function of the following apparatus;

(i) Specimen bottle . **(1 mark)**

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(ii) Bait trap. **(1 mark)**

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5. Name the causative agents of the following diseases:

(a) Cholera…… **(1 mark)**

(b) Malaria …….. **(1 mark)**

6. Explain why young onion root tip is ideal for examining the stages of mitosis**.** **(2 marks)**

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7. The table below shows the concentration of some ions in pond water and in the cell sap of some aquatic plant growing in the pond

Ions	**Concentration in pond water(parts per million)**	**Concentration in cell sap(parts per million)**
Sodium	50	30
Potassium	2	150
Calcium	1.5	1
Chloride	180	200

a) With a reason name the process by which each of the following ions could have been taken up by this plant

i) Sodium **…….....……. (2marks)**

Reason**.....**

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ii) Potassium **……..…. .....(2marks)**

Reason**.....**

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b) i) Which ion would cease to be absorbed if the plant was treated with a metabolic poison?

1mark)

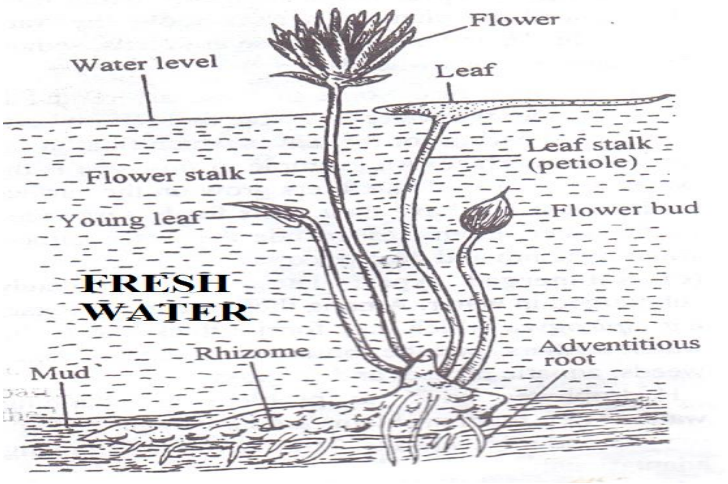
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ii) Give a reason for your answer **(1mark)**

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8. The photograph illustrates an organism found in aquatic habitat.



(a) Give the type of the plant. **(1 mark)**

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(b) Describe **three** adaptation of the organism to its habitat. **(3 marks)**

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9. A student smeared the abdomen of a locust with Vaseline.

(a) What were the likely results after ten minutes? **(1 mark)**

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(b) Account for the results obtained above. **(2marks)**

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10. What is the significance of photolysis? **(2 marks)**

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11. The following table shows the volume of gases carried by 100cm^3 of blood.

Gas	**Blood entering lungs**	**Blood leaving lungs**
Nitrogen	0.9 cm^3	0.9 cm^3
Oxygen	10.6 cm^3	19.0 cm^3
Carbon (iv) oxide	58.0 cm^3	50.0 cm^3

(a) Which blood has a higher content of carbon (IV) oxide? **(1 mark)**

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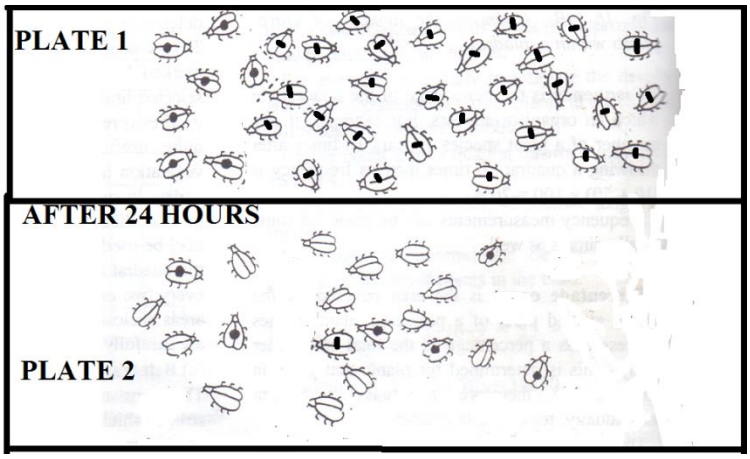
(b) Explain the difference in the content of oxygen and carbon (IV) oxide in blood entering the lungs and that leaving the lungs. **(2 marks)**

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12. Use the illustration below to answer questions.



(a) Identify the method of population estimation shown above. **(1 mark)**

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(b) Estimate the population of the beetles. **(3 marks)**

(c) State **one** limitation of this method. **(1 mark)**

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13. An investigation was carried between 1994 and 2003 to study the changes of fish population in a certain small lake. Four species of fish A,B, C and D were found to live in this lake.In 1995,A factory was built near the lake raising temperatures from 25^0C to 30^0C.In 1997,Sewage and industrial waste was diverted into the lake. The population of fish during the period of investigation is shown in the table below.

Fish species	1994	1996	1998	2000	2001	2002	2003
A	6102	223	20	106	660	4071	7512
B	208	30	11	22	63	311	405
C	36	100	0	0	0	0	0
D	4521	272	23	23	29	400	617

a) Explain **two** factors that could have brought the changes in the fish populations**. (2 marks)**

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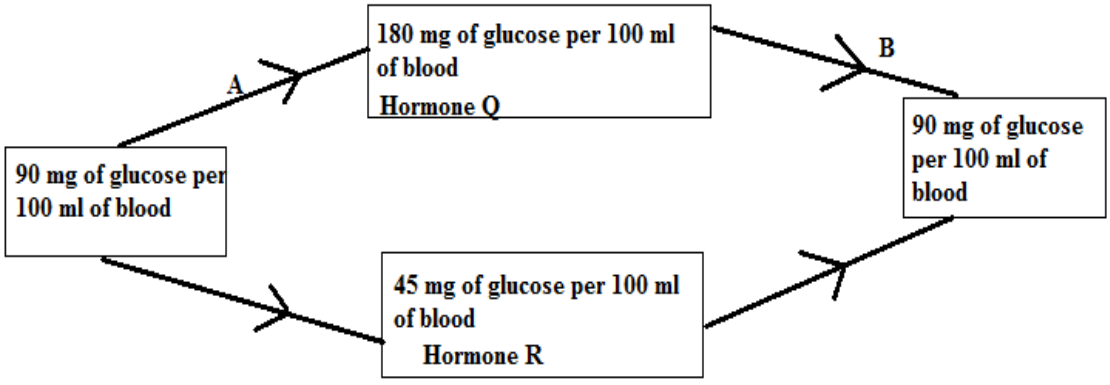
14. State the functions of the following parts of a light microscope.

(i) Coarse adjustment knob. **(1 mark)**

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15. Use the diagram below to answer questions that follow.



(a) Name the feedback mechanism labeled B. **(1 mark)**

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(b) Identify Hormone R**……..…. (1 mark)**

16. Name **three** food substances acquired by herbivores feeding on green sprouting grass exposed to maximum sunlight during the day**.** **(3 marks)**

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17. A certain animal has no incisors, no canines,6 premolars and 6 molars in its upper jaw. In the lower jaw there are 6 incisors,2 canines,6 premolars and 6 molars.

(a) Write its dental formula. **(2mark)**

(b) Identify the mode of nutrition of the organism. **(1 mark)**

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(c) Give a reason for your answer in (b) above. **(1 mark)**

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18. a). Identify the following:

i) The structure that prevents backflow of blood when pressure in the ventricles fall**. (1mark)**

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ii) The vessel from which coronary artery branches **(1mark)**

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b) The size of the heart is closely related to the size of the body of the organism. Generally the heart weighs 0.59 percent of the total body weight. Calculate the weight of a healthy adult if his heart weighs 0.4838Kg **(2marks)**

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19. A small mammal has ears that are usually pink, but on a day when the environmental temperature is low the ears appear pale pink. Explain this observation **(3marks)**

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20 a) State the function of the following during cell division

i) Spindle fibres **(1mark)**

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ii) Centrioles **(1mark)**

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b). What is the significance of protandry and protogyny structural features in flowering plants **(2marks)**

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21. Distinguish between the Cytology and entomology**.** **(2 mark)**

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22. Give the roles of the following hormones in males

(i) Follicle stimulating hormone. **(1 mark)**

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(ii) Luteinizing hormone**.** **(1 mark)**

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23. Describe how the granum is adapted to its photosynthetic function**.** **(2 marks)**

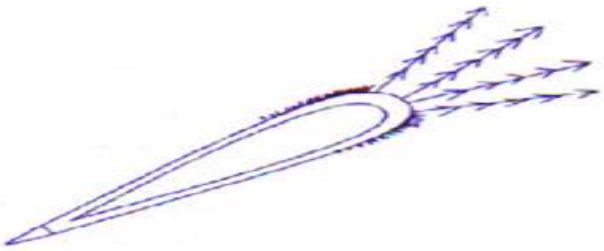
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24. Below is a photograph of a fruit.



(a) State the agent of dispersal of the fruit. **(1 mark)**

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

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25 a). State **two** advantages of metamorphosis to the life of **insects** **(2marks)**

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b). Name **two** harmful effects of **insects** **(2marks)**

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26 What is the function of coleoptile in germinating maize grain? **(1mark)**

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27 a) Define the term monohybrid inheritance **(1mark)**

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b). Differentiate between genotype and phenotype **(2marks)**

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28. In some fruit flies there exist two varieties; one with red eyes and another with white eyes. In a population of these organisms, the red eyed greatly outnumber the white eyed.

A white eyed female was crossed with a red eyed male. All the females from the cross were red eyed while all the males were white eyed. Using the given information, answer the following questions;

Which gene is

i) Dominant **.....(1mark)**

ii) Recessive**.....(1mark)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

BIOLOGY

PAPER 2

TIME: 2 HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS TO CANDIDATES

- *Write your name, Admission Number and Class in the spaces provided above.*
- *This paper consists of **two** sections. Section **A** and section **B.***
- *Answer **ALL** questions in section **A** in the spaces provided. In section **B** answer question **6** (compulsory) and either question **7** or **8** in the spaces provided after question 8*

For Examiners use only.

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	Total score	80	

SECTION A (40 MARKS)

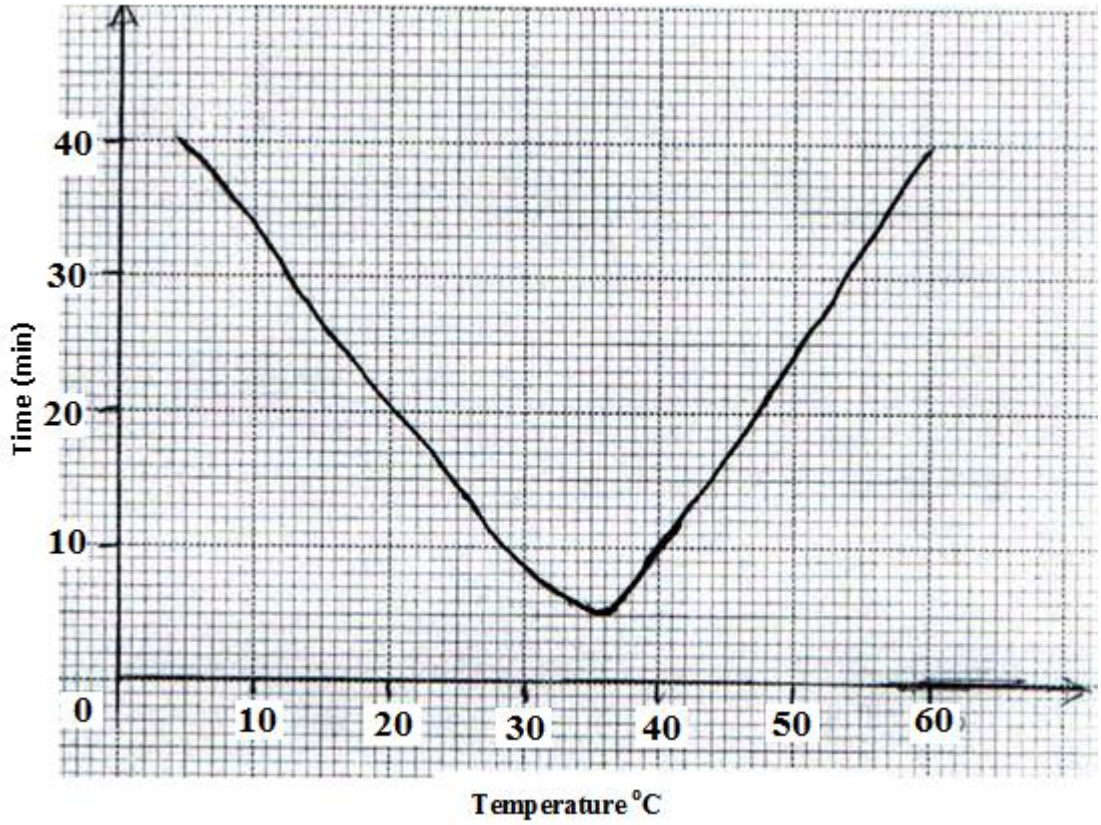
Answer all questions in this section in the spaces provided.

1. (a) Define the term denature **(1 Mark)**

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(b) In an experiment to investigate the action of pepsin on egg albumen, equal amounts of pepsin were added to equal amounts of egg albumen in different test-tubes. The test tubes were placed in water baths at different temperatures. The graph below shows time taken for the enzyme to digest protein in each.



(i) What is the optimum temperature for the enzyme? **(1 Mark)**

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(ii) Account for the time taken to digest egg albumen at 45^0C. **(1 Mark)**

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(c) (i) In which form is the enzyme pepsin secreted. **(1 Mark)**

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

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(d) Name four plant tissues which lack chloroplast. **(2 Marks)**

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(e) State the function of the pad of gum in herbivorous feeding. **(1 Mark)**

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2. During ecological study, students collected and marked 120 ants and released them. After 48 hours, the students captured another 90 ants, 20 of which had been marked previously.

(a) How many ants were there in the compound? Show your working. **(3 Marks)**

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(b) What are the limitations of this method in sampling animal populations? **(3 Marks)**

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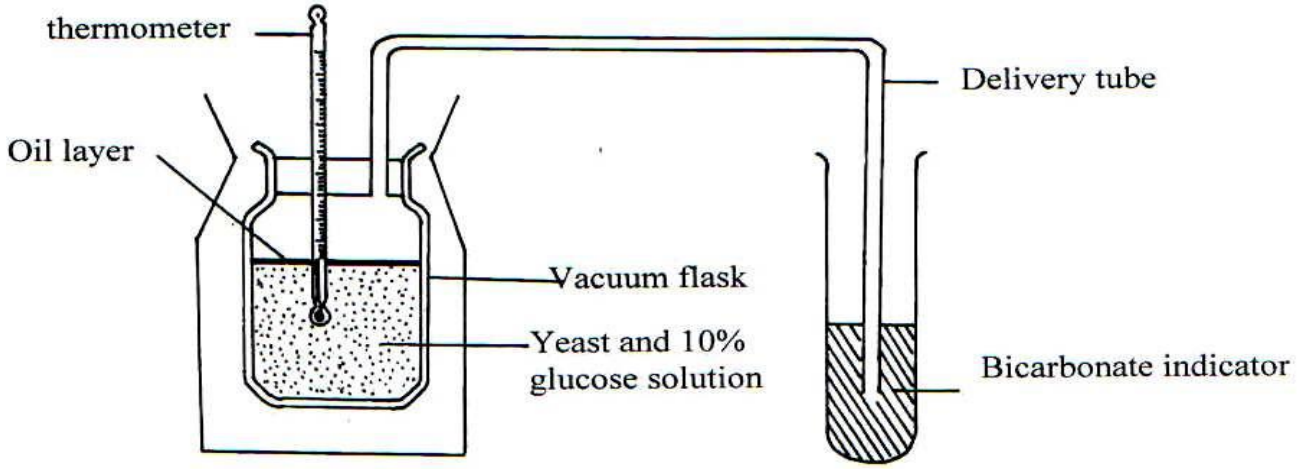
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(c) State two other methods which could be used to determine the population? **(2 Marks)**

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3. The experiment below was set-up to investigate some physiological processes. The glucose solution was first boiled then cooled. The set-up was left for 24 hrs.



(a) Suggest two aims of the experiment. **(2 Marks)**

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(b) (i) State the expected observations after 24 hours. **(2 Marks)**

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(ii) Explain your observations in b (i) above. **(1 Mark)**

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(iii) Why was glucose solution boiled then cooled? **(1 Mark)**

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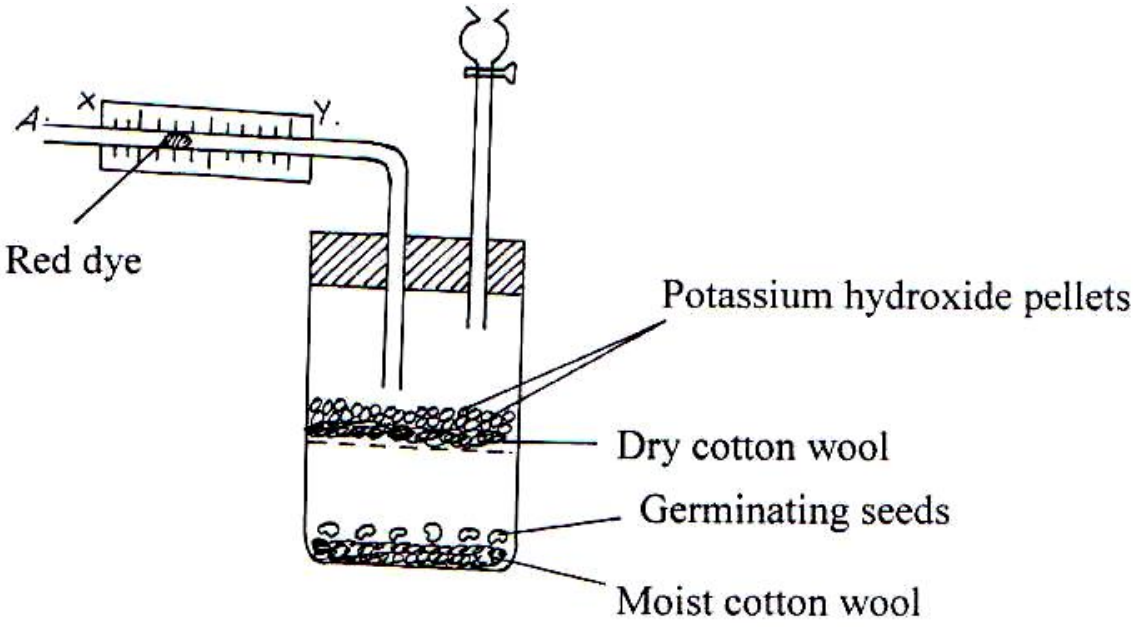
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(c) Suggest a control for the above experiment. **(1 Mark)**

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4. The diagram below shows an experimental set up to investigate an aspect of germination.



(a) Why are the following used in this experiment?

(i) Potassium hydroxide pellets? **(1mark)**

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(ii) Moist cotton wool? **(1 mark)**

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(b) (i) With reference to points x and y state the direction the dye would move towards during the experiment. **(1 mark)**

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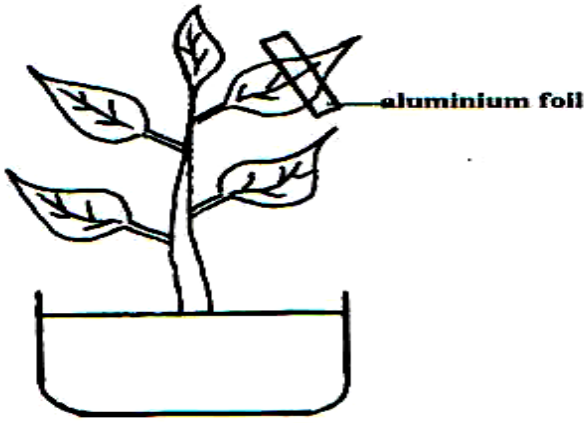
(ii) Give reasons for your answer in (b) (i) **(2 Marks)**

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5. In an experiment to investigate a factor affecting photosynthesis, a leaf of a potted plant which had been kept in the dark overnight was covered with alluminium foil as shown in the diagram below.



The set up was kept in sunlight for three hours after which a food test was carried out on the leaf.

(a) Which food test was carried out? **(1 Mark)**

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(b) (i) **State** the results of the food test. **(2 Marks)**

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(ii) **Account** for the result of the food test. **(2 Marks)**

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(c) (i) Why was the set up kept in sunlight for three hours. **(1 Mark)**

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(ii) Why was it necessary to keep the plant in the darkness before the experiment**?** **(1 mark)**

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(d) Other than light state one other factor that affects the rate of photosynthesis. **(1 Mark)**

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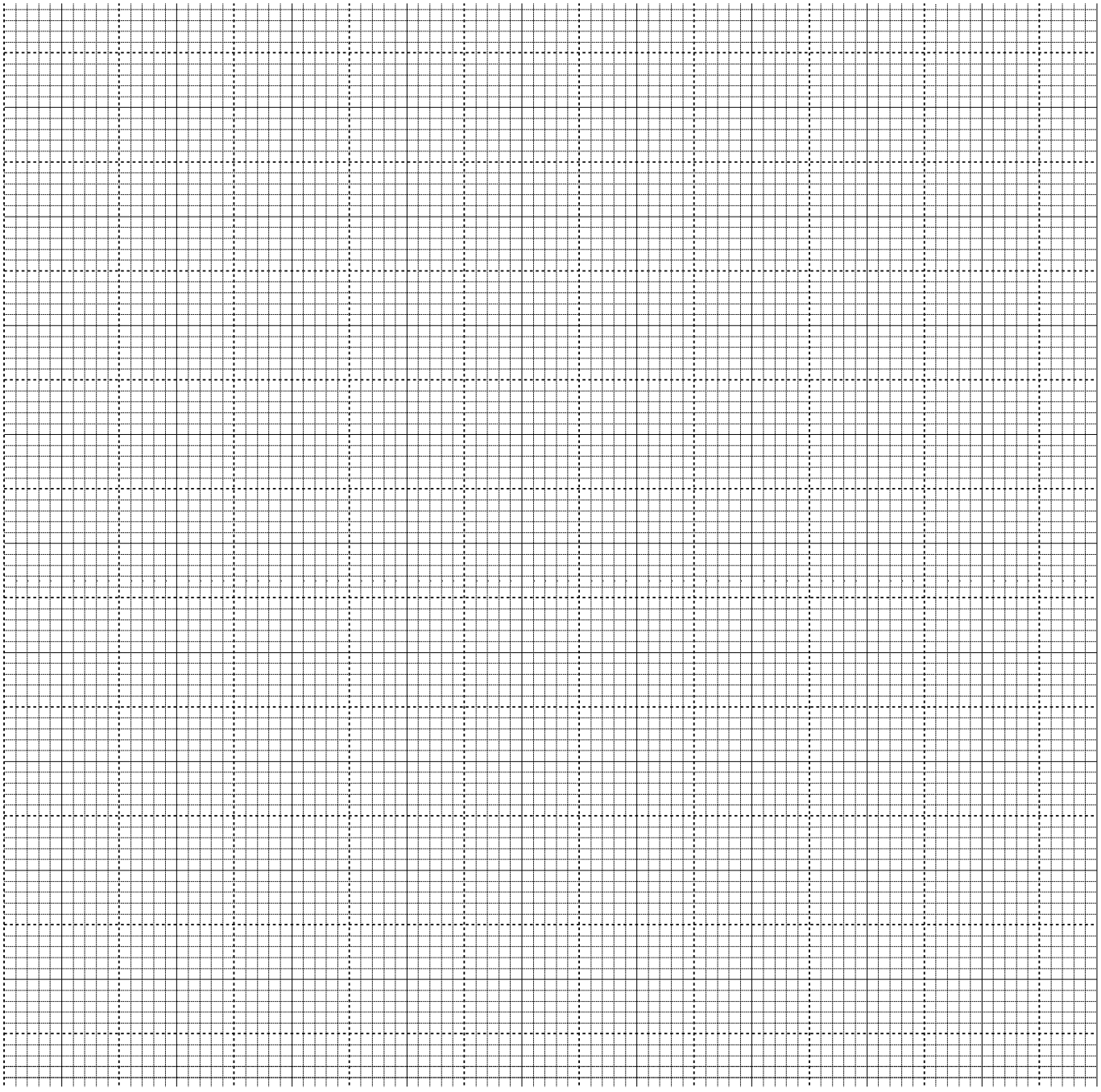
SECTION B – 40 MARKS

Answer question 6 (compulsory) and either 7 or 8

6. In an experiment to investigate a certain process in a given plant species, the rate of carbon (IV) oxide consumption and the rate of Carbon (IV) oxide release were measured over a period of time for the day. The results of the investigation are as shown in the table below.

Time of days (hrs)	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00
CO_2 consumption mm^3/min	0	43	69	91	91	50	13	0	0	0
CO_2 release mm^3/min	38	22	10	3	3	6	31	48	48	48

(a) On the same axes, draw the graphs of volume of Carbon (IV) oxide consumed and Carbon (IV) oxide released against time. **(7 Marks)**



(b) Name biochemical processes represented by;

(i) Carbon (IV) oxide consumption **(1 Mark)**

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(ii) Carbon (IV) oxide release **(1 Mark)**

……

(c) Account for the shape of the curve for

(i) Carbon (IV) oxide consumption. **(3 Marks)**

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(ii) Carbon (IV) oxide release **(3 Marks)**

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(d) (i) From the graph, state the time of the day when the plant attains compensation point**.(1 Mark)**

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(ii) What is meant by compensation point. **(1 Mark)**

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(e) Explain how temperature affects the rate of Carbon (IV) Oxide consumption in a plant**.(3 Marks)**

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7. (a) Name five methods of excretion in plants. **(5 Marks)**

(b) Give three reasons why plants lack complex excretory system. **(3 Marks)**

(c) State six excretory products in plants and give their economic uses. **(12 Marks)**

8. (a) What is pollination? **(2 Marks)**

(b) Discuss the sequence of events that take place from the time a pollen grain falls on the stigma until a seed is formed. **(18 marks)**

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FORM 4 ENDTERM 1 EXAMS

SERIES 2

BIOLOGY

PAPER 3

CONFIDENTIAL

PRACTICAL

Each candidate should have:

1. *Specimen Q (HALF unripe banana).*

2. *About 70ml Iodine Solution .*

3. *Visking tubing about 8cm.*

4. *100ml beaker.*

5. *Two Threads.*

6. *Scalpel.*

NB/ Each candidate should have coloured pictures for question 2 and 3.

FORM 4 ENDTERM 1 EXAMS

SERIES 2

BIOLOGY

PAPER 3

TIME: 1¾ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

Instructions to candidates

a) *Write your name, Admission number in the spaces provided above.*

b) *Answer **ALL** questions in in the spaces provided.*

c) *You are required to spend the first **15 minutes** of the **1 ¾ hours** reading the whole paper carefully before commencing your work.*

d) *Candidates should answer the questions in English*

FOR EXAMINER'S USE ONLY:

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	15	
2	12	
3	13	
TOTAL	40	

QUESTIONS

1. a). You are provided with a specimen labelled **Q**. Slice off about $2cm^2$ cube from the specimen. Peel it. Tie one end of the 8cm LONG transparent visking tubing provided. Place the cube and tie the other end to ENSURE THERE IS NO LEAKAGE AT BOTH ENDS OF THE TUBING.

Rinse the outside of the tubing with water. Immerse the tubing with its content in 100ml beaker containing iodine solution. Allow standing for 20 minutes.

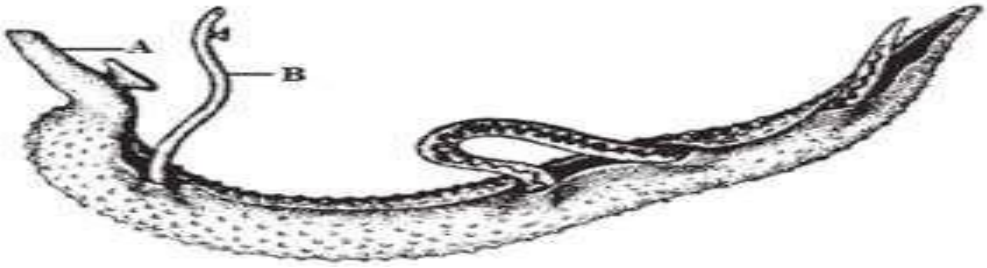
i. Record your observations in the table below. **(4 marks)**

	Contents inside tubing	Iodine solution Outside tubing
Before the experiment		
After the experiment		

ii. What was the physiological activity under test? **(1 mark)**

iii. Account for the results obtained in c (i) above. **(3 marks**

b). The diagram below represents two mature parasitic worms, labelled **A** and **B**, of the species *Schistosoma mansoni* that causes bilharzia.



i. With a reason, identify the male and the female worm in the diagram above. **(3mrks)**

Male ……. Female……

Reason

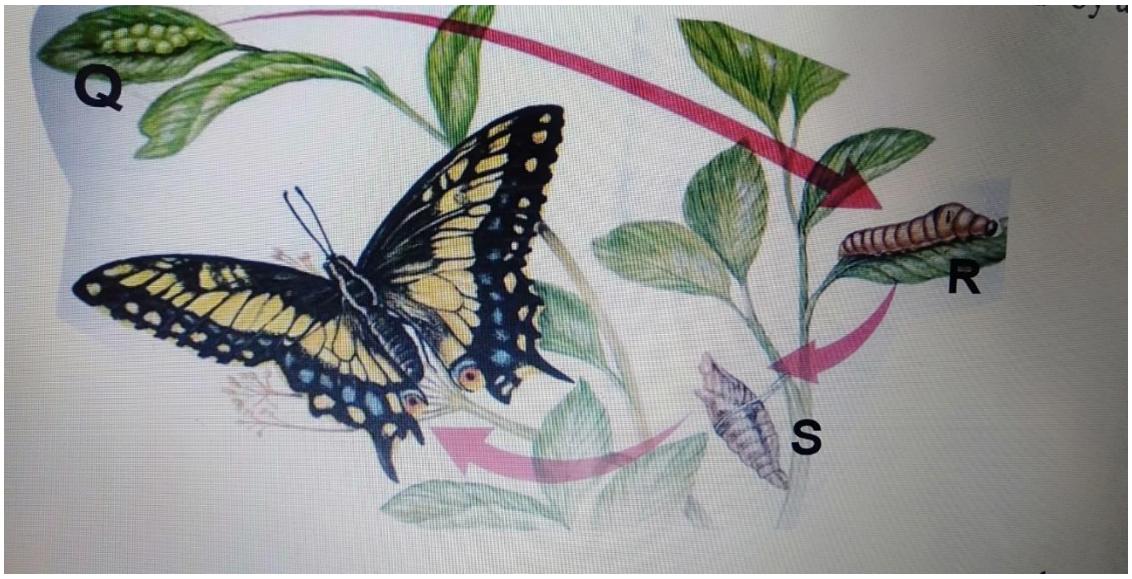
ii. Name **two** hosts, primary and intermediate, for these parasitic worms. **(2mks)**

Primary host

Intermediate host

iii. State **two** ways of controlling the spread of bilharzia **(2mks**)

2. Below is a diagram showing a type of a metamorphosis exhibited by a butterfly.



a. Give the name of the type of metamorphosis in the diagram above. **(1mk)**

b. Write down two importance of metamorphosis. **(2mks)**

c. Name the stages Q, R and S. **(3mks)**

Q

R

S

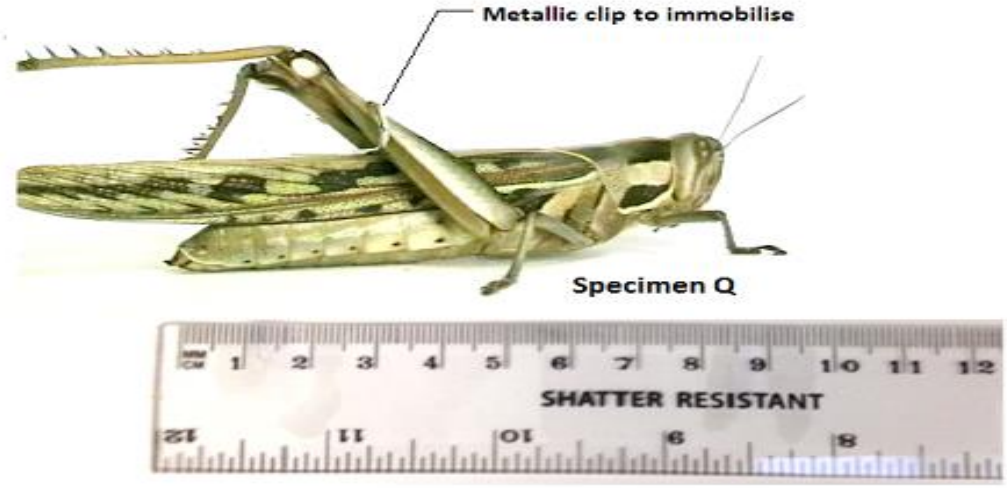
d. Differentiate the biological activities in the development stages R and S. **(2mks)**

e. Name the two major hormones that are associated with metamorphosis in insects. **(2mks)**

f. i. Name the class to which the organisms in the diagram above belongs. **(1mk)**

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

3. You are provided with specimen **Q, R S T** and **U**. Study them to answer the questions below.











a. Work the actual length of specimen **T,** given that the shatter resistant ruler measures **Q** from tip of mouth to tip of abdomen. **(2 marks)**

b. A boy immobilised specimen **Q** and attempted to drawn and suffocate it in water by placing its head in water. Using observable features, explain why he couldn't succeed. **(1 mark)**

c. Use the features in order given below and construct a dichotomous key that can be used to identify the specimen above.

Wings, long or short hind limbs, number of legs, antenna. **(8 marks)**

(d) State two ways in which specimen **Q** is adapted to evade its predators in its ecological niche.

(2marks)

FORM 4 ENDTERM 1 EXAMS

SERIES 2

CHEMISTRY

PAPER 1

TIME: 2 HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

233/1

CHEMISTRY

PAPER 1

Time: 2 hours

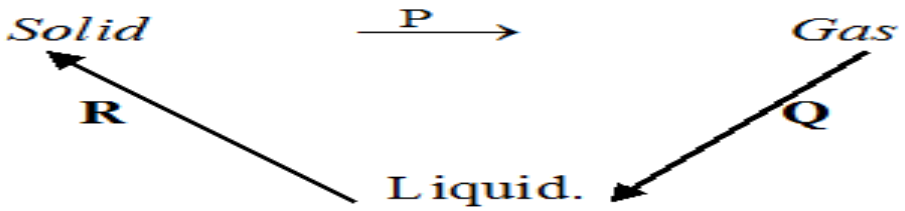
INSTRUCTIONS TO THE CANDIDATES:-

- *Write your **name** and admission **number** on the spaces provided.*
- *Answer **all** the questions in the spaces provided.*
- *Mathematical tables and electronic used calculators may be*
- *All working **MUST** be clearly shown where necessary.*

Question	Maximum score	Candidate's score
1-30	80	

QUESTIONS

1. Matter exists in three states which can be related as shown in the diagram below.



Name processes: ***P***: …… **(1mk)**

R: …….. **(1mk)**

2. (a)Give **one** reason some of the laboratory apparatus are made of ceramics. **(1 mark)**

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(b) Name **two** apparatus that can be used to measure approximately 75 cm of dilute sulphuric (VI) acid. **(2 marks)**

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3. Draw the procedural set-ups that can be used to separate a mixture of sand and calcium chloride to obtain crystals of calcium chloride. **(3 marks)**

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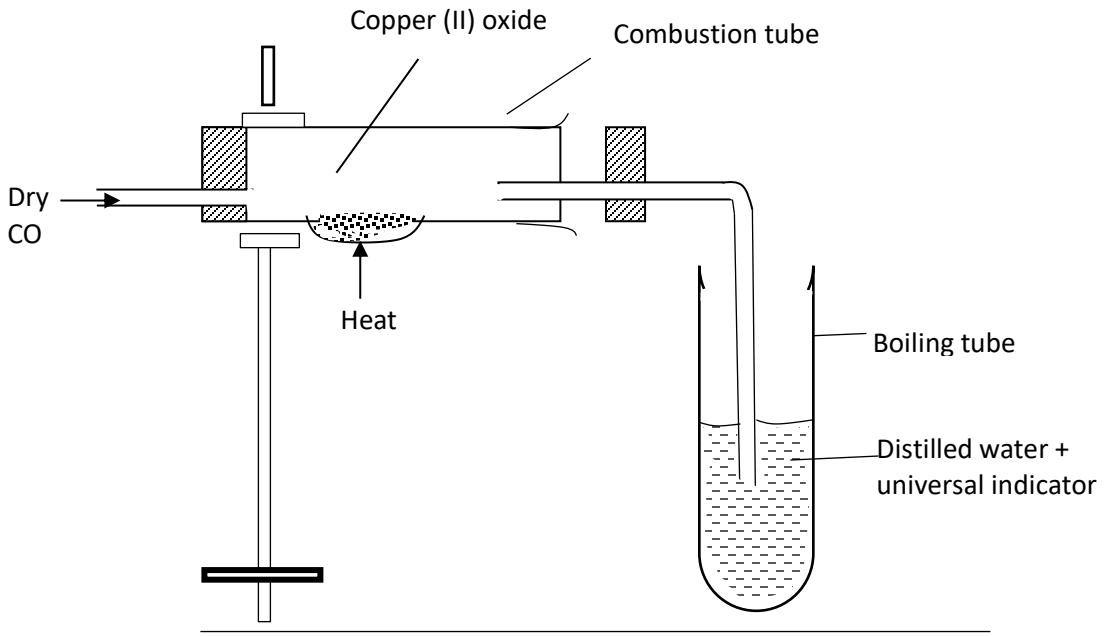
4. State **two** applications of chromatography. **(2 marks)**

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5. The above set-up was used to determine the chemical properties of carbon (II) oxide.



(a) Write the chemical equation for the reaction taking place in the combustion tube. **(1 mark)**

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(b) State and explain the observation made in the boiling tube. **(2 marks)**

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6. A student placed some hydrogen peroxide in a test tube then added a small amount of Solutions can be classified as acids, bases or neutral. The table below shows solutions and their pH values

Solution	**pH – values**
K	1.5
L	7.0
M	14.0

(a) Select any pair that would react to form a solution of pH 7 ***(1 Mark)***

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(b) Identify two solutions that would react with aluminium hydroxide. Explain ***(2 Marks)***

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7. 9.12g of a gaseous compound contains 8g of silicon while the rest is hydrogen. Determine the empirical formula of the compound. (H = 1, Si = 28) **(3 Marks)**

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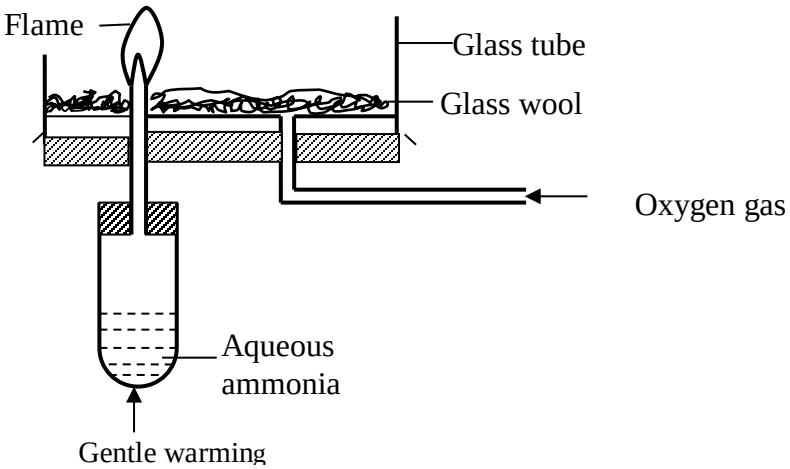
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8. Study the set-up below and answer the questions that follow.



(a) Why is aqueous ammonia warmed gently? ***(1 Mark)***

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(b) What is the colour of the flame? ***(1 Mark)***

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(c) Write the chemical equation for the reaction that takes place ***(1Mark)***

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9. (a) Chlorine can be prepared in the laboratory by using the following reagents and chemicals.
Concentrated sulphuric (VI) acid, water, manganese (IV) oxide, concentrated hydrochloric acid.

(i) State the role of concentrated sulphuric (VI) acid. **(1 mark)**

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(ii) Write the equation for formation of chlorine. **(1 mark)**

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(iii) What is the role of manganese (IV) oxide? **(1 mark)**

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10. (a) State Boyle's law. **(1 mark)**

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(b) A gas occupies $270cm^3$ at a pressure of 660mmHg at 37^0C. What is the new volume if pressure is changed to 810 mmHg at 63^0 C? **(2 marks)**

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11. An organic compound contain s 24.24% carbon, 4.04% hydrogen and the rest chlorine. If its relative molecular mass is 99, what is its molecular formula? **(3 marks)**
(C = 12, H = 1, Cl = 35.5)

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……

12. A given mass of sodium nitrate was heated completely and 320 cm^3 of the gas was produced at s.t.p. Determine the mass of the sodium nitrate heated.

(Na = 23. N = 14, O = 16, molar gas volume = 22.4L) **(3 marks)**

……

……

……

……

……

13.(a) Give **one** advantage of using methyl orange over phenolphthalein as an indicator.**(1 mark)**

……

……

(b) Three drops of litmus solution was added to 20 cm^3 of 2M hydrochloric acid in a beaker followed by 20 cm^3 of 2M ammonium hydroxide. State and explain the observation made.

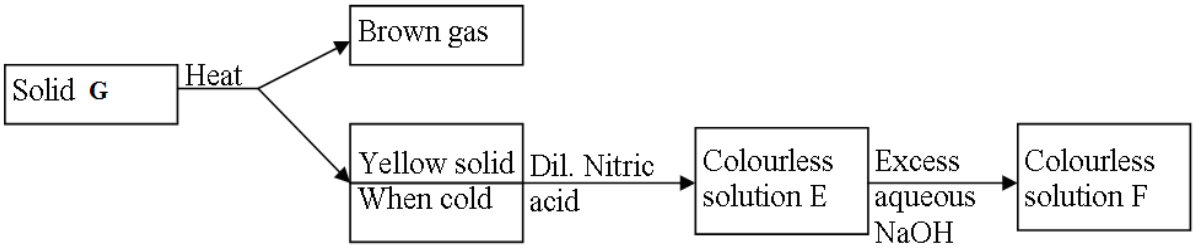
(2 marks)

……

……

……

14. Study the flow chart below and answer the questions that follow.



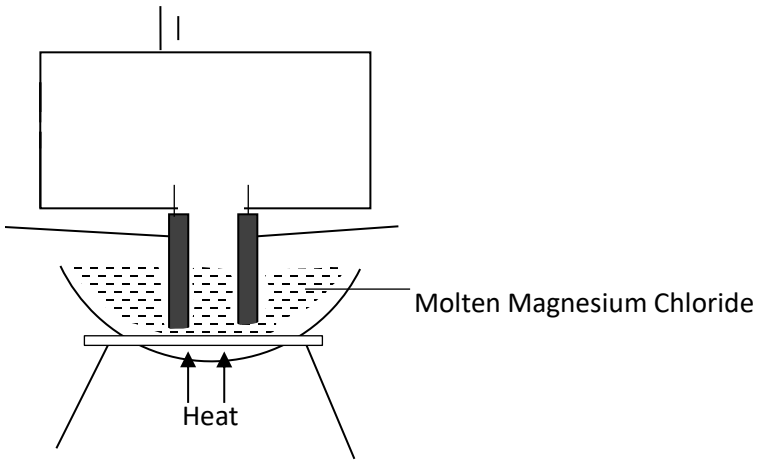
(a) ***Identify*** solid ***G***…… **(1mk)**

(a) ***Write*** a balanced ***chemical equation*** between the yellow solid and dilute nitric acid. **(1mk)**

……

……

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



(a) Define the term electrolysis. **(1 mark)**

……

……

(b) On the diagram, label the Anode and Cathode. **(2 marks)**

(c) Write the equation at the anode. **(1 mark)**

……

16. In order to find the proportion by volume of gases in air, a sample of air was passed through two wash bottles, the first containing sodium hydroxide solution and the second containing concentrated sulphuric (VI) acid. The remaining gas was then collected in a syringe.

(a) Why was the air passed through;

(i) sodium hydroxide solution? **(1 mark)**

……

(ii) concentrated sulphuric (VI) acid? **(1 mark)**

……

(b) Name is the major gas collected in the syringe. **(1 mark)**

……

17. During the manufacture of sodium carbonate in the industry.

(a) Give the name of the process to manufacture sodium carbonate. **(1 mark)**

……

(b) Write the final equation to form sodium carbonate during the process. **(1 mark)**

……

……

(c) Give **one** use of sodium carbonate. **(1 mark)**

……

……

18. Describe how to prepare crystal of magnesium sulphate starting with magnesium powder.

(3mks)

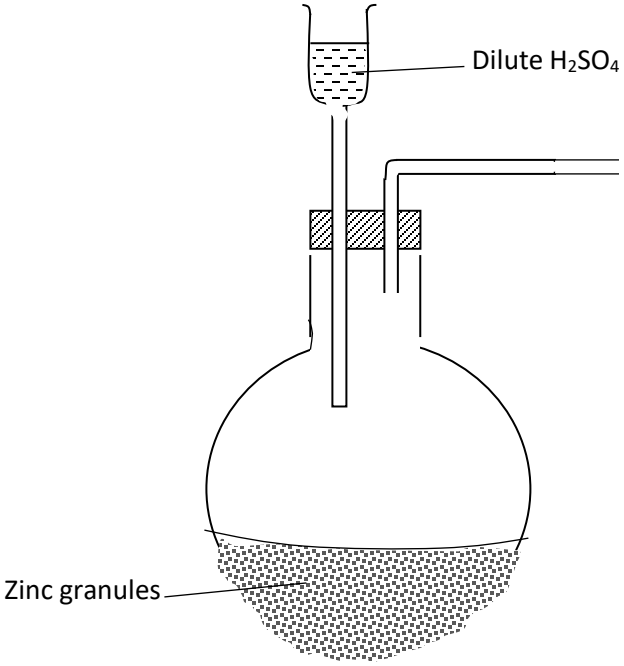
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19.(a) Complete the diagram below to show how dry sample of hydrogen gas is prepared in the laboratory. **(2 marks)**



(b) Name the catalyst which could be used to increase the reaction rate of production of hydrogen gas in the set up drawn above. **(1 mark)**

20. An element consists of two isotopes with atomic masses 59 and 61 in the ratio of 3 : 2 respectively.

(a) What are isotopes? **(1 mark)**

……

……

(b) Calculate the relative atomic mass of the element. **(2 marks)**

……

……

……

21. An element: $^{24}_{12}R$

(a) To which chemical family does it belong? **(1 mark)**

……

(b) Write the electron arrangement of the atom. **(1 mark)**

……

(c) Draw the structure of its ion. **(1 mark)**

……

……

……

22. If 25cm^3 of 0.1M H_2SO_4 solution neutralized a solution contain 1.06g of sodium carbonate in 250cm^3 of solution, calculate the morality and volume of sodium carbonate solution.
(Na = 23, O = 16, C = 12) ***(3 Marks)***

……

……

……

23.50cm^3 of oxygen gas diffused through a porous plug in 80 seconds. How long will it take 100cm^3 of sulphur (IV) oxide to diffuse through the same plug? (S = 32, o = 16)***(3 Marks)***

……

……

……

24. **(a)** State the role of the following parts during fractional distillation of a mixture of water and ethanol

(i) Glass beads in the fractionating column ***(1 Mark)***

……

(ii) Fractionating column ***(1 Mark)***

……

(b) State any one application of fractional distillation ***(1 Mark)***

……

……

25. (a)State what is observed when sodium hydroxide pellets are left in air overnight.**(1 mark)**

……

……

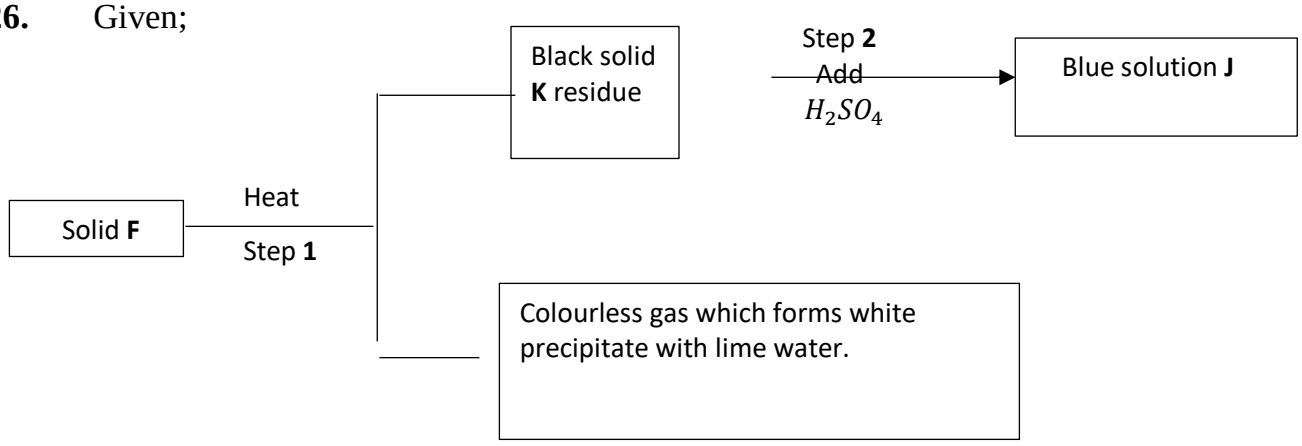
.

(b) What name is given the process shown by the salt in (a) above? **(1 mark)**

……

……

26. Given;



(a) Identify;

Solid **F** - ……. **(1 mark)**

Solid **J** - …… **(1 mark)**

(b) Write equation for step **1**. **(1 mark)**

27. Use dot (•) and cross (**X**) to show the bonding in Lithium oxide. **(2 mark)**

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……

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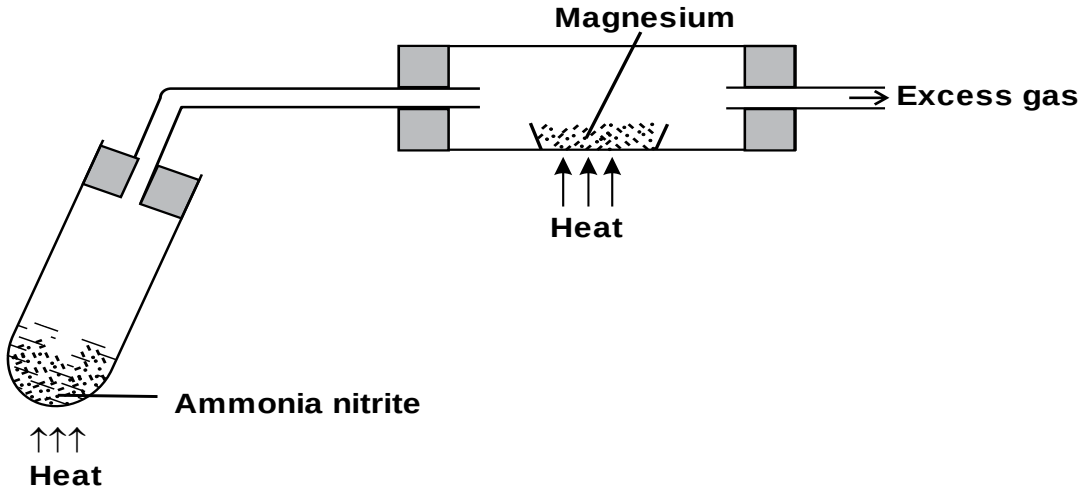
28. Excess magnesium ribbon was burnt in air to form a white solid mixture. Write two equations to show the formation of the white solid mixture. **(2 marks)**

……

……

……

29. The set-up below shows how gas A was prepared and reacted with heated magnesium



a) ***Give*** a reason why it is not advisable to heat magnesium before heating ammonium nitrite. **(1mk)**

……

……

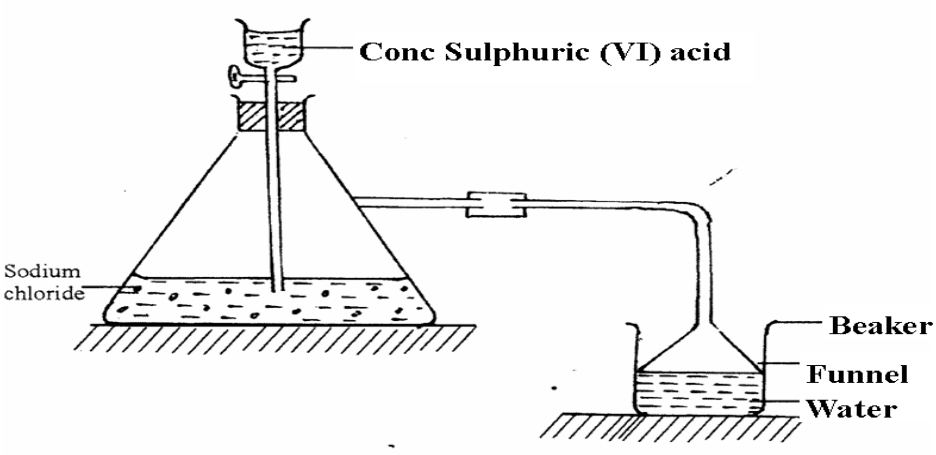
b) i) ***Identify*** gas A ..... **(1mk)**

ii) ***Write*** a chemical equation for the reaction between gas ***A*** and magnesium **(1mk)**

……

……

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



i) Name the gas that is produced when concentrated sulphuric (VI) acid reacts with the sodium chloride **(1 mark)**

……

ii) Why is it necessary to use a funnel in the beaker? **(1 mark)**

……

……

iii) How does the gas affect the P^H of the water in the beaker? **(1 mark)**

……

……

FORM 4 ENDTERM 1 EXAMS

SERIES 2

CHEMISTRY

PAPER 2

TIME: 2 HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS.

Answer all questions in the spaces provided.

1. The table below shows some elements in the periodic table. Use it to answer the question that follow. (The letter are not the actual symbols of the elements)

P				T		M		U
			Q				V	
S								R

a) Identify the elements in the same group. **(2mks)**

b) Give the name of the family to which elements P and S belong. **(1mk)**

c) Write the electron configuration of ions of elements; **(2mks)**

i. V

ii. Q

d) Given that isotopes of element S are as follows ^{39}S(93.1%), ^{x}S(0.01%) and 41S(6.89%), calculate x given that the relative atomic mass of element S is 39.1349. **(3mks)**

e) Elements Q and V react to form a compound.

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

……

ii. What is the nature of the compound formed in (i) above. Explain**.** **(2mks)**

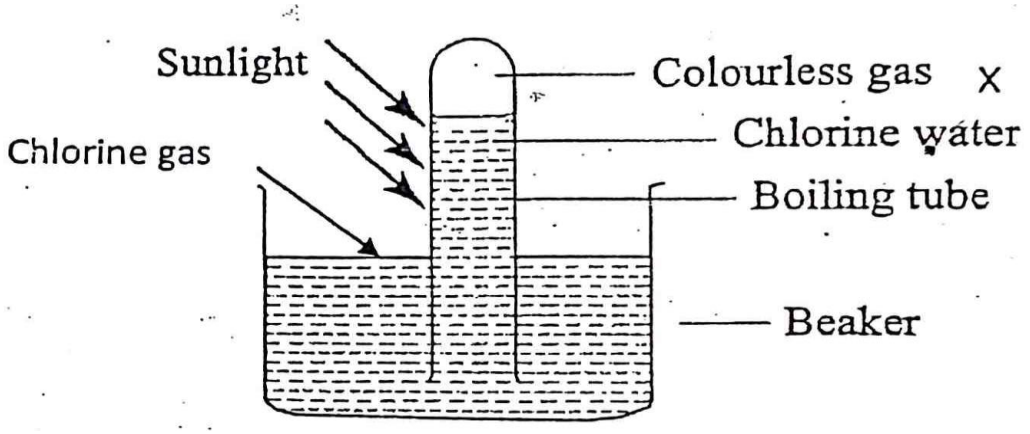
……

……

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f) Element T forms covalent bond with element V. Using dot (.) and cross (x) diagram show bonding in the compound formed. **(2mks)**

2. i. The following set up was carried out by students in form two in the open air in the presence of sunlight to investigate a certain property of the halogen. Study it answer the questions.



a) Which property of the halogen was being investigated? **(1mk)**

b) Name the gas which was colourless. **(1mk)**

c) Chlorine water is yellow in colour. However, in the presence of light it is decolourised. Explain. **(2mks)**

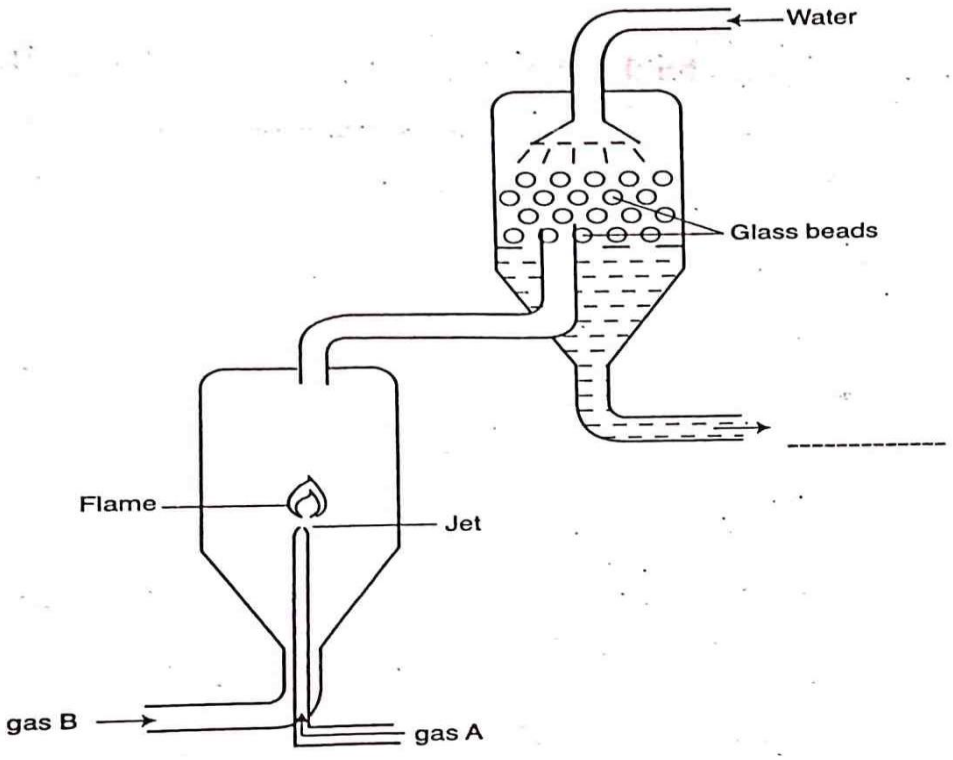
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……

……

d) Comment on the effect of chlorine water on red and blue litmus paper. **(2mks)**

ii. The following diagram represents a section of the plant for the large scale manufacture of hydrochloric acid.



a) Name gases A and B. **(2mks)**

……

……

b) State the role of glass beads in the plant. **(1mk)**

c) Explain why gas A is introduced into the reaction chamber through a jet. **(1mk)**

d) Write the chemical equation for the reaction between gas A and B. **(1mk)**

e) Determine the volume of hydrochloric acid gas formed when $3600cm^3$ of gas B react with gas A at stp (MGV at stp = $22.4dm^3$) **(2mks)**

f) CFC'S and DDT are chlorine compounds with long life span and so affects both plants and animal life. Write their full names. **(2mks)**

CFC

DDT

3. i. Butane and bromine react according to the equation below.

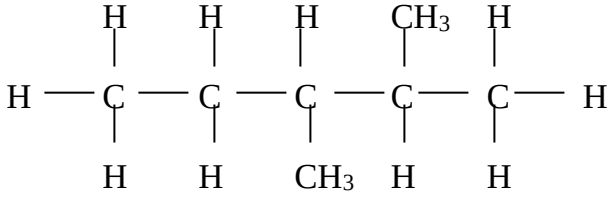
$CH_3CH_2CH_2CH_3 + Br_2 \longrightarrow CH_3CH_2CH_2CH_2Br + HBr$

a) Name the type of reaction taking place in the equation above. **(1mk)**

b) State the condition under which the above reaction takes place. Explain. **(2mks)**

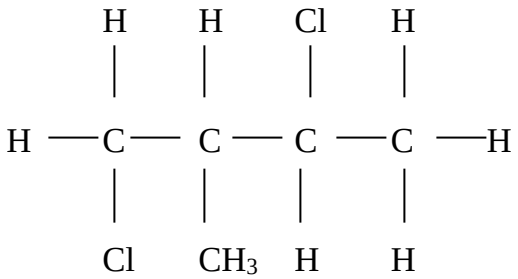
c) Name the following compounds:

i.



(1mk)

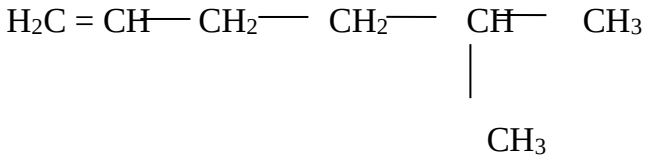
ii.



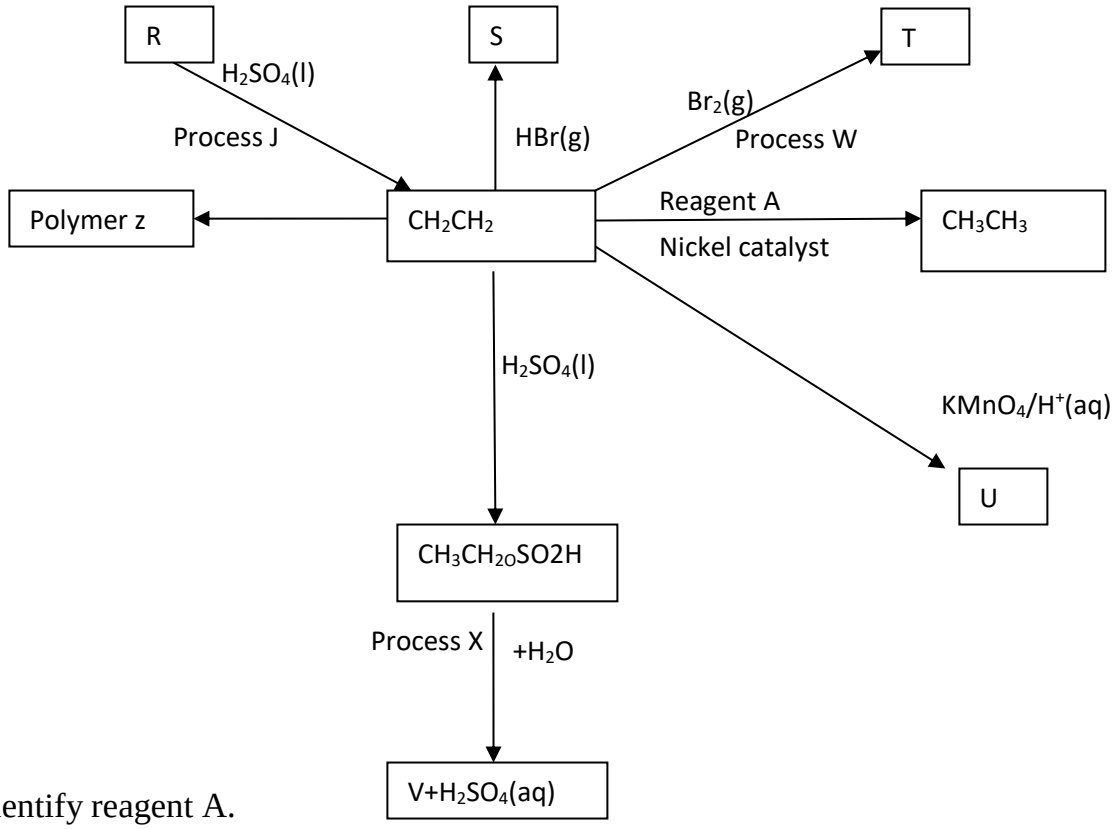
(1mk)

(1mk)

iii.



ii. Study the reaction scheme shown and answer the questions that follow.



a) Identify reagent A. **(1mk)**

b) Name process;

i. X **(1mk)**

ii. W **(1mk)**

c) Write the equation for the process J. **(1mk)**

d) Name products: **(3mks)**

S

T

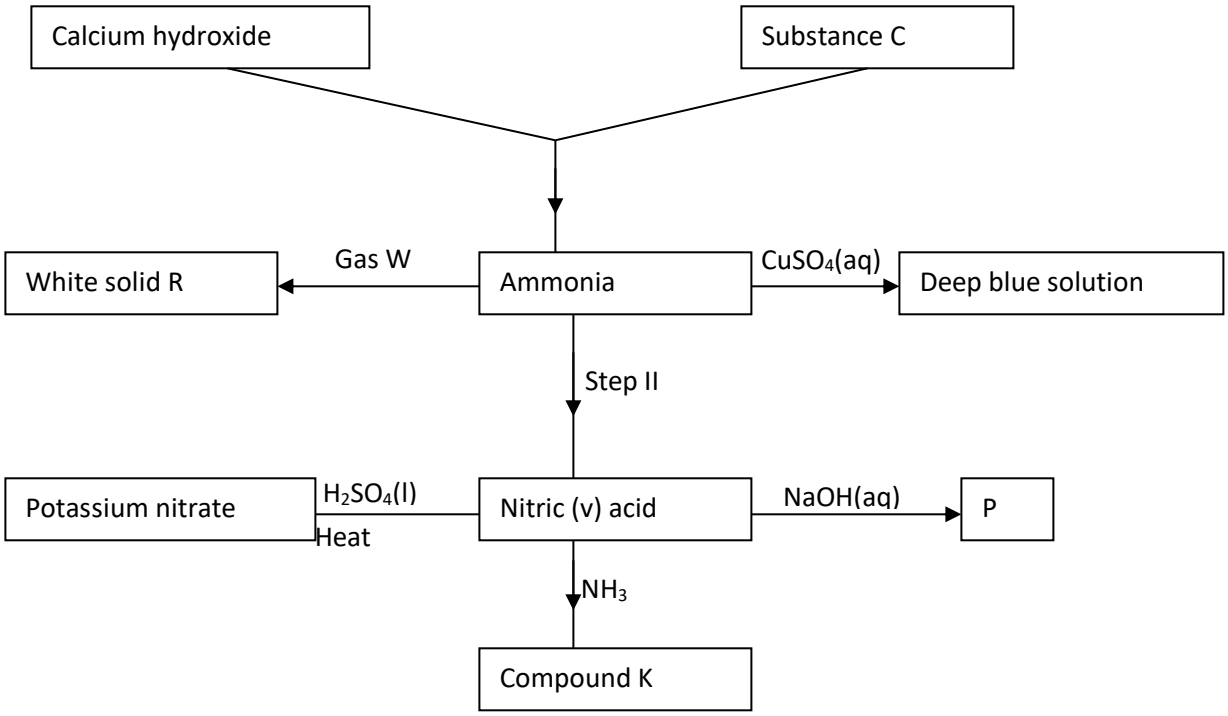
V

e) Draw and name the structure of:

i. Polymer Z **(1 ½ mks)**

ii. Product U **(1 ½ mks)**

4. i. Use the flow chart drawn to answer the questions that follow:



a) Identify:

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

ii. Compound K **(1mk)**

b) Write the equation for the following:

i. Calcium hydroxide and substance C. **(1mk)**

ii. Gas W and ammonia. **(1mk)**

c) Identify the catalyst in step II. **(1mk)**

d) Write the formula of the deep blue solution and compound K. **(2mks)**

e) State the type of reaction that produces P. **(1mk)**

f) State one use of compound K. **(1mk)**

ii. When compound N is heated, a red-brown gas is evolved and a yellow residue is left on cooling.

a) Name:

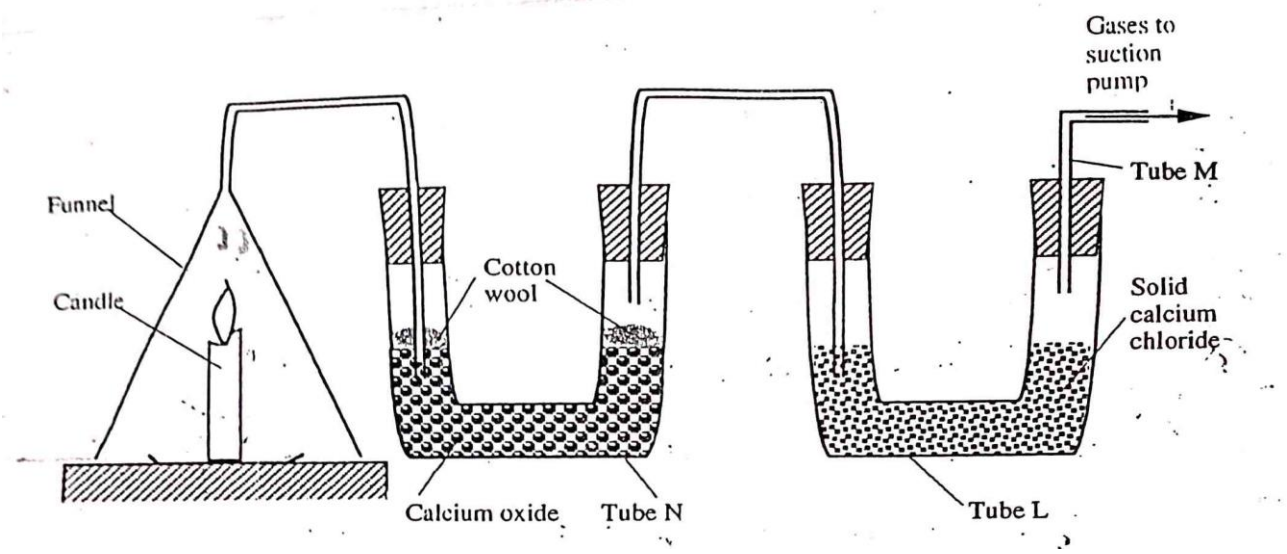
i. The red-brown gas. **(1mk)**

ii. The ions present in the residue. **(1mk)**

iii. Write equation for decomposition of solid N. **(1mk)**

5. i. Candle wax is mainly a compound consisting of two elements. Name the two elements. **(2mks)**

b) The set – up below was used to investigate the burning of a candle. Study it and answer the questions that follow.



i. What would happen to the burning candle if the pump was turned off? Give reasons. **(3mks)**

……

……

……

……

ii. State and explain the changes in mass that are likely to occur in tube N by the end of the experiment. **(3mks)**

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……

iii. Name two gases that come out through tube M. **(2mks)**

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……

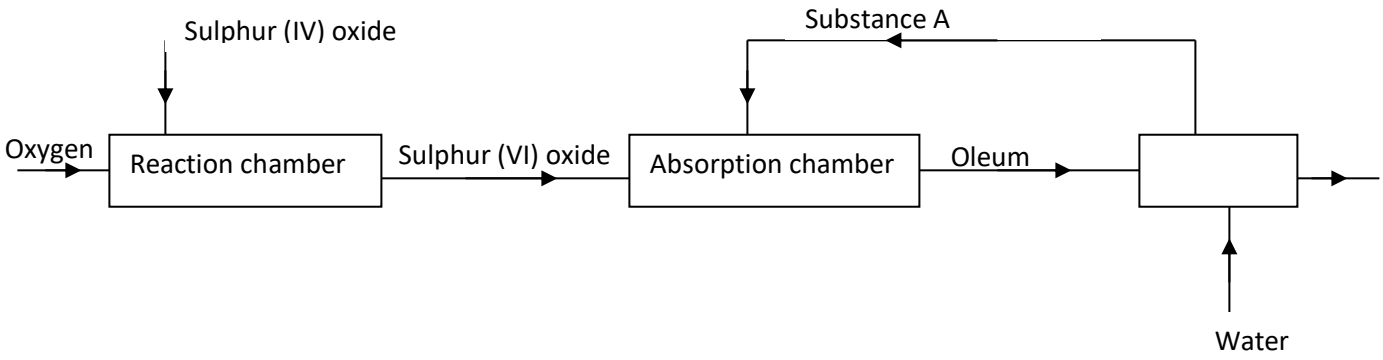
iv. What is the purpose of calcium chloride in tube L? **(1mk)**

……

v. Name another substance that could be used in the place of calcium oxide in tube N. **(1mk)**

……

6. The flow chart below shows some of the processes involved in large scale production of sulphuric (VI) acid. Use it to answer the questions that follow.



a) Describe how oxygen is obtained from air on a large scale. **(3mks)**

……

……

……

b) i. Name substance A. **(1mk)**

……

ii. Write an equation for the process that takes place in the absorption chamber. **(1mk)**

……

c) Vanadium (V) oxide is a commonly used catalyst in the contact process.

i. Name another catalyst which can be used for this process. **(1mk)**

……

ii. Give two reasons why vanadium (V) oxide is the commonly used catalyst. **(2mks)**

……

……

d) State and explain the observations made when concentrated sulphuric (VI) acid is added to crystals of copper (II) Sulphate in a beaker. **(1mk)**

……

……

e) The reaction of concentrated sulphuric (VI) acid with sodium chloride procduces hydrogen chloride gas. State the property of concentrated sulphuric (VI) acid illustrate in this reaction.

(1mk)

……

……

……

f) Name four uses of sulphuric (VI) acid. **(2mks)**

……

……

……

……

FORM 4 ENDTERM 1 EXAMS

SERIES 2

CHEMISTRY

PAPER 3

TIME: 1¾ HOURS

CONFIDENTIAL

In addition of apparatus formed in lab, each student is expected to have;

1. 100cm3 of solution A
2. 100cm3 of solution B
3. 0.5g of solid E
4. Burette
5. Pipette
6. 2 conical flask
7. 6 test tubes in rack
8. 1 boiling tube holder
9. Test tube holder
10. Distilled water in wash bottle.

Access

- *0.5 mBa $(NO_3)_2$ solution and dropper.*
- *2M NaOH solution and dropper.*
- *Source of heat.*
- *0.1MPb $(NO_3)_2$ solution and dropper.*
- *2MHNO_3 solution and dropper.*
- *Solution A is acidified 0.01MK_2CrO_7.*
- *Solution B is 0.1MNa_2SO_3.*
- *Solution E is about 0.5g of $MgSO_4.H_2O$.*

NOTE:

Solution A is prepared by dissolving 2.94g of K_2CrO_7 in 200cm^3 of 2M H_2SO_4 then adding distilled water to 1l of solution.

FORM 4 ENDTERM 1 EXAMS

SERIES 2

CHEMISTRY

PAPER 3

TIME: 1¾ HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

Q1 = 11MKS

Q2 = 14MKS

QUESTIONS

Q1. You are provided with:

Solution A: Potassium Chromate VI

Solution B: 0.1mNa_2SO_3

You are required to determine the number of moles dichromate VI ions ($Cr_2O^{2-}7$) in one litre of solution.

PROCEDURE

Fill the burette with solution B. Pipette 25cm3 of solution A and transfer it into conical flask. Titrate until a permanent green colour is obtained. Record your results in table below and repeat the procedure to fill the table.

	I	II	III
Find burette readings			
Initial burette readings			
Volume of solution B (cm3)			

1. Determine the average volume of solution B. **(5mks)**

1. Calculate the number of moles of solution B. **(2mks)**

3. Given that the ionic equation for the reaction between dichromate ion and sulphate is;

$Cr_2O^{2-}_{7(aq)} + 3SO^{2-}_{3(aq)} + 8H^{+}_{(aq)} \quad 2Cr^{3+}_{(aq)} + SO^{2-}_{4(aq)} + 4H_2O_{(l)}$

Calculate;

i) Number of moles of dichromate IV ion in $25cm^3$ **(2mks)**

ii) Moles of dichromate ion one litre of solution.

12. You are provided with substance E, carry out the tests below and write your observations and inferences in the space provided.

a) Describe the appearance of substance E.

Observation	**inferences**
(1mk)	**(1mk)**

c) Place remaining amount of E in boiling tube. Add about 10cm3 of distilled water and shake well. Retain the mixture for tests in d) below.

Observations	**inferences**
(1mk)	**(1mk)**

d) Use about 2cm3 potion of the mixture obtained in (c) for tests (i) to (iv)

i) Add 2 to 3 drops of lead (ii) Nitrate to the mixture.

Observation	**inferences**
(1mk)	**(1mk)**

ii) Add 2 to 3 drops of barium Nitrate to second portion of the mixture.

Observation	**inferences**
(1mk)	**(1mk)**

iii) Add five drops of dilute nitric (v) acid to the mixture in (ii) above

Observation	inferences

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

iv) To the last portion, add few then excess drops of sodium hydroxide.

Observation	inferences

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

e) Give the formula of cat ion and anion present in substance E.

Cat ion

Anion

FORM 4 ENDTERM 1 EXAMS

SERIES 2

PHYSICS

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS TO CANDIDATES

1. *The paper consists of two sections, Section **A** and **B**.*
2. *Answer **ALL** the questions in section A and B in the spaces provided.*
3. ***ALL** answers and working **MUST** be clearly shown.*
4. *Mathematical tables and electronic calculators **may be** used.*

SECTION A (25 MARKS)

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

1. A micrometer screw gauge is used to measure the thickness of a stuck of 10 microscope slide cover slips. The reading with the cover slips in position is as shown in figure 1.

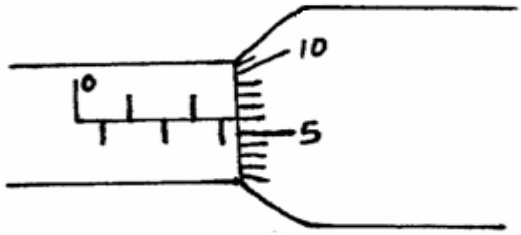


Figure 1

If the micrometer screw gauge has a negative zero error of 0.01mm, determine the thickness of each cover slip. **(2 marks)**

……

……

……

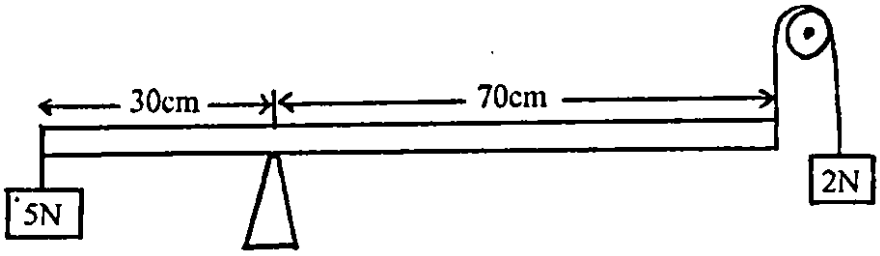
2.Explain briefly why water will wet a glass surface but mercury will not. **(2 marks)**

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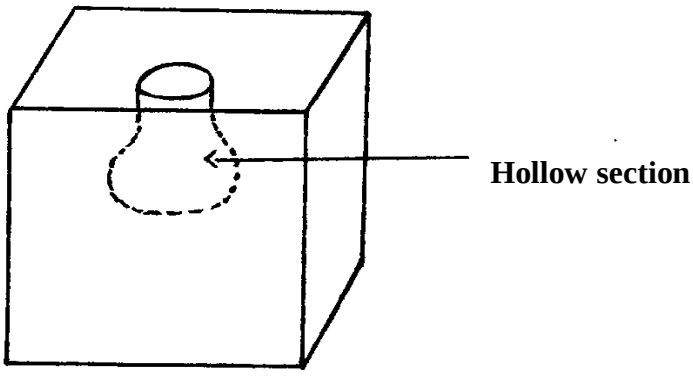
3. The figure below is that of a uniform meter rule supported at the 30cm. A load of 5N is attached at the 0cm mark and that of 2N to a pulley at the 100cm mark. Calculate the weight of the meter rule.

(3 marks)



4. A mercury barometer reads 75cmHg at the base of Mt.Kenya. Assuming that the height of the mountain is 1088m and the average density of air is 1.25kg/m^3. What is the reading of the barometer at the top of the mountain? (Take density of mercury is 13.6g/cm^3.) **(3 marks)**

5. The figure below is a rectangular block in a stable equilibrium, with a hollow section as shown.



a) What is the effect of adding water into the hollow section? (1 **mark**)

……

……

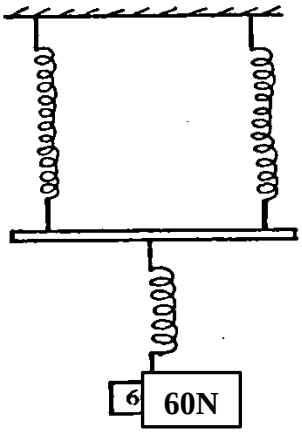
b) What could be the reason for your answer above? (2 **marks**)

……

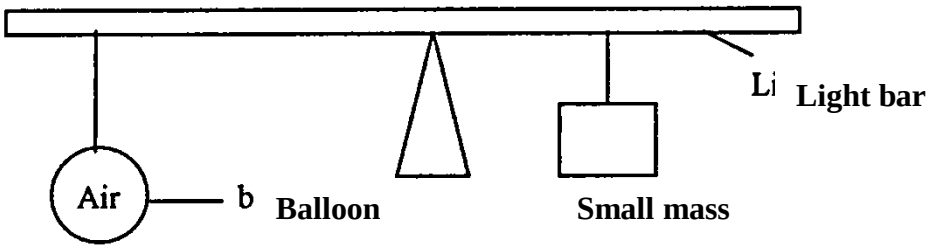
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6. The figure below is that of identical springs. A 60N weight is attached on the springs as shown so that the total extension for the system is 6cm. Calculate the spring constant of one spring.(3 **mks**)



6. The system in the figure below is in equilibrium at room temperature. The system is taken outside where the temperature is 10^0C higher for some time.



Explain why it tips to the right when it is taken outside the room. (2 **marks**)

……

……

……

7. State **one** way of increasing sensitivity of mercury in glass thermometer. (1 **mark**)

……

8. A tightly fitted bottle cork will be easier to remove if the bottle is warmed.
Explain this using kinetic and thermal property of matter. (2 **marks**)

……

……

9. A bullet of mass 20g moving with a velocity of 30m/s penetrates a sand bag and it's brought to rest in 0.05 seconds. Find the average retarding force of the sand. (3 **marks**)

10. Explain why an iron gate feels colder when touched but its wooden gatepost feels warm at night. (1 **mark**)

……

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SECTION B (55 MARKS)

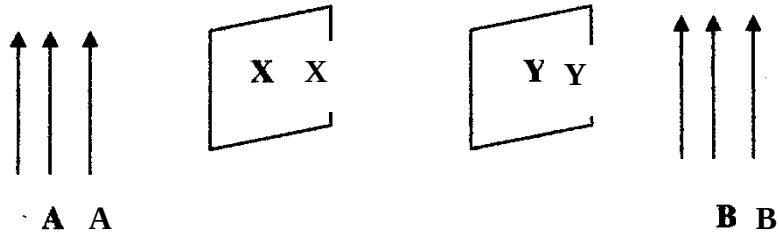
Answer ALL the questions in this section in the spaces provided.

11. a) Distinguish between streamline and turbulent flow. (2 **marks**)

……

……

b) The figure below shows two light sheets of paper arranged as shown.



Explain the observation made when air is blown at the same speed and time at points A and B.
(2 **marks**)

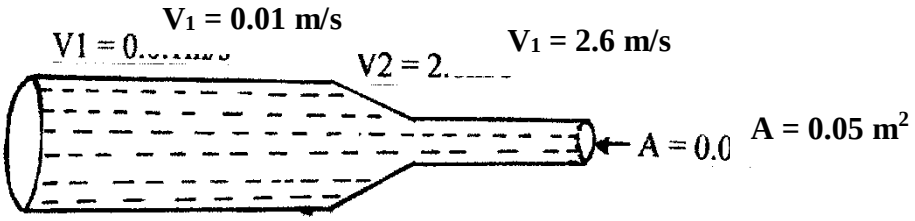
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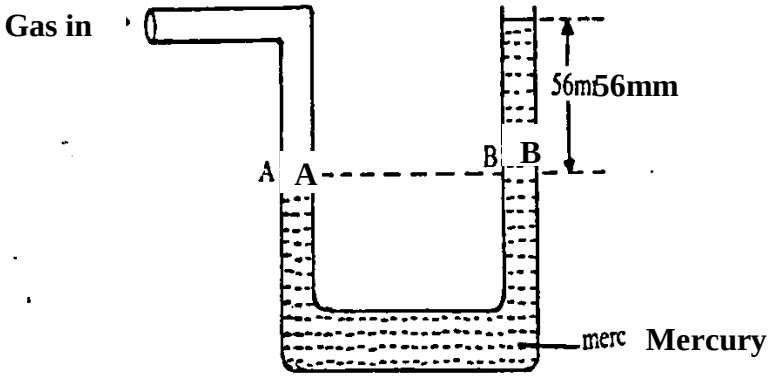
……

c) The figure below shows an incompressible fluid moving through a tube of varied cross- sectional area. If the area of the small tube is $0.05m^2$, calculate the diameter of the large tube in cm.

(3 **marks**)



d.) Use the figure below to answer the questions that follow.



i) What pressure is acting on point A? (1 **mark**)

……

……

ii) What is the value of pressure difference in the instrument reading? (1 **mark**)

……

……

iii) If the atmospheric pressure is 760mm of mercury, what is the value of gas pressure? (2 **marks**)

12. In an experiment to estimate the size of oil molecule an oil drop of diameter 0.05cm spreads over water to form a circular patch whose diameter is 15cm.

a) Explain why the oil spreads over water. **(1 mark)**

……

……

b) Determine:

i) Volume of the drop. **(3 marks)**

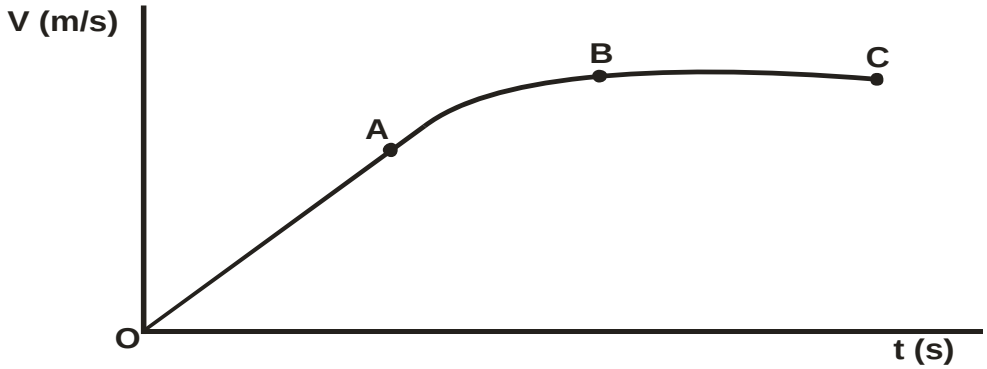
ii) Area of the patch. **(3 marks)**

c) State **two** assumptions made in b)(ii) above. **(3 marks)**

……

……

13. The figure below shows a velocity – time graph for the motion of a certain body.



Describe the motion of the body in the region:

i) OA: (1 **mark**)

_____

AB: (1 **mark**)

_____

BC: (1 **mark**)

_____

b) A car moving initially at 10m/s decelerates at 2.5m/s^2

Determine:

i) I) Its velocity after 1.5seconds. (2 **marks**)

II) distance travelled in 1.5 seconds. (3 **marks**)

III) The time taken for the car to stop. (3 **marks**)

IV) Sketch the velocity – time graph for the motion of the car up to the time the car stopped.(1 **mark**)

V) From the graph determine the distance the car travelled before stopping. (2 **marks**)

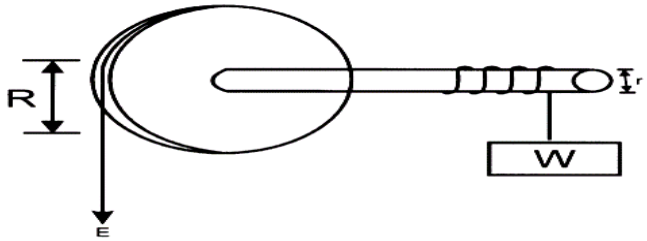
14. a) A machine is a device that enables work to be done more easily and conveniently. State any two ways in which a machine makes work easier. **(2 marks)**

……

……

……

b) Figure 7 shows a wheel and axle being used to raise a load W by applying an effort E. The radius of the wheel is R and of the axle is r.



i) Show that the velocity ratio (V.R) of this machine is given by $\frac{R}{r}$ **(3 Marks)**

……

……

……

……

ii) Given that r = 5cm and R = 50cm, determine the effort required to raise a load of 200N if the efficiency of the machine is 90%. **(3 mks)**

……

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(C). State two reasons the efficiency of any given machine less than 100% **(2mks)**

……

……

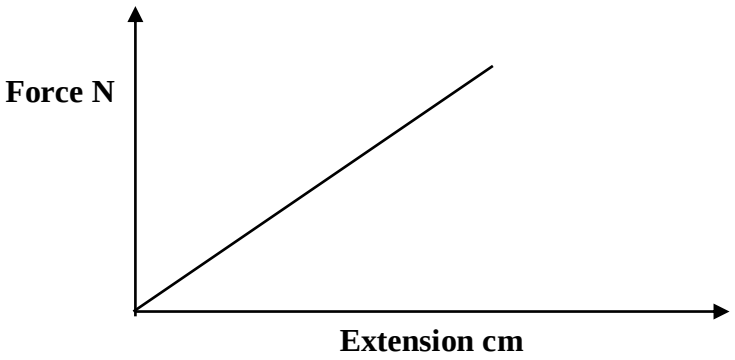
15. (a) State Hooke's Law. **(1mk)**

……

……

(b) The figure below shows the variation force with extension for a steel coil spring.

(i) On the same axes, sketch the variation of force with extension for a wire from which the spring is made. **(1mk)**



ii). Explain the difference between the two lines drawn **(2mks)**

……

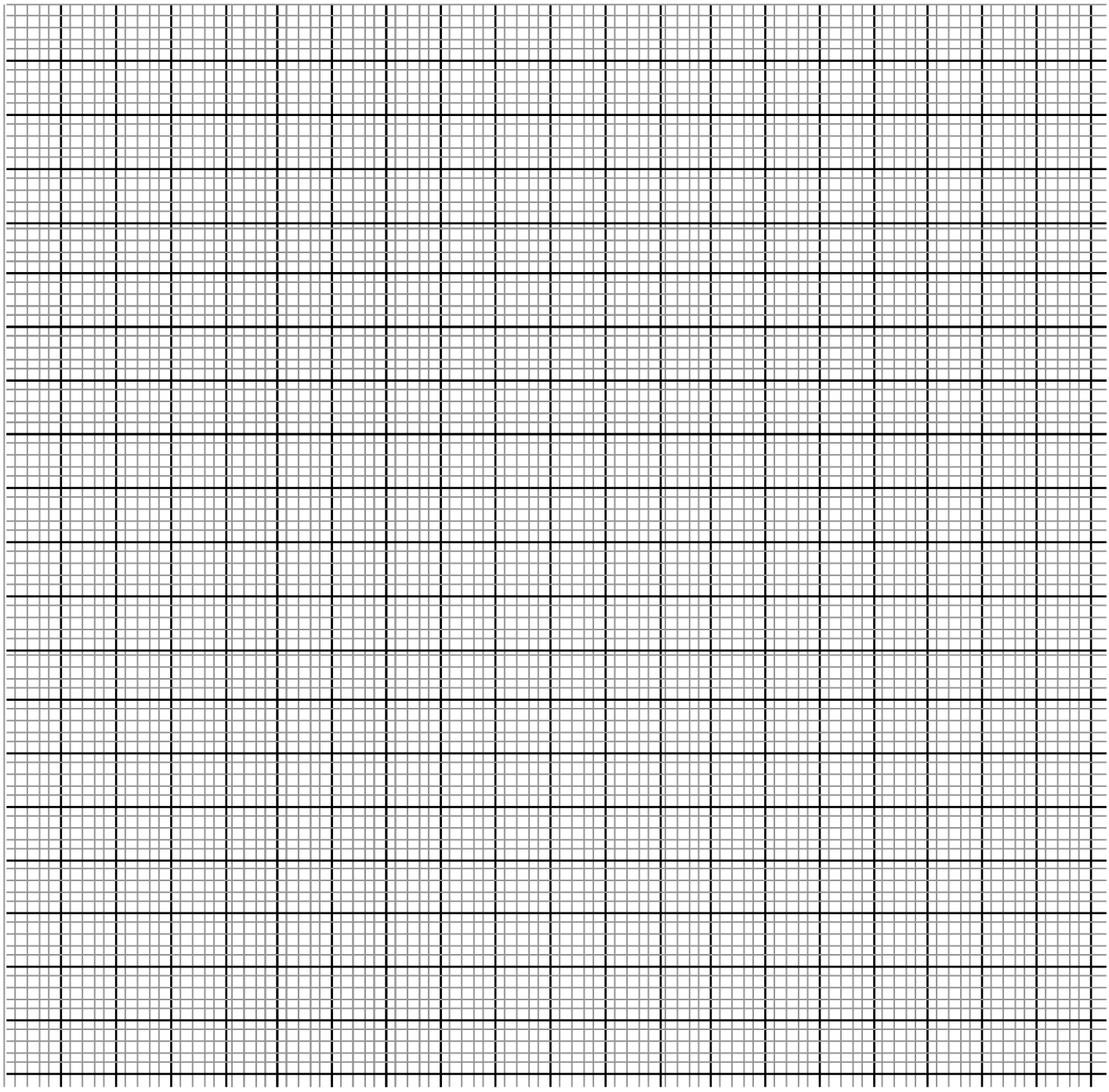
……

……

(iii) The following results were obtained in a experiment to verify Hooke's law when a spring was extended by hanging various loads on it.

Load (N)	0.00	1.00	2.00	3.00	4.00	5.00	6.00
Length of spring in cm	10.00	11.50	13.00	14.50	16.00	18.00	24.00
Extension	0.00						

Complete the table for the extension e above. **(1mk)**



(iv) Plot a graph of load (y-axis) against extension **(3mks)**

(v) From the graph determine the springs constant. **(2mks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

PHYSICS

PAPER 2

TIME: 2 HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

SECTION A (25 MARKS)

Answer ALL the questions in this section in the spaces provided

1. Distinguish between real and virtual Image **(1mk)**

……

……

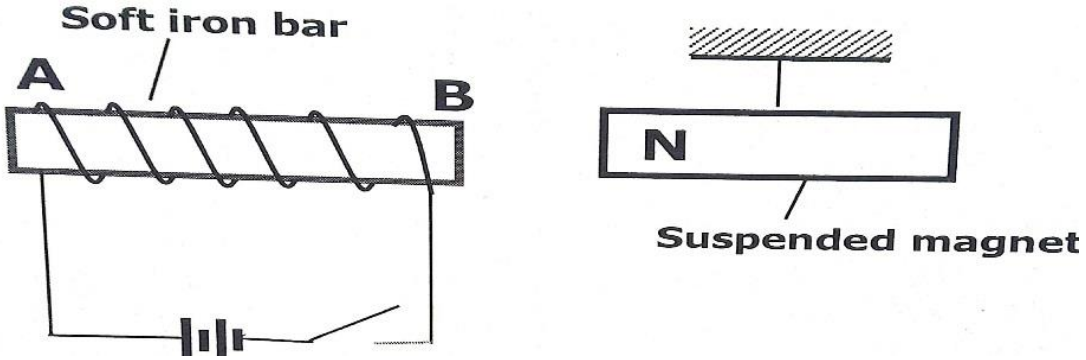
a) A pinhole camera forms an image of size 10cm. The object is 5m tall and 20m away from the pinhole. Find the length of the pinhole camera. **(2mks)**

……

……

……

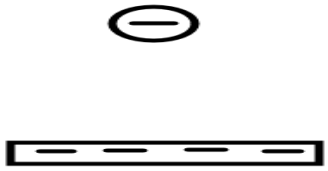
2. a) The **figure 1** below shows a soft iron bar that's placed in a coil near a free suspended magnet.



State and explain the observation made when the switch is closed. **(2mks)**

b.) Give a reason why attraction in magnetism is not regarded as a reliable method of testing for polarity. **(1mk)**

3. The **figure 2** below shows an isolated negative charge placed closer to a negatively charged plate. Draw the electric field patterns. **(2mk)**



4. Two pins are hanging from a magnet as shown in the diagram below **(figure 3)**

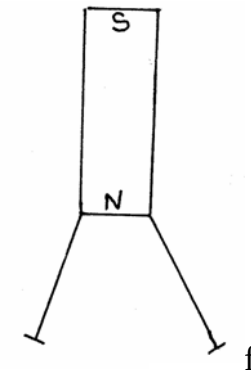


fig 3

Explain why they do not hang vertically downwards. **(2mks)**

……

……

……

5. (a) State the effect of pressure on the speed of sound in air. **(1mk)**

……

……

(b) A boy stands 190m from a high wall and claps his hands. If he hears an echo1.3 Seconds later, calculate the speed of sound in air. **(2mks)**

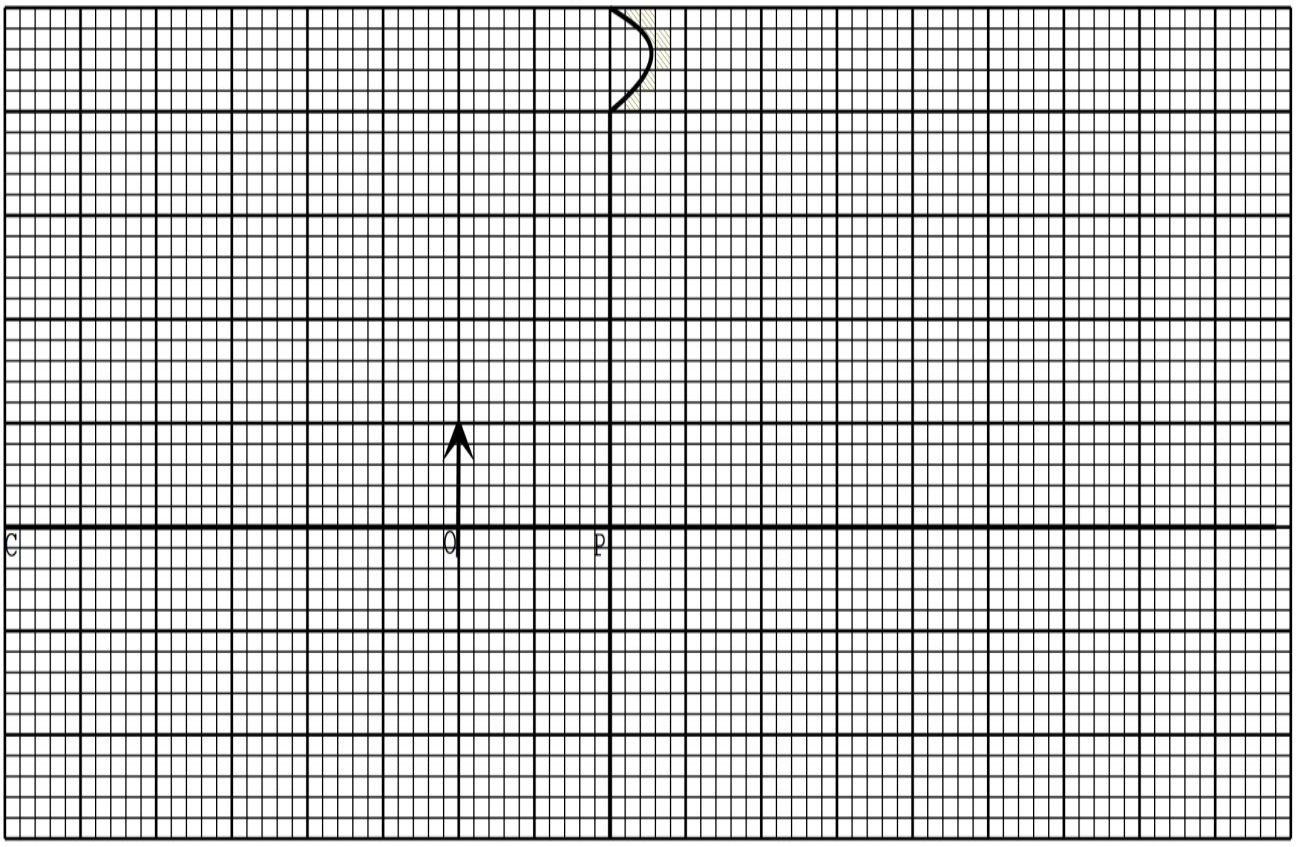
6. State any two factors that determine the heating effect by an electric current. **(2mks)**

……

……

7. **Figure 4** below shows an object, O placed 10 cm in front of a concave mirror whose radius of curvature, C is 40 cm.

Figure 7



On the same figure, draw a ray diagram to show the position of the image formed**.** **(3 mks)**

8. State two advantages of an alkaline battery over lead acid battery. **(2mks)**

……

……

9. An electric bulb with filament of resistance 480Ω is connected to 120 V mains supply. Determine the energy dissipated in 7 min **(3 mks)**

10. The **figure 6** below shows a cross section of a dry cell.

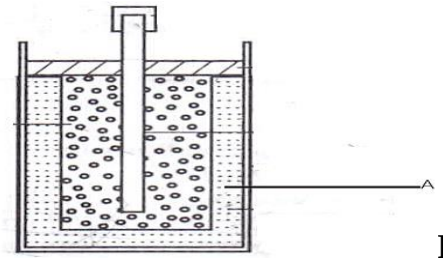


Figure 6

(i) Name the part labeled A **(1 mark)**

(ii) State the use of manganese (iv) oxide in the cell **(1 mark)**

SECTION II (55 marks)

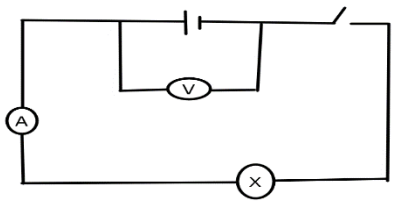
11. a) i) In large currents, large resistors in parallel are preferred to low resistors in series. Explain **(1mk)**

ii) St

iii) ate one condition under which ohm's law is obeyed in a metal conductor. **(1mk)**

iv) A circuit constituting a battery, a metal wire, an ammeter and a switch connected in a series. The switch is closed and the ammeter reading noted. The metal wire is now heated. State observation on the ammeter reading and give a reason for your answer. **(2mks)**

b.) In the **figure 7** below, the voltmeter reads 2.4V when the switch is open. When the switch is closed, the voltmeter reads 2.1V and the ammeter reads 0.15A.



Determine the

i) E.m.f of the cell **(1mk)**

ii) Internal resistance of the cell **(3mks)**

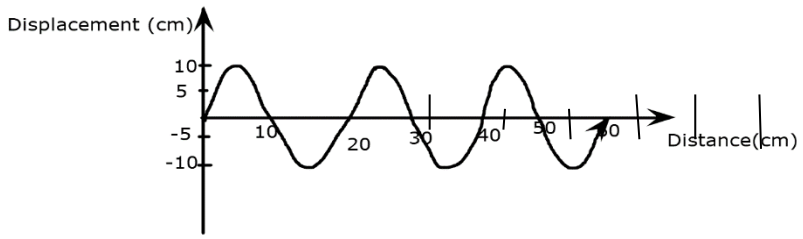
iii) Resistance of the bulb **(2mks)**

d.) Explain why a voltmeter of high resistance is more accurate in measuring potential difference that one of low resistance **(1mk)**

d.) Distinguish between electrical resistance and a resistor **(1mk)**

12. a) I. Define the term wavelength of a longitudinal wave **(1mk)**

II. The **figure 8** below shows a displacement distance for a certain wave motion.



Determine

i) The amplitude of the wave **(1mk)**

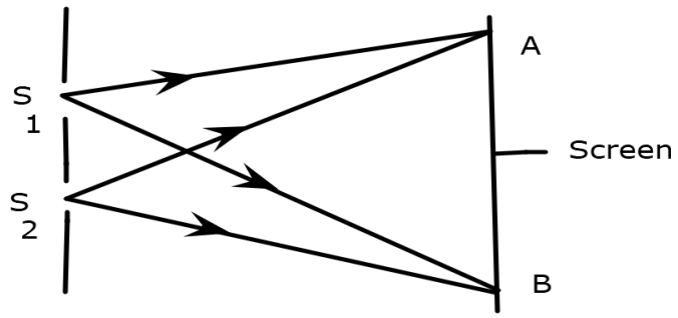
ii) The wavelength of the wave **(1mk)**

iii) Given that the frequency of the wave is 40Hz, determine the:

I. Periodic time (T) **(1mk)**

II. Speed of the wave **(3mks)**

b.) **Figure 9** below shows light rays from two coherent sources S_1 and S_2 falling on screen. Dark and bright fringes are observed between A and B



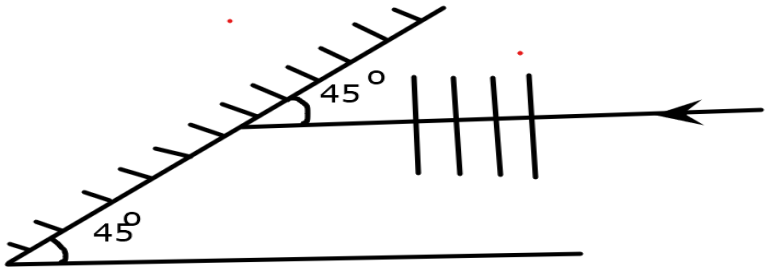
i) State the function of S_1 and S_2 **(1mk)**

ii) State how

I. Bright fringes are formed **(1mk)**

II. Dark fringes are formed **(1mk)**

c). **Figure10** below shows plane water waves incident on a plane reflector placed at an angle to the path of the waves.



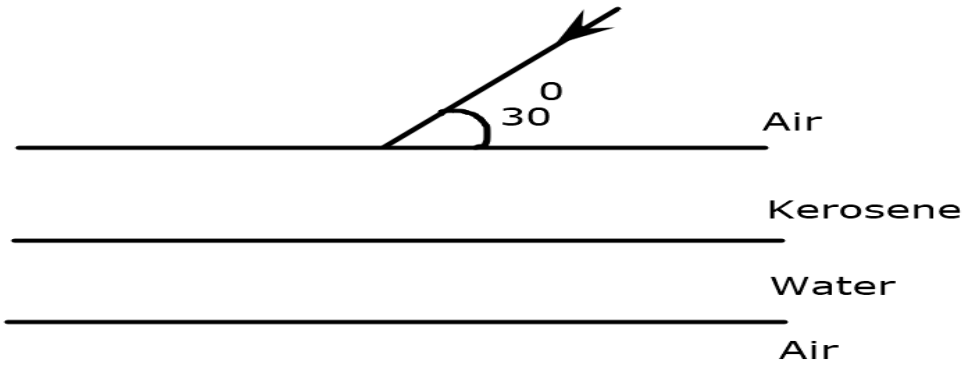
Complete the diagram to show the reflected waves **(2mks)**

13. a.) State Snell's law **(1mk)**

……

……

b.) The**Figure 11** below shows a ray of light travelling incident on air-kerosene interface.



(i) If the speed of light in kerosene is 2.08 x10^8 m/s, find the refractive of kerosene. (**speed of light in air=3.0 x10^8**) **(2mks)**

ii.) Determine the angle of refraction in water (**$_a n_w$ =4/3**) **(4mks)**

iii.) On the same diagram sketch the path of light as it traverses through the media showing the angle of refraction in air **(3mks)**

14. (a) State Ohm's law. **(1 mark)**

(b) You are provided with the following apparatus:

- Connecting wires
- An ammeter
- Fixed resistor
- A voltmeter
- A variable resistor
- Switch
- 2 dry cells in a cell holder

(i)In the spaces below, draw the circuit that can be used using the apparatus above to verify Ohm's Law. **(3 marks)**

(ii) Briefly explain how you can obtain the results to verify Ohm's law. **(4mrk)**

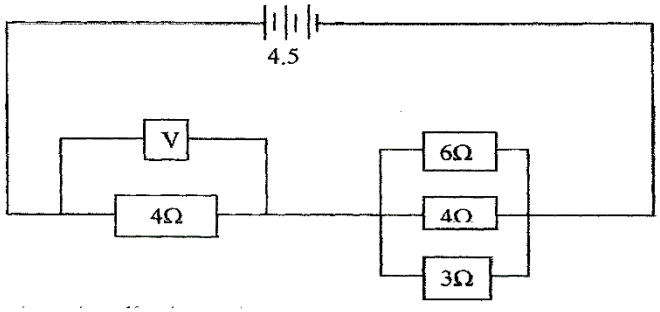
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(c) Study the circuit diagram below and answer the questions that follow.



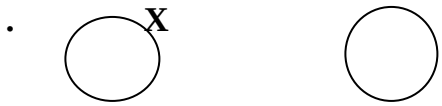
(i) Calculate the effective resistance of the circuit. **(3mrks)**

(ii) Find the voltmeter reading. **(2mrks)**

15. a) Describe two factors that affects the strength of an electromagnet **(2 mks)**

b) State Fleming's left hand rule **(1 mks)**

c) Show the magnetic field pattern around this set up **(2 mks)**

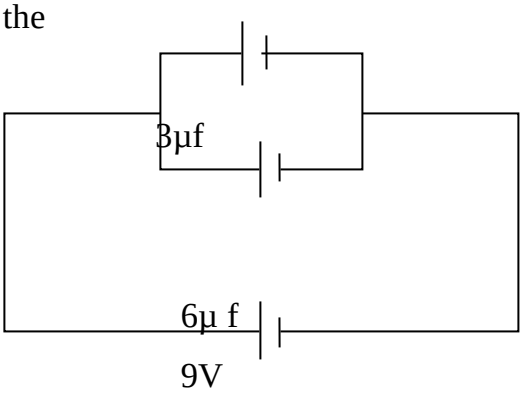


16. a) Define the term capacitance **(1 mks)**

……

……

b) Determine the



i) Charge **in 3 µF** **(2 mks)**

ii) P.d across **6µF** **(2 mks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

Paper 3 **Practical**

CONFIDENTIAL

INSTRUCTIONS TO SCHOOLS

1. The information contained in this paper is to enable the head of school and the teacher in charge of Physics to make adequate preparations for this Physics practical examination. **NO ONE ELSE** should have access to this paper or acquire knowledge of its contents. Great care **MUST** be taken to ensure that the information here does not reach the candidates either directly or indirect.

2. The **physics teacher** should note that it is his / her responsibility to ensure that each apparatus acquired for this examination agrees with the specifications given.

3. The question paper will not be opened in advance.

QUESTION 1

Each candidate will require:

- A half – metre rule.
- A 50g mass
- A piece of thread.
- A knife edge.

QUESTION 2

Each candidate will require:

- *A resistance wire/SWG 32-nichrome mounted on a millimeter scale labelled MN.*
- *A switch*
- *A voltmeter (O1A)*
- *An ammeter (O1A)*
- *Two dry cells size D (New)*
- *Six connecting wires at least 3 with crocodile clips*
- *White screen*
- *Candle*
- *Match box (to be shared)*
- *Convex lens (f=20cm)*
- *Lens holder.*

FORM 4 ENDTERM 1 EXAMS

SERIES 2

PHYSICS

PAPER 3

TIME: 2½ HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided above.*
- *Sign and write the **date** of the examination in the spaces provided above.*
- *You are supposed to spend the first **15** minutes of the **2** ½ hours allowed for this paper reading the whole paper carefully before commencing your work.*
- *Marks are given for a clear record of the observation actually made, their suitability, accuracy and the use made of them.*
- *Candidates are advised to record their observations as soon as they are made*
- *Non-programmable silent electronic calculators **may be** used.*

FOR EXAMINER'S USE ONLY.

Question	Maximum score	Candidate's score
1	20	
2	20	
TOTAL	40	

QUESTIONS

1. You are provided with the following apparatus:

- A half-metre rule.
- A piece of thread.
- A knife edge.
- A 50g mass.

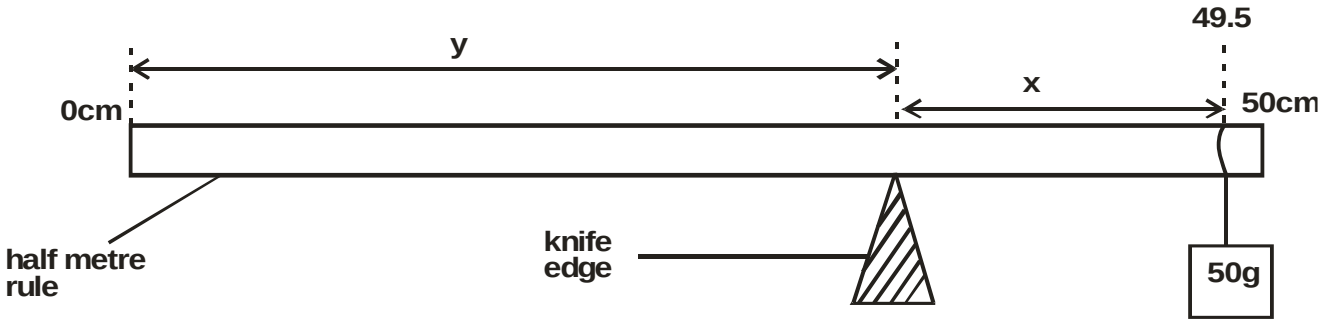
Procedure

i) Write down the mass of the half-metre rule as labelled on it.

Mass R…….kg **(1 mark)**

ii) Using a loop of thread suspend the 50g mass at the 49.5cm mark on the half-metre rule.

iii) With the 50g mass fixed at that position adjust the position of the half-metre rule on the knife edge until it balances horizontally as shown in figure 1.



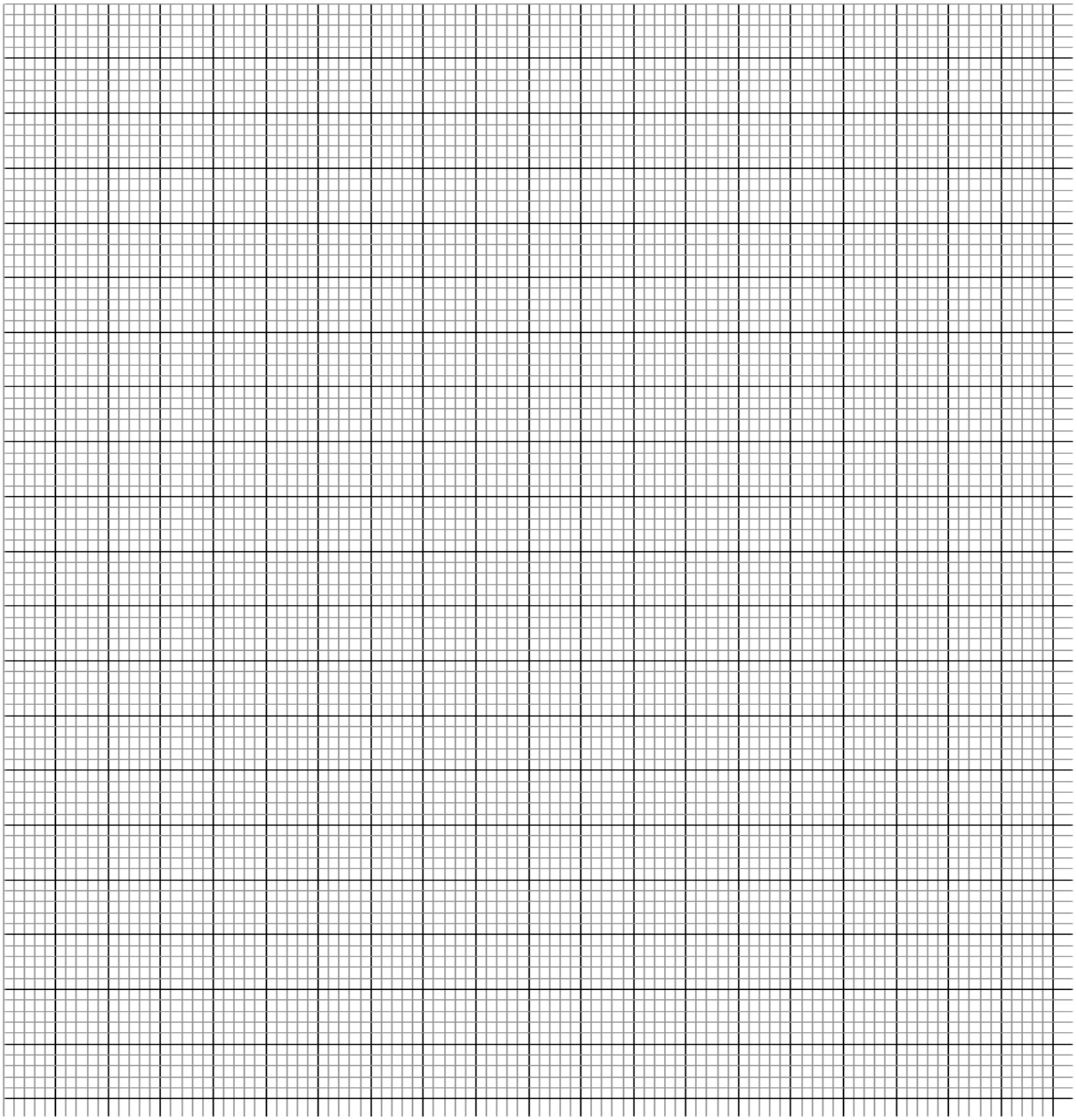
iv) At the balance position, read off the length x and y and record in table 1.

v) Move the suspended mass 2cm towards the centre of the rule and repeat parts (iii) and (iv) to obtain other values of x and y so as to complete table1. **(6 marks)**

Table 1

Position of the mass of 50g	x (cm)	y (cm)
49.5 cm mark		
47.5 cm mark		
45.5 cm mark		
43.5 cm mark		
41.5 cm mark		
39.5 cm mark		
37.5 cm mark		
35.5 cm mark		

vi) Plot a graph of y (cm) against x (cm). **(5 marks)**



vii) Calculate the gradient of your graph. **(3 marks)**

viii) The relationship between y and x is given by $y = \frac{50}{P}x + C$ where P is a constant and C is the distance of the centre of gravity of the rule from the 'zero' end. From your graph determine;

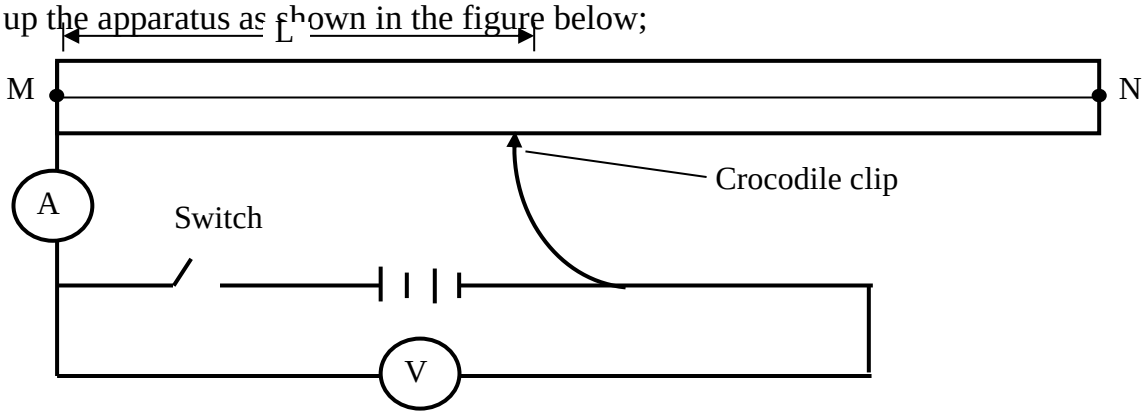
I. The constant P. **(3 marks)**

II. The position of the centre of gravity of the rule. **(2 marks)**

2. (a) You are provided with the following apparatus:

- *Resistance wire fitted on a scale labelled MN*
- *Switch*
- *Voltmeter*
- *Ammeter*
- *Two dry cells*
- *Six connecting wires*

(i) Set up the apparatus as shown in the figure below;



(ii) Remove the crocodile clip to the resistance wire such that MN and close the switch. Record the voltmeter reading.

Y=……..V **(1 mark)**

(iii) Attach the crocodile clip to the resistance wire such that L=10cm

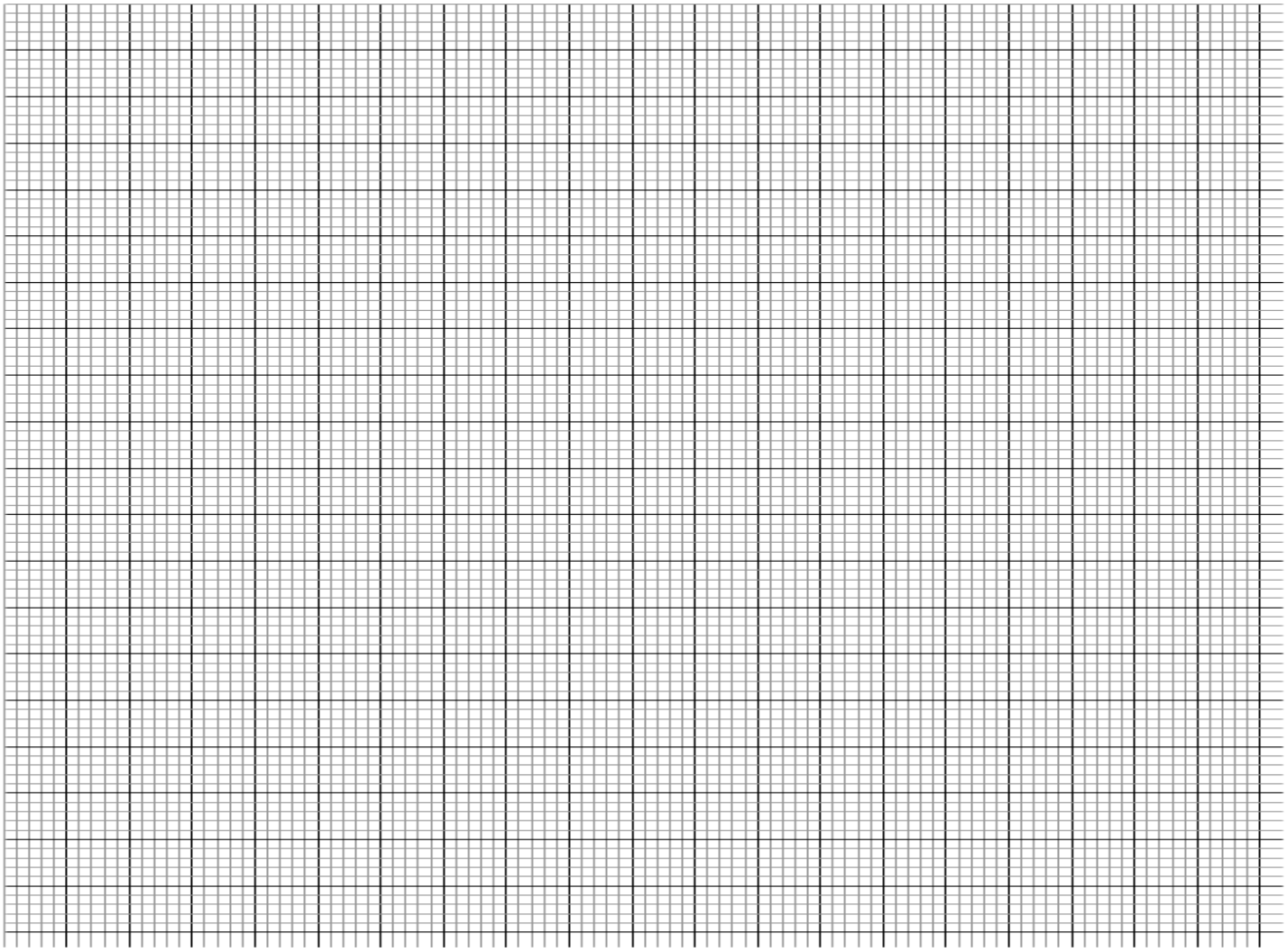
(iv) Record the voltmeter and ammeter readings in the table below.

(v) Repeat the procedure in (iii) and (iv) for L=20cm, 30cm, 50cm, and 80cm

(vi) Complete the table below; **(5 marks)**

Length L=cm	10	20	30	50	80
Current I (A)					
P.d (V)					
Y-V					
$\frac{V}{Y-V}$					
R = $\frac{V}{I}$					

b) Plot a graph of R (vertical axis) against $\frac{V}{Y-V}$ **(5 marks)**



c) Determine the slope m of the graph **(2marks)**

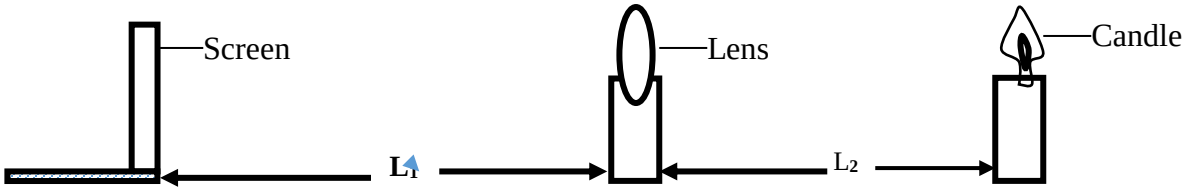
d) The graph is given by the equation $R = \frac{5mv}{y-v} + d$ determine the value of m and d **(2 marks)**

(b) You are provided with the following set of apparatus

- A metre rule
- A white screen
- A candle
- Lens and lens holder

Procedure

i) Set up the apparatus as shown



ii) Starting with L_1=30cm, adjust the position of the candle in order to obtain a sharp image on the screen. Record the value of L_2……. **(1mk)**

iii) Repeat the procedure for L_1=60cm

iv) Fill and complete for values of L_1/L_2 below. **(3 marks)**

L_1cm	L_2(cm)	$\frac{L_1}{L_2}$
30		
60		

v) Given the equation

$$F_1 = \frac{L_1}{m+1}$$

When m=magnification determine the value of focal length f, **(2 marks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

AGRICULTURE

PAPER 1

TIME: 2 HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

443/1

AGRICULTURE

PAPER 1

TIME: 2 HOURS

INSTRUCTIONS

- *Write your name , class, admission number above*
- *This paper consist of three section A, B, and C*
- *Answer all questions in section A and B*
- *Answer any two questions in section C*
- *All answers should be written in the spaces provided*

FOR EXAMINERS USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE SCORE
A	1-16	30	
B	17-20	20	
C		20	
		20	
	TOTAL SCORE	90	

SECTION A (30 MARKS

Answer all question in this section in the space provided

1. Name **four** branches of agriculture**.** **(2 marks)**

……

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……

……

2. Name **four** soil constituent**s.** **(2 marks)**

……

……

……

……

3. State **four** different methods of clearing land before primary cultivation. **(2 marks)**

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……

4. Name four type of pumps used to lift water from its source. **(2 marks)**

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……

5. What are the characteristic of fertile soi**l?** **(2 marks)**

……

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……

……

6. State **four** factors of production**.** **(2 marks)**

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7. Name **four** elements required by plants in large quantities**.** **(2 marks)**

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8. Name **four** factors to consider when selecting a nursery site. **(2 marks)**

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9. Give **four** characteristics of a good grain store. **(2 marks)**

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10. Name **four** categories of vegetables **(2 marks)**

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11. Name **four** land reform programs. **(2 marks)**

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12. State **four** type of soil erosion by water. **(2 marks)**

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13. Give **four** methods weed control in a crop farm. **(2 marks)**

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……

14. Name four factors affecting the efficiency of pesticides**.** **(2 marks)**

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15. Name **four** advantages of silage making**.** **(2 marks)**

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SECTION B (20 MARKS)

Answer all the questions in this section in the spaces provided

16. The diagram below illustrates a maize cob attacked by a disease. Study it carefully and answer the questions that follow.



a) Identify the disease. **(1 mark)**

b) Apart from maize give **four** other crops that may be attacked by the disease. **(2 marks)**

……

……

……

c) State **four** methods of controlling the disease. **(2 marks)**

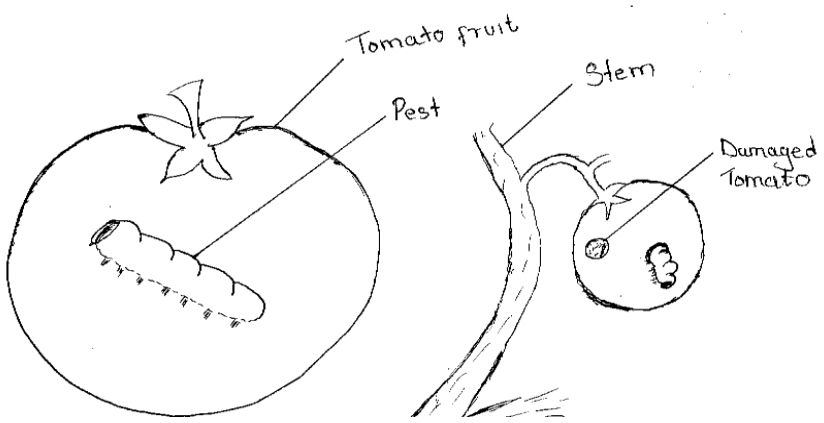
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17. The diagram below is an illustration a tomato crop pest. Study it and answer the question that follows.



a) Identify the pest**.** **(1mark)**

……

b) How can a farmer control the pest named in (a) above**.** **(1 mark)**

……

……

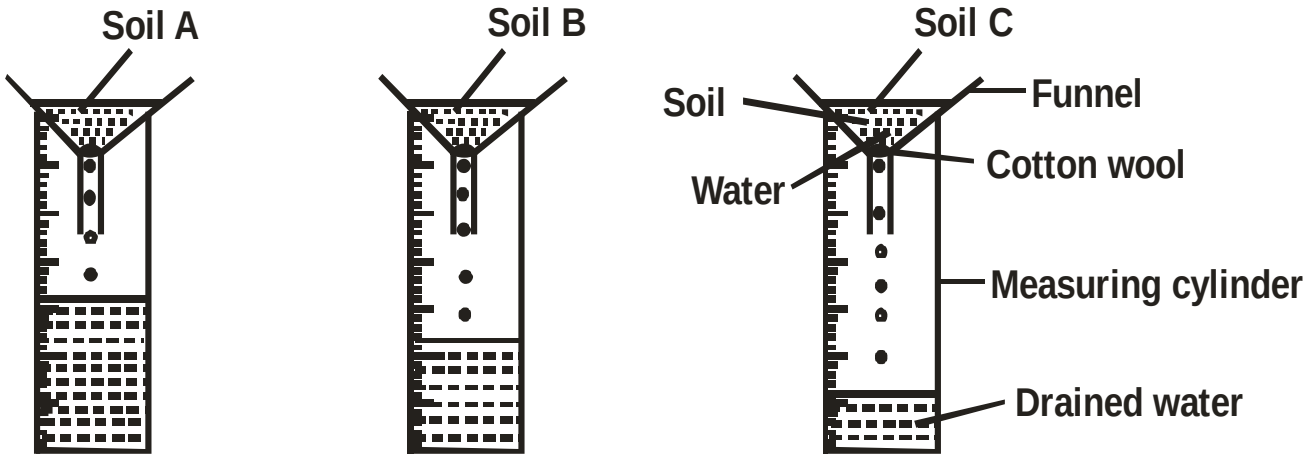
c) Name other **three** minor tomato pest**.** **(3 marks)**

……

……

……

18. The diagrams below show a set-up of an experiment to study an aspect of soil. Study it and answer the question that follows.



a) State the aim of the experiment. **(1 mark)**

……

b) If the volume of water illustrated in the measuring cylinder was observed after one hour identify the soil sample labeled A and B.

Soil sample **A.** **(1 mark)**

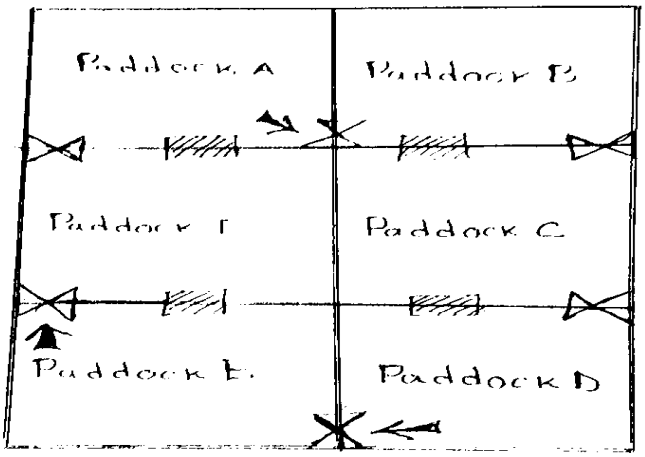
Soil sample **B.** **(1 mark)**

c) State **two** ways in which the soil structure of the sample labeled C above can be improved**.(2 mk)**

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……

19. The diagram below illustrates a grazing system. Study it carefully and answer the question that follows.



Water trough

Gate from paddock to the next

Movement of livestock from one paddock to the next

a) Identify the grazing system illustrated above **(1mark)**

b) State **four** advantages of the grazing system illustrated above. **(4 marks)**

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SECTION C (40MARKS)

Answer any two questions in this section in the spaces provided

20. (a) Describe the cultural methods used to control pest in the farm. **(10mks)**

(b) State and explain five biotic factors influencing agriculture. **(10mks)**

21. a)Explain why settlement schemes were established in Kenya soon after independence.**(10 mks)**

b) State the uses of farm records **(10 marks)**

22. a) Explain the factors considered in choosing seed rate**s** **(8mks)**

b) Describe the production of cabbages under the following sub headings

i) Nursery establishment and management **(6 marks)**

ii) Transplanting **(6marks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

AGRICULTURE

PAPER 2

TIME: 2 HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS:

- *This paper consists of three sections A, B and C.*
- *Answer all questions in sections A and B and any two questions in section C.*
- *All answers must be written in the spaces provided.*

SECTION A: (30 MARKS)

Answer all the questions from this section.

1. Name three types of specialized feeding carried out in livestock management. **(1 ½ mks)**

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2. Name the breed of sheep adapted to wet and marshy conditions of Kenya highlands.**(1 mk)**

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3. Give two ways of sterilizing a milk churn. **(1 mk)**

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4. Define the term epistasis as used in livestock production. **(1mk)**

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5. Name two methods used in ration computation. **(1mk)**

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6. Give five reasons for care and maintenance of farm tools and equipment **(2½ mks)**

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7. Give two reasons for throwing grains to poultry on the litter in a deep litter poultry hous**e. (2mks)**

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8. What are the terms used to describe the young ones of the following livestock. **(2mk)**

(i) Rabbits –

(ii) Fish –

(iii) Goat –

(iv) Donkey -

9. Name the causal organisms of the following diseases in livestock. **(2mk)**

(i) East coast fever -

(ii) Trypanosomiasis -

(iii) Rift Valley fever -

(iv) Anaplasmosis -

10. Give four reasons for castrating farm animals. **(2mk)**

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11. List any three light breads of poultry **(1½)**

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12. Give two qualities of a creep feed that makes it suitable for piglets **(2mk)**

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13. State four management practices carried out in sheep during preparation for tupping. **(2mk)**

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14. Name any two plumbing tools **(1mk)**

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15. List two symptoms of bloat attack in cattle **(1mk)**

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16. What do you understand by the following terms as used in livestock health? **(2mk)**

(a) Predisposing factors –

(b) Rigor mortise -

17. Name four control measures of fleas in a flock of layers **(2mk)**

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18. Differentiate between the following tools **(2mk)**

i. A sickle and secateurs -

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ii. A pair of tin snip and a pipe wrench -

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19. What is the vector of Nagana? **(½ mk)**

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SECTION B: (20MARKS)

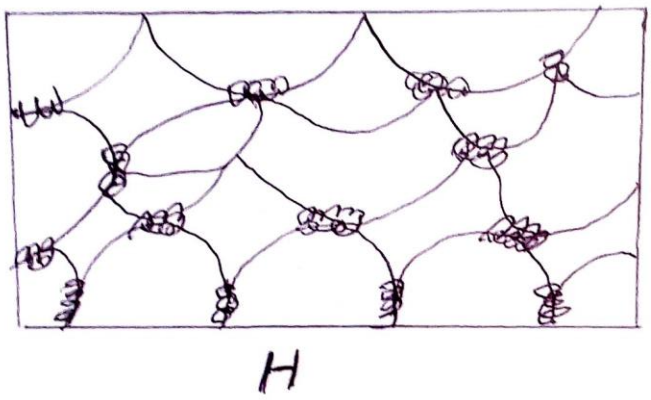
Answer all the questions in the spaces provided.

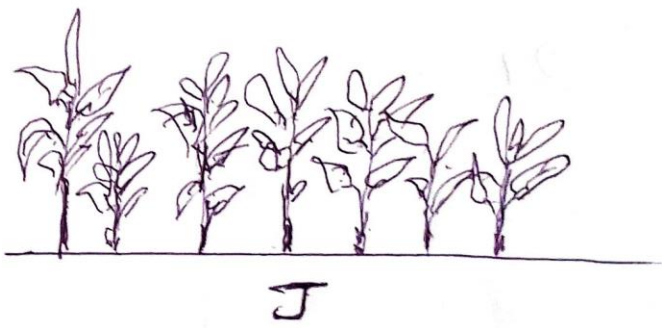
20 (a) Compute 200kg feed ration with 20% DCP from maize with 10% DCP and cotton seed cake containing 45% DCP. **(4mk)**

(b) Name two feed ingredients that should be added to balance the feed ration above. **(2mk)**

(c) Name two advantages of using a sub-soiler during land preparation **(2mk)**

21. The diagram H and J show two types of fences





(a) Identify each type of fence **(2mk)**

H -

J -

(b) Name the correct material and correct tool for fastening wooden posts when constructing the types of fence illustrated in diagram H. **(2mk)**

Material –

Tool -

c) State three advantages that fence J may have over fence H **(3mk)**

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



(i) Name the type of identification illustrated above **(1mk)**

(ii) Give the identification number of the pig illustrated above **(1mk)**

(iii) Using a diagram, illustrate how animal number 83 can be identified using the above method. **(2mk)**

(iv) What is the use of metal rails in a farrowing pen **(1mk)**

SECTION C: (40 MARKS)

Answer any two questions from this section.

23(a) Describe any four general effects of parasites on livestock **(8mk)**

(b) Name two causes of livestock diseases **(2mk)**

(c) Describe East Coast Fever (E.C.F.) under the following subheadings

(i) Animals attacked **(1mk)**

(ii) Causal agent **(1mk)**

(iii) Vector **(1mk)**

(iv) Symptoms **(5mk)**

(**v)** Control **(2mk)**

24 (a) Explain the uses of the various hand tools in the construction of the Kenya top bar hive. **(12mk)**

(b) Describe the management practices that would ensure maximum yield of fish in a fish pond. **(8mk)**

25 (a) Describe various cultural uses of livestock **(8mk)**

(b) Describe various livestock rearing practices **(12mk)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

BUSINESS STUDIES

PAPER 1

TIME: 2 HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

Answer all the questions in the spaces provided

1. Highlight **four** ways in which the economic environment may positively influence the activities of a **business** **(4 marks)**

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2. Highlight **four** benefits to a local community when a milk processing factory is established in their locality **(4 marks)**

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3. State corporations are business units owned by the government. State **four** general functions of such **organizations** **(4 marks)**

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4. Identify the mailing service that fits the following descriptions **(4 marks)**

Description	Name of the mailing service
i) Offered to travelers who may wish to receive correspondence away from their post office box	
ii) Used for sending correspondence and parcels to a destination in the shortest time possible	
iii) Offered to those sending articles of value for which security in handling is required.	
iv) Usually in form of letters and parcels including light parcels delivered by hand, road, rail or by air	

5. Highlight **four** benefits that are likely to be enjoyed by a firm as a result of expansion of the entire industry **(4 marks)**

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6. Identify **four** possible channels of distributing imported Machinery from Germany **(4 marks)**

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7. The following is a table of Assets, Liabilities and Capital. Determine the missing figures

(4 marks)

Assets	Liabilities	Capital
755,700	**a**	223,300
b	315,800	455,200
537,750	**c**	269,450
478,900	602,500	**d**

a) _____

b) _____

c) _____

d) _____

8. Highlight **four** advantages of division of labour and specialization in an organization(**4 marks)**

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9. Jennifer has now completed her secondary school studies. She wishes to engage in a small-scale retail business in her locality. Highlight **four** types of such business she can start. **(4 marks)**

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10. Highlight **four** measures that have been put in place by the government to bring order and sanity in the public transport sub-sector. **(4 marks)**

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11. Outline **four** differences between Assurance policies and Insurance policies **(4 marks)**

Assurance Policies	**Insurance policies**
i)	
ii)	
iii)	
iv)	

12. The equations given below relate to quantity demanded and quantity supplied at the equilibrium point.

Qde = 4p + 50

Qse = 8p + 30

Determine the equilibrium price and quantity. **(4 mark)**

13. State **four** emerging issues in population and employment in Kenya **(4 marks)**

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14. Highlight **four** services that are being offered by Kenyan Women Finance trust (KWFT) to their clients as a Micro-Finance Institution. **(4 marks)**

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15. Highlight **four** characteristic of basic human wants. **(4 marks)**

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16. Computerization is a modern trend that has led to success of many organizations. List **four** ways in which it contributes to the success of an organization. **(4 marks)**

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17. The Kenya Bureau of standards (KEBS) is one of the bodies that is mandated by the Government of Kenya to regulate business activities. Highlight **four** Ways in which it regulates businesses. **(4 marks)**

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18. Briefly give the meaning of the following warehouses. **(4 marks)**

i. Private warehouse.

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ii. Public warehouse.

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iii. Free warehouse.

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iv.Bonded warehouse.

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19. Outline **four** features of perfect competition market structure. **(4 marks)**

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20. Give **four** reasons why high per capita income in a country may not be an indicator that its citizens are living a better standard of live. **(4 marks)**

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21. State the book of original entry used to record information from the following source documents **(4 marks)**

Source Document	Book of Original entry
Received invoice	
Copy of credit note	
Payment voucher	
Issued invoice	

22.In the spaces provided indicate with a tick (√) whether each of the following transaction will increase, decrease or have no effect in the balance sheet totals. (**4 marks)**

Transaction	increase	Decrease	No effect
Selling a business asset at a loss			
Depositing extra cash in business account			
Drawing cash for personal use			
Buying stock on credit			

23. State any four gaps in the Kenyan market with investment opportunities **(4 marks)**

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24.State four circumstances under which advertising may not be beneficial to the customers **(4 marks)**

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25. Highlight four circumstances under which the law of demand will not apply **(4 marks)**

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FORM 4 ENDTERM 1 EXAMS

SERIES 2

BUSINESS STUDIES

PAPER 2

TIME: 2 HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS

1. This paper consist of six questions.

*2. Answer any **five** questions.*

1a) There has been a decline in the demand for New cloths in the market recently. Explain five factors that may have caused this trend. **(10mks)**

b) Explain the procedure for obtaining an insurance policy. **(10mks)**

2a) Explain five measures that would be taken to ensure smooth functioning of a warehouse. **(10mks)**

b) The balances below were extracted from the books of Karanja Traders as at 1st June 2017.

	shs.
Equipment	320,000
Stock	180,000
Bank	104,000
Cash	20,000
Capital	544,000
Creditors	80,000

During the first week of June 2017 the following transactions took place.

2017:

June 2 -Karanja Traders introduced additional funds into the business by depositing sh. 76,000 into business bank account.

3 -Purchased a motor vehicle from CMC Motors worth sh. 400,000 on credit.

5 -Paid a creditor sh. 12,000 cash.

6 -Sold goods on credit to Anita sh. 50,000

7 -Bought equipment sh. 100,000 by cheque.

Required:

Prepare the balance sheet of Karanja Traders as at 7th June 2017 showing the items in their relevant classes**.** **(10mks)**

3a) Highlight **five** reasons why the government may find it necessary to participate in business activities**.** **(10mks)**

b) Explain five reasons why it is hard to fully satisfy human wants. **(10mks)**

4a) Explain five reasons why it is important for an entrepreneur to have a business plan. **(10mks)**

b) Explain five ways in which the stock exchange market facilitates the growth of the country's economy. **(10mks)**

5a) Despite the economies of scale enjoyed by large firms, some firms continue to operate on small scale basis. Explain five reasons. **(10mks)**

b) Explain five factors that a trader should consider before giving credit. **(10mks)**

6a) Explain **four** benefits that will accrue to the Kenyan government when drilling of Turkana oil wells will be completed. **(8mks)**

(b) On 1st'March 2014,Kendi had cash in hand sh.7800 and a bank overdraft of shs.23,400.During the month, the following transactions took place:

March 3: Cash sales sh6,500 paid direct into the bank.

" 4: Bought goods for shs.15,000 and paid by cheque.

" 6: Cash sales sh.50,000.

" 9: Received a cheque for Sh.76,500 from Amolo in settlement of his debts.

" 13: Paid insurance premium sh. 16,000 in cash.

" 14: Paid Kamotho by cheque Sh.9,700 in full settlement of his account having deducted 3% cash discount.

" 17: Cash sales Sh.150, 000 paid direct to bank.

" 21: Withdrew Sh 30,000 from bank for office use.

" 23: Received a cheque of sh 23,750 from Rotich in full settlement of his account less 5% cash discount.

" 25: Paid wages of shs. 20,000 in cash.

" 26: Cheque received fromAmolo was dishonored.

" 30:Banked all cash except Sh 3,000.

Prepare a three-column cash book duly balanced. **(12mks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1

TIME: 2½ HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

INSRUCTIONS:

Attempt Any Five Questions.

1. a) Identify the five poetic books in the bible**.** **(5mks)**

b) Outline the translation of the bible from the original language to local languages. **(8mks)**

c) Describe seven ways in which Christians use the bible to spread the gospel today. **(7mks)**

2.a) With reference to Genesis 12:1 – 9 outline seven promises given to Abraham by God at the time of his call**.** **(6mks)**

b) Give four differences between the Jewish and traditional African practices of circumcision **(8mks)**

c) State six ways in which Christians identify themselves in the society today. **(6mks)**

3.a) How did prophet Samuel promote the worship of Yahweh in Israel**?** **(8mks)**

b) Explain six effects of idolatry in Israel during the time of Prophet Elija**h** **(6mks)**

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

4.a)Identify six characteristics of false prophets in the Old Testament**.** **(6mks)**

b) Describe the teaching of prophet Amos on Israel's **election** **(6mks)**

c) State eight factors that hinder Christians from practicing their faith in God**.** **(8mks)**

5.a) Outline the measures taken by Nehemiah to restore the Jewish community after the completion of the wall of Jerusalem**.** **(7mks)**

b) Explain why Nehemiah introduced the policy of separation of Jews from foreigners. **(8mks)**

c) Identify five ways in which the government of Kenya supports church leaders in their work**.** **(5mks)**

6.a) Outline the causes of death in traditional African communities**.** **(6mks)**

b) Explain the significance of rituals performed after the death of a person in traditional African communities**.** **(7mks)**

c) List seven moral values promoted during funeral ceremonies in traditional African communities **(7mks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

CHRISTIAN RELIGIOUS EDUCATION

PAPER 2

TIME: 2½ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

Instructions to candidate

a) *Write your name, admission and class.*

b) *Candidates must check the paper to ascertain that all pages are printed and no question is missing*

c) *Answer* ***any five*** *questions in the foolscaps provided.*

d) *All answers must be written in English.*

For Examiner's Use Only

QSTN	1	2	3	4	5	6	
MARKS	20	20	20	20	20	20	
SCORE							

QUESTIONS

1 a) Outline Psalmist's prophecies about the coming of Messiah. **(7marks)**

b) Describe the activities that took place during the dedication of Jesus in the Temple (Luke 2:22-40) **(7 marks)**

c) What lessons do Christians learn from the incident when Jesus was left behind by his parents in the Temple? **(6 marks)**

2 a) State ways in which John the Baptist prepared the way for the Messiah. **(8marks)**

b) Give reasons why Jesus was rejected in Nazareth. **(5marks)**

c) In what ways are church leaders put to test today? **(6 Marks)**

3 a) Give examples from the life and Ministry of Jesus which show that He promoted social equality. **(8 Marks)**

b) Explain how the disciples reacted to the use of parables in Jesus' teachings. **(6 Marks)**

c) What activities does the church engage in to demonstrate love for others? **(6 Marks)**

4 a) Identify the fruits of the Holy Spirit as taught by Saint Paul in the early church.**(7marks)**

b. Explain theteachingsof Peterconcerningthe people ofGod (1st Peter 2:9-10). **(8 marks)**

(c) State how kindness as a fruit of Holy Spirit is abused in church in Kenya today. **(5marks)**

5a) Explain the sources of Christian ethics. **(6marks)**

b) Describe life skills that are necessary for living a good Christian life. **(7marks)**

c) Identify similarities between the Traditional African and Christian view on human sexuality. **(6 marks)**

6a) State six moral values that enhance the creation of a just society. **(6marks)**

b) Explain any four forms of irresponsible sexual behavior. **(8marks)**

c)Identify similarities between the Traditional African and Christian view on human sexuality. **(6 marks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

GEOGRAPHY

PAPER 1

TIME: 2¾ HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS

- *This paper two sections: **A** and **B***
- *Answer **all** the questions in **section A.***
- *In section **B** answer **question 6** and any other **two** questions.*

SECTION A

1. (a) What are igneous rocks ? **(2 marks)**

(b) Give **two** examples of organically formed sedimentary rocks. **(2 marks)**

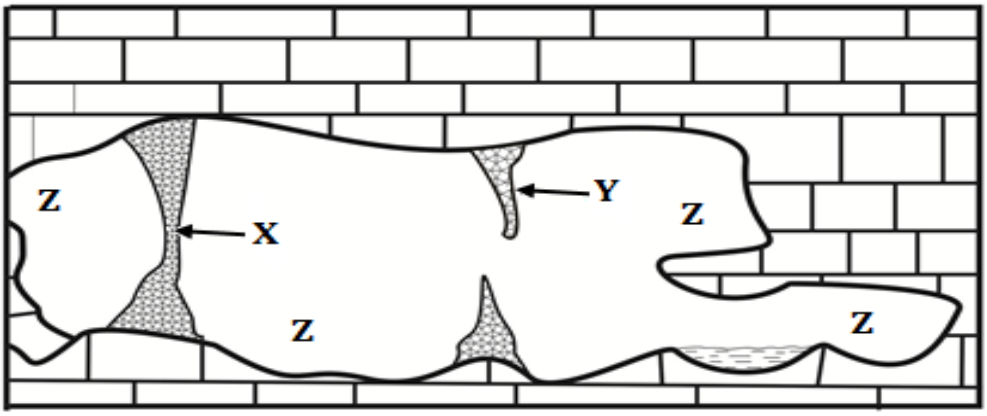
2. (a) Name **two** types of faults associated with compressional forces. **(2 marks)**

(b) State **three** characteristics of the Gregory Rift valley of Kenya. **(3 marks)**

3. (a) Name **two** types of grasslands found in Africa. **(2 marks)**

(b) State **three** reasons why some mountain tops have no vegetation. **(3 marks)**

4. The diagram below shows some karst underground features. Use it to answer question (a).



(a) Name the features marked X, Y and Z. **(3 marks)**

(b) State **three** conditions required for the formation of Karst landscapes. **(3 marks)**

5. (a) What is soil degeneration? **(2 marks)**

(b) State **three** factors that determine soil colour. **(3 marks)**

SECTION B

6. Study the map of Kijabe (1:50,000 sheet 134/3) provided and use it to answer the following questions.

(a) (i) What type of map is Kijabe? **(1 mark)**

(ii) Give the position of Kijabe railway station by latitude and Longitude. **(2 marks)**

(iii) Identify **two** human made features at grid square 2794. **(2 marks)**

(b) (i) What is the four figure grid reference of Kagwe Carbacid plant? **(2 marks)**

(ii) Citing evidence from the map, give three social services offered in the area covered by the map. **(3 marks)**

(c) Describe the distribution of natural vegetation in the area covered by the map. **(5 marks)**

(d) (i) Using a vertical scale of 1cm to represent 100 metres, draw an accurate cross section along northing 00 from easting 24 to easting 30. **(4 marks)**

(ii) On the cross section, mark and name:

- Kijabe Hill
- A railway line
- A district boundary
- A river valley **(4 marks)**

(iii) Calculate the vertical exaggeration of the cross section. **(2 marks)**

7. (a) (i) Differentiate between equinox and solstice. **(2 marks)**

(ii) Describe how a solar eclipse occurs **(4 marks)**

(b) (i) State the characteristics of the earth's core. **(5 marks)**

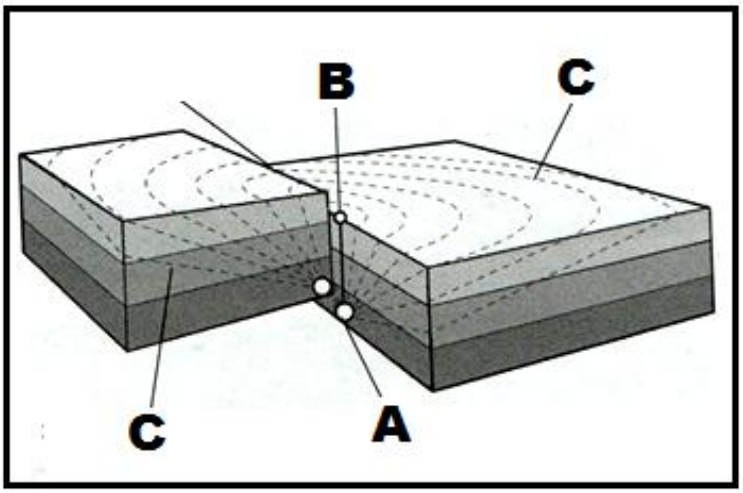
(ii) Explain **two** reasons for the shape of the earth. **(4 marks)**

(c) (i) What is International Dateline? **(2 marks)**

(ii) Explain how the revolution of the earth causes seasons. **(8 marks)**

8. (a) Define the term earthquake. **(2 marks)**

(b) The diagram below represents the occurrence of an earthquake in the crust.



(i) Name the parts marked A, B, and C. **(3 marks)**

(ii) Apart from the movement of tectonic plates, state **three** other natural causes of earthquakes. **(3 marks)**

(iii) Explain **two** ways in which the movement of tectonic plates causes earthquakes. **(4 marks)**

(c) Name **five** features formed due to extrusive vulcanicity. **(5 marks)**

(d) Explain **four** positive influences of volcanic features to human activities. **(8 marks)**

9. (a) (i) What is a lake? **(2 marks)**

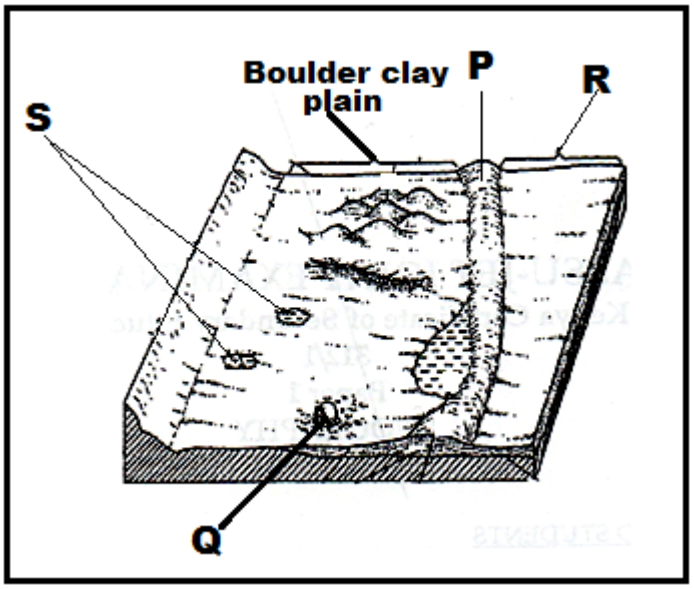
(ii) Give **five** processes that lead to formation of Lakes. **(5 marks)**

(b) Describe how Lake Victoria was formed **(6 marks)**

(c) Explain **three** reasons why some Rift Valley Lakes in Kenya are saline. **(6 marks)**

(d) Explain **three** ways in which lakes influence the climate of the surrounding areas. **(6 marks)**

10. The diagram below shows some glacial features in low lands.



(a) **(i)** Name the parts marked P, Q R and S. **(4 marks)**

(ii) Outline **three** factors that cause glacial deposition in lowlands. **(3 marks)**

(b) Describe how a fiord is formed. **(6 marks)**

(c) Explain how glaciation influences the following features influence human activities.

(i) Mining **(2 marks)**

(ii) Agriculture **(4 marks)**

(iii) Fishing **(2 marks)**

(d) Students of Nanyuki High School carried out a field study on glaciation on Mt. Kenya

(i) State **two** reasons why they conducted a reconnaissance. **(3 marks)**

(ii) Give **two** methods that they would use to collect data. **(3 marks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

GEOGRAPHY

PAPER 2

TIME: 2¾ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS:

- *This paper has **TWO** sections: A and B.*
- *Answer all the questions in section A.*
- *Answer question 6 and any other **TWO** questions from section B.*

SECTION A: (25 MARKS)

Answer all questions in this section.

1. (a) What is practical Geography? **(2 mks)**

(b) State three practical aspects we study in geography. **(3 mks)**

2. (a) Define the term agriculture. **(2 mks)**

(b) Give three climatic factors which influence agriculture. **(3 mks)**

3. Outline the advantages of using photographs in learning geography. **(5 mks)**

4. (a) What is agro-forestry? **(2 mks)**

(b) State three reasons for encouraging agro-forestry in Kenya. **(3 mks)**

5. (a) Identify three factors that influence occurrence of minerals. **(3 mks)**

(b) Give two examples of energy minerals. **(2 mks)**

SECTION B: (75 MARKS)

Answer question 6 and any other two questions in this section.

6. (a) The table below shows land use in Nairobi county in 2016. Use it to answer the questions that follow.

LAND USE	AREA IN '000Km^2
Settlement	110
Grass	30
Horticulture	50
Forest	10
TOTAL	**200**

(i) Use the above data to draw a divided rectangle. The length of the rectangle should be 10cm. **(10 mks)**

(ii) Analyze and interpret the drawn divided rectangle. **(2 mks)**

(iii) State three advantages of using divided rectangles in the presentation of statistical data. **(3 mks)**

(b) Apart from shaft method of mining, name two other methods of underground mining. **(2 mks)**

(c) Explain four problems associated with the shaft method of mining. **(8 mks)**

7. (a) (i) Define plantation agriculture. **(2 mks)**

(ii) Give three characteristics of plantation agriculture. **(3 mks)**

(iii) Apart from plantation agriculture, name three other types of farming. **(3 mks)**

(b) Name five crops in Kenya that are processed to produce vegetable oil. **(5 mks)**

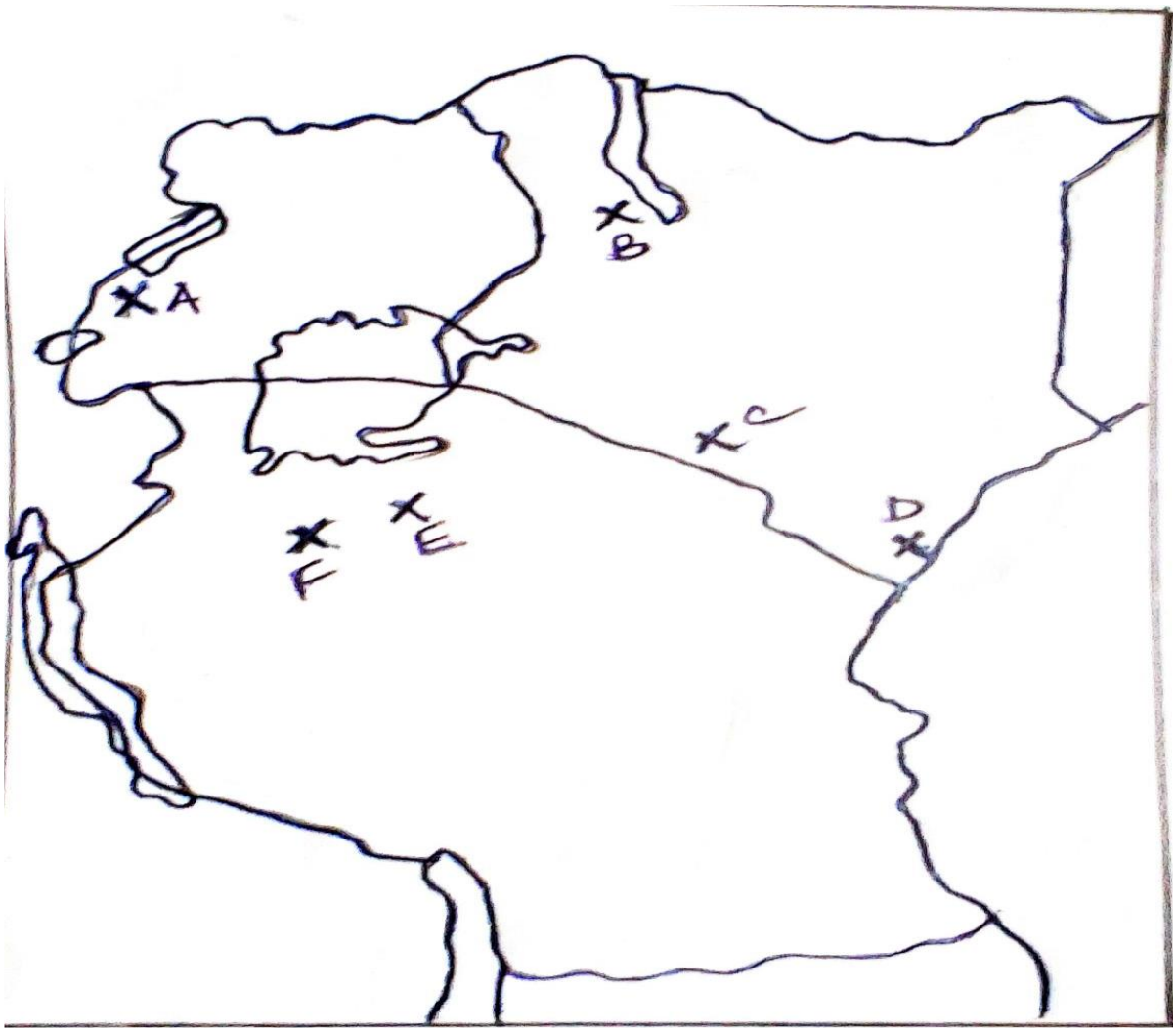
(c) (i) Name three counties in Kenya where maize is grown in large scale farming. **(3 mks)**

(ii) State four physical conditions that favour maize cultivation in the counties named in (c) (i) above. **(4 mks)**

(d) Give five uses of maize. **(5 mks)**

8. (a) Use the map of East Africa below showing the distribution of major minerals to answer the questions that follow.

MAP OF E. AFRICA SHOWING THE DISTRIBUTION OF MAJOR MINERALS



(a) Name the major minerals mined in the areas marked A – F. **(6 mks)**

(b) Give reasons why coal in Tanzania is under exploited. **(5 mks)**

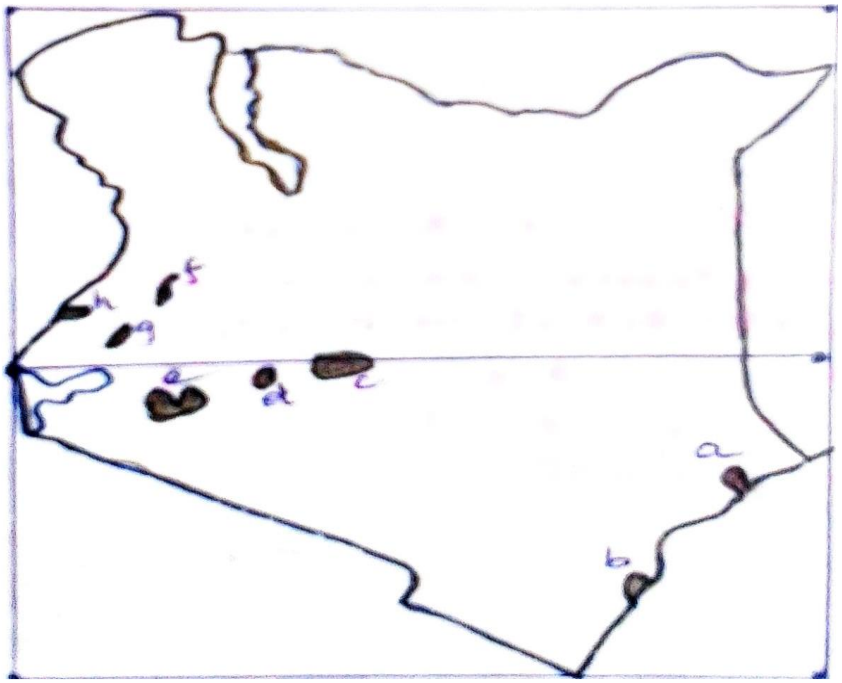
(c) Explain three negative effects of mining to the environment. **(6 mks)**

(d) (i) Give the uses of Soda ash. **(3 mks)**

(ii) Name five major oil producing countries in Africa. **(5 mks)**

9. (a) (i) The map of Kenya below shows some forested areas. Name the forest reserves marked a – h. **(8 mks)**

MAP OF KENYA SHOWING SOME FORESTED AREAS



(b) (ii) State five ways in which clearing of forests has affected the natural environment in Kenya. **(5 mks)**

(c) (i) State three softwood tree species grown in forests of Canada. **(3 mks)**

(ii) Give five characteristics of softwood forests of Canada. **(5 mks)**

(d) Give the differences between softwood forests in Kenya and Canada under the following sub-headings:-

(i) Period of harvesting. **(2 mks)**

(ii) Period of growth. **(2 mks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

HISTORY AND GOVERNMENT

PAPER 1

TIME: 2½ HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS TO CANDIDATES

*This paper consists of **three**section**: A,B** and **C***
*Answer **all** the questions in sections **A,***
Three** questions from section **B.
***Two** questions from section **C**.*

SECTIONS	A	B				C		
QUESTIONS	1 – 17	18	19	20	21	22	23	24
MARKS								

SECTION A (25MARKS)

Answer all the questions in this section.

1. Identify **two** species of early man whose remains were discovered in Kenya. **(2mks)**

2. Give **two** Kenyan communities which are classified as Western Bantu. **(2mks)**

3. Give **two** reasons why British used indirect rule in Kenya. **(2mks)**

4. State the **main** function of the judiciary in Kenya. **(1mk)**

5. Name the settler farmer who introduced wheat in Kenya during the colonial period. **(1mk)**

6. Identify **two** types of democracy. **(2mks)**

7. State **two** functions of the Independent Electoral and Boundaries Commission of Kenya. **(2mks)**

8. Name the basic unit of the political organization among most Kenyan communities during the pre-colonial period. **(1mk)**

9. Identify **two** independent churches founded in Kenya during the colonial period. **(2mks)**

10. State the type of constitution used in Kenya. **(1mk)**

11. State **two** factors that limit national unity in Kenya. **(2mks)**

12. Give **one** reason why Omani rulers were interested in establishing their control over the Kenyan coast. **(1mk)**

13. State **two** ways in which the Akamba interacted with the Agikuyu during pre-colonial period. **(1mk)**

14. Name **one** Agikuyu leader who resisted the British. **(1mk)**

15. State **one** reason why Africans were denied equal education opportunities with other races during colonial period. **(1mk)**

16. Identify **two** methods the British used to occupy Kenya. **(2mks)**

17. Who is the head of Judiciary as an arm of government in Kenya? **(1mk)**

SECTION B (45marks)

Answer any three questions from this section

18. (a) State **three** reasons for the Portuguese success in the conquest of the Kenyan coast. **(3mks)**

(b) Explain **six** social effects of the Indian Ocean Trade on the people of the Kenyan Coast up to 1500 AD. **(12mks)**

19. (a) State **three** factors that led to migration and settlement of the Bantu into Kenya before **1800 AD.(3mks)**

(b) Describe the political organization of the Agikuyu in the pre-colonial period. **(12mks)**

20. (a) Identify **three** ordinances that were passed by the colonial government to govern the distribution and use of land in Kenya. **(3mks)**

(b) Discuss **six** consequences of colonial land policies in Kenya. **(12mks)**

21. (a) State **three** communities in Kenya that displayed mixed reactions towards British occupation **(3mks)**

(b) Explain six reasons why the Maasai collaborated with the British **(12mks)**

SECTION C (30 MARKS)

Answer any two questions from this section.

21. (a) Identify the **five** causes of conflict among the people of Kenya. **(5mks)**

(b) Explain **five** methods of conflict resolution used in Kenya today. **(10mks)**

22. (a) Identify three factors that may lead to limitation of the rights to movement of a Kenyan**.** **(3mks)**

(b) Explain **six** significances of Human Rights in Kenya. **(12mks)**

23 (a) State **five** characteristics of early political organizations in Kenya. **(5mks)**

(b) Explain **fiv**e causes of Mau Mau uprising in 1952. **(10mks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

HISTORY AND GOVERNMENT

PAPER 2

TIME: 2½ HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS TO CANDIDATES

1. *This paper consists of **three** sections; **A, B** and **C***
2. *Answer **All** the questions in section **A, three** questions from section **B** and **two** questions from section C*
3. *All questions must be answered in the answer booklet provided.*

SECTION A (25 MARKS)

1. Define the term pre-history**.** **(1 mark)**

2. Mention **two** importance of studying history**.** **(2 marks)**

3. Name the first animal to be domesticated by man. **(1 mark)**

4. Identify **two** towns in Mesopotamia that developed due to early agriculture**.** **(2 marks)**

5. Define the term third world country**.** **(1 mark)**

6. Mention **two** forms of trade. **(2 marks)**

7. List any **one** disadvantage of using messengers in sending information**.** **(1 mark)**

8. Give **one** reason for the collapse of *Meroe* town**.** **(1 mark)**

9. Identify **one** early source of energy**.** **(1 mark)**

10. Name **two** sources of British constitution. **(2 marks)**

11. Name **two** types of democracy. **(2 marks)**

12. Name **one** African country that was never colonized. **(1 mark)**

13. Mention **two** symbols of unity in the *Mwene- Mutapa* Empire. **(2 marks)**

14. Which political party led Ghana to independence in 1957? **(1 mark)**

15. Name **two** communes where assimilation in Senegal was practiced**.** **(2 marks)**

16. What was the immediate cause of World war 1 1914 -1918 **(1 mark)**

17. Name **two** countries that formed the *Triple Entete* before World War 1**.** **(2 marks)**

SECTION B (45 MARKS)

18. a) Why is Africa referred to as the "*Cradle of Mankind*"? **(3 marks)**

b) Describe the culture of man during the New stone age. **(12 marks)**

19. a) Identify **three** roles of *Tuaregs* during the Trans-Saharan trade. **(3 marks)**

b) Explain the reasons for collapse of Trans- Atlantic trade. **(12 marks)**

20. a) List **three** reasons leading to scientific revolution. **(3 marks)**

b) Explain the reasons for slow industrialization in third world countries. **(12 marks**)

21. a) Mention **five** economic activities of the Asante. **(5 marks)**

b) Discuss the political organization of the Buganda. **(10 marks)**

SECTION C (30 MARKS)

22. a) List **five** reforms introduced by the Germans after the *Maji Maji* rebellion 1905 **-1907.(5 marks)**

b) Explain why *Samouri Toure* was able to resist the French for long. **(10 marks)**

23. a) List five ways used by nationalists in South Africa in fighting Apartheid. **(5 marks)**

b) Explain the factors for the rise of African nationalism after 1945. **(10 marks)**

24. a) Mention three social effects of **World war 1 1914 -1918.** **(3 marks)**

b) Explain the long term causes of **World war 1 1914 -1918.** **(12 marks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

ENGLISH

PAPER 1

TIME: 2 HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS TO CANDIDATES:

a) Write your name, class and index number in the spaces provided.

*b) Answer **all** the questions in this paper.*

c) All your answers must be written in the spaces provided.

FOR EXAMINER'S USE ONLY:

SN	Question	Maximum Score	Candidate's Score
1	Functional Writing	20	
2	Cloze Test	10	
3	Oral Skills	30	
	Total Score	**60**	

1. FUNCTIONALWRITING

Students in your school have raised concerns about poor hygiene in the school. In a bid to address these concerns, the principal appoints a four-member committee to investigate the health situation and give recommendations. You are the secretary of the committee, write down the report you will present to your principal. **(20mks)**

2. CLOZE TEST (10MKS)

Fill in the blank spaces with the most appropriate words.

A new research title "Underage Drinking in Kenya, has…….1…….that nearly one third of form four students aged below 18 years take alcohol…….2…….. As our society ponders this sad ……..3……..,the urgent message to children who are taking alcohol…….4……..do not drink another sip. Advice to those children is to strongly say "no"……..5……..irresponsible behaviour, to alcoholism, there are many ……..6…….effects of alcohol. It is wrong and illegal for children to drink alcohol.

This report also states that 46 percent of the children received……7……..first pint from friends and……8……...Do you offer alcohol to a child? As a parent or guardian, do you nurture…….9……? How much time do you spend with them? Notably,.10…….. of guidance and supervision are stimuli to underage drinking.

3. ORALSKILLS (30MKS)

Read the poem below and answer the questions that follow

Make me a grave where'er you will,
In a lowly plain, or a lofty hill;
Make it among earth's humblest graves,
But not in a land where men are slaves.

I could not rest if around my grave
I heard the steps of a trembling slave;
His shadow above my silent tomb
Would make it a place of fearful gloom

I could not rest if I heard the tread
Of a coffle going to the shambles led,
And the mother's shriek of wild despair
Rise like a curse on the trembling air
(by Frances Ellen Watkins Harper)

QUESTIONS

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

……

……

……

ii) A part from rhyme, identify and illustrate two other ways the poet has used to achieve rhythm in this poem. **(4mks)**

……

……

……

……

iii) Mention two ways in which you would know that your audience is fully participating during the recitation of the poem above. **(2mks)**

……

……

……

iv) How would you say the last line of the poem? **(2mks)**

……

……

……

b) Indicate whether the following items have a falling or a rising intonation. **(4mks)**

i) Get out now! ……..

ii) The man was accused of theft……

iii) How did you find the English exam?.....

iv) Could he have left?.....

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

i) Corps

ii) Parliament

iii) Leopard

iv) Fracas

d) Provide a homophone for each of the following words. **(4mks)**

i) Bury …….

ii) Claws……..

iii) Guest ……..

iv) Male…….

e) The underlining indicates the stressed word in the sentences below. Briefly explain what each sentence mean. **(3mks)**

i) The lady in a red dress lost her purse

ii) The lady in a red dress lost her purses

iii) The lady in a red dress lost her purse.

f) Identify the odd word out according to the pronunciation of the underlined sound. **(2mks)**

Said Head Gate Led

Face Phrase Shepherd Phase

g) Below is a dialogue between Muthomi and James who are candidates. Read it and answer the questions that follow.

Muthomi: James, I'm worried about my performance in English. It's not encouraging.

James: Ah! I'm happy with mine in Biology. I got an A in the last exam.

Muthomi: I really don't know what to do about English, maybe…

James: I don't like History and P.E teacher. He thinks he is the only one who has a pick-up truck. My mum told me she would be buying one soon.

Muthomi: (Trying to bring him back to the topic) Tell me James, how do you revise English?

James: Oh! Is that Betty? She promised to bring me a movie. (Calling out) Betty! Betty! (She runs after her)

Identify the shortcomings in the dialogue above **(3mks)**

……

……

……

……

FORM 4 ENDTERM 1 EXAMS

SERIES 2

ENGLISH

PAPER 2

TIME: 2½ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

1. COMPREHENSION. (20MKS)

Read the passage below and answer the questions that follow.

Substance Abuse has emerged in recent decades as a major concern both on and off the job. Although reasons vary, substance abuse can be a way that some people try to manage or reduce distress.

But it is important to be clear on what is generally meant by a drinking problem. In all cases related to alcohol abuse, a common factor is the unfavorable effect alcohol has on the health or well-being of the drinker and his or her associates. Common signs and symptoms that frequently indicate a drinking problem include being constantly absent from work, causing on-the-job accidents and expressing grievances most of the time.

Alcoholic employees can sometimes go undetected for years. Coworkers cover up for those unable to perform their jobs because of drunkenness. Even managers may be adept at concealing their alcohol abuse problems. Their secretaries or loyal associates may cover up for them. Alcoholics can be clever at inventing "credible" excuses when detected: "I must have a drink or two when I'm entertaining customers, of course."

Drug abuse, or drug addiction, exists when the taking of drugs, whether prescribed or non-prescribed, legal or illegal, causes difficulties in any area of an individual's life. Years ago, the stereotype of the drug user was either of a glazed-eyed musician frantically beating his sticks on a tight skin or a person who dwelt in a slum? Mass publicity on drug abuse has long since caused that stereotype to fade from view.

Complicating the ongoing war on drugs are changes in public attitudes and drug-use patterns. It sometimes seems that no sooner is progress made in combating one illegal drug than a different kind of substance abuse comes into vogue. Ethyl alcohol was the social drug during prohibition (1920 – 1933), marijuana became the social drug of the 1960s and 1970s, and some observers believe that crack cocaine and possibly ecstasy – another so-called upper – became the social

drugs of the 1980s and 1990s. The drugs of choice and people's attitude toward them may change, but the problem of drug abuse appears to be continuing unabated.

Pinpointing the specific symptoms of alcohol and drug abuse problems is not a simple task. A supervisor's main responsibility, therefore should not necessarily be uncovering evidence of dependency on alcohol and drugs but instead being observant for declining job performance. Yet there are certain behavioural patterns that some excessive users of alcohol and drugs display. These patterns can sometimes be spotted through simple observation. Increasingly though, employers are taking more aggressive steps to ferret out substance abuse among their workforces. A growing number of companies, especially large ones with many employees and those in business with potential to effect public health or safety, are adopting drug-testing programmes.

The signs of alcohol dependency, unfortunately, do not always become manifest until the middle of the late stages of the problem. No wonder some managers have mistaken an employee's euphoric appearance for the "look of love". The earlier treatment begins, naturally, the easier it will be. A person could experience some isolated incidents of such drinking problems without necessarily being an alcoholic. However, alcohol abuse usually results in declining job performance.

Because there are many symptoms of drug abuse, no one person would exhibit all of them and a supervisor should guard against assuming that the presence of one or more symptoms is conclusive of alcohol or drug abuse.

QUESTIONS

1. What is the main reason given for substance abuse? **(2 mks)**

……

……

2. From paragraph two, state three ways in which alcohol abuse can unfavourably affect the workmates of a drunkard? **(3mks)**

……

……

……

3. According to the passage, what is drug abuse? **(2mks)**

……

……

……

4. What was the common misconception about who a drug user was? **(2mks)**

……

……

5. Rewrite the following sentences using "as soon as"

It sometimes seems that no sooner is progress made in combating one illegal drug than a different kind of substance abused comes into vogue. **(1mk)**

……

……

6. I must have a drink or two when I'm entertaining customers. (**Supply a question tag.) (2mks)**

……

……

7. Make notes on the reasons that make it difficult to effectively deal with substance abuse. **(4mks)**

……

……

……

……

8. Why do you think the author of the passage cautions supervisors against hastily concluding that one is a drug abuser? **(2mks)**

……

……

……

9. Explain the meaning of the following words as used in the passage. **(2mks)**

i) Credible

ii) Stereotype –

2. EXCERPT- A DOLL'S HOUSE

1. <u>Read the following extract and then answer the questions that follow</u>. (25mks)

Nora: I didn't find it **dull**

Helmer: (smiling) But there was precious little result, Nora.

Nora: Oh, you shouldn't **tease** me about that again. How could I help the cat's going in and tearing everything to pieces?

Helmer: Of course you couldn't, poor girl. You had the best of intentions to please us all, and your pretty little hands-

Nora: (clapping her hands) No, Torvald, I needn't any longer, need I? It's wonderfully lovely to hear hear you say so! (taking his arm) Now I will tell you how I have been we ought to arrange things, Torvald. As soon as Christmas is over- (A bell rings in the hall) There's the bell. (She tidies the room a little.) There's someone at the door. What a **nuisance**!

Helmer: If it is a **caller**, remember am not at home.

Maid: (in the doorway) A lady to see you ma'ma- a stranger.

Nora: Ask her to come in.

Maid: (to Helmer) The doctor came at the same time, Sir?

Helmer: Did he go straight into my room?

Maid: Yes, sir.

QUESTIONS

i. What does Nora refer to in her opening words in this extract? **(2mks)**

……

……

ii. What has happened that has made the couple happy? **(2mks)**

……

……

iii. Discuss two themes evident in this extract. **(4mks)**

……

……

……

……

iv. "There's someone at the door." Add a question tag**.** **(1mk)**

……

v. A lady has come to see Nora as reported by the maid. Who is this lady and how does her coming affect the Helmers from the rest of the play? Write you answer in note form.

(4mks)

……

……

……

……

vi. Discuss one aspect of style in this extract**.** **(2mks)**

……

……

vii. Briefly explain what happens after this extract**.** **(4mks)**

……

……

……

……

viii. Explain the meaning of the following expressions as used in the excerpt. **(4mks)**

a. Tease……

b. Dull……

c. Nuisance……

d. caller……

3. POETRY

Read the poem below and answer the questions that follow.

THE BREWING NIGHT

It was that memorable night when I heard it
Yes, I heard it all
That night sleep deserted me,
Mocked at me and tantalized me,
So I lay awake, sharp in all my senses.
It was long past midnight:
Time dragged on, the clock chime;
The dog wouldn't bark, nor the baby cry;
It was a moonless and windless night;
The whole universe seemed to stagnate
In dark, dreary, dead slumber.
What was amiss? I knew not.

The dead quietness and solitude
Seemed to be eternal, but
Waves of babbling and muttering

Began to trickle through the streets;
A distant roaring of heavy trucks filled the air,
Hurried footsteps eroded through the street.
What was a miss? I knew not.

I pulled my curtain
And there I saw it all
Heavy boots thick uniforms and solid helmets
Dimly discernible under the pale street lamp
The atmosphere stood stiff and solid with
Brawny- faced and clenched –teeth determination

The night had pulsed with passion high and wild;
The streets were stained with new portraits framed;
The wheel changed hands and new plans were filed.
The morning saw the country strangely dresses
And everyone attended the rally.
To hear the eloquence from a strange face,
And everyone quietly nodded and said, 'yes'

(By Yusuf O. Kassam, in <u>Poems from East Africa</u>.)

<u>QUESTIONS</u>

(a) Explain what the poem is about. **(3 mks)**

……

……

……

(b) In what ways was the night described in the poem peculiar**?** **(2 mks)**

……

……

(c) What was a miss? I knew not. (Rewrite as one sentence beginning, I did……) **(2 mks)**

……

(d) Paraphrase in one sentence what the persona saw when he or she pulled the curtain to see. **(1 mk)**

……

……

(e) What is the significance of stanza two? **(3 mks)**

……

……

……

(f) Identify and explain any one personification in the poem. **(2 mks)**

……

……

……

(g) Explain in your own words what happens in the last stanza. **(5 mks)**

……

……

……

(h) Explain the meaning of the title. **(2 mks)**

……

……

……

4. GRAMMAR

a) **Fill in the blank spaces with most appropriate complex preposition (3mks)**

i) He stood _____ of the class and confessed his guilt.

ii) Whether he is guilty or not, a suspect must be treated _____ the law.

iii) He has a lot to say _____ his new job.

b) **Rewrite the following sentences according to the instructions after each. (2mks)**

i. Of all the men around, he was the wisest. (Rewrite using "wiser")

……

……

ii. There is no excuse for rudeness. (Rewrite to end with 'excusable')

……

……

c) **Fill in the blank spaces below with the correct form of the verb in brackets (3mks)**

i. The team was _____ for coming late (qualify)

ii. They were _____ attacked by the gangsters (vicious)

iii. The _____ of the matter brought the president to their county. (grave)

d) **Rewrite the sentences below by replacing the underlined words with the correct phrasal verbs formed from the words in brackets. (4mks)**

a. I <u>met</u> my friend accidentally in town. (run)

_____

b. The city council askaris <u>demolished</u> kiosks in the city. (bring)

_____

c. Wesley <u>visited</u> his uncle in Nairobi during the holiday. (call)

---

d. Simon was <u>shocked</u> by the closure of Tuskys supermarket. (take)

_____

(e) **Arrange the adjectives in the following sentences in the correct order. (3marks)**

i. After the rains, there were many _____ flies. (greenish, big, ugly)

ii. John loves _____ bananas. (tasty, Kenyan, curved, yellow)

iii. Farida expected_____ table from her friend who lives in Congo. (mahogany, round, beautiful)

FORM 4 ENDTERM 1 EXAMS

SERIES 2

ENGLISH

PAPER 3

TIME: 2½ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

101/3

ENGLISH

PAPER 3

(CREATIVE COMPOSITION AND ESSAYS BASED ON SET TEXTS)

TIME: $2^{1}/_{2}$ HOURS

Instructions to candidates

- Answer **ALL** the questions.
- Each of your essay should not exceed **450** words

FOR EXAMINER'S USE ONLY.

QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
1.Imaginative Composition	20	
	20	
2.The Compulsory Set Text	20	
TOTAL	60	

QUESTIONS

1. Imaginative composition (Compulsory)

a) Write a composition to begin with the following: - "Looking up the sky, I knew everything would be fine**……"** **(20mks)**

b) Technological advancement has impacted negatively on the society, especially on the youth. Discuss**.** **(20mks)**

COMPULSORY TEXT

2. BLOSSOMS OF THE SAVANNAH

Blossoms of the Savannah by **H.R. Ole Kulet** **(20 marks)**

"Women empowerment is something that can be best achieved by women themselves." Write an essay that examines the role of women in their own liberation basing your arguments on the novel.

3. OPTIONAL TEXT

A SILENT SONGS AND OTHER SHORT STORIES *By Godwin Shiundu*

In the face of affliction, faith is essential for man's survival. Write an essay to validate this statement inreference to **Leo Tolstoy's God Sees the Truth, but Waits**. **(20 marks)**

OR

Drama

David Mulwa, **Inheritance.** **(20marks)**

"A leader's character traits can contribute to their downfall." Using examples from the lives of Lacuna Kasoo, write an essay to illustrate the truth of this statement.

FORM 4 ENDTERM 1 EXAMS

SERIES 2

KISWAHILI

PAPER 1

TIME: 1¾ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

102/1

KISWAHILI INSHA

Karatasi ya 1

SAA 1 ¾

MAAGIZO KWA MTAHINIWA:

1) *Andika jina lako, nambari ya usajili na tarehe katika karatasi ya majibu*
2) *Karatasi hii ina maswali manne.*
3) *Jibu maswali mawili pekee. Kila swali lina alama ishirini.*
4) *Swali la kwanza ni la lazima.*
5) *Chagua swali lingine lolote moja kutoka yale matatu yaliyosalia.*
6) *Majibu yote yaandikwe katika karatasi ya majibu uliyopewa.*

SEHEMU HII IMEHIFADHIWA KWA MATUMIZI YAM TAHINI PEKEE.

SWALI	1	2	3	4
UPEO	20	20	20	20
ALAMA				

UPEO	
ALAMA ZA MTAHINIWA	

MASWALI

1. Wewe ni katibu wa chama cha Kiswahili shuleni mwenu. Chama chenu kimefanya mkutano kuhusu changamoto zinazokabili Kiswahili shuleni mwenu. Andaa kumbukumbu za mkutano huo**.** **[Alama 20]**

2. Jadili mikakati ambayo sharti itiliwe maanani ili kukabiliana na changamoto za utumizi na wenezi wa dawa za kulevya nchini Kenya**.** **[Alama 20]**

3. Simulia kisa ili kuthibitisha maana ya methali ifuatayo: **Mui huwa mwema.** **[Alama 20]**

4. Maliza insha yako kwa**:** **[Alama 20]**

…..na hapo ndipo nilipong'amua kuwa, mla nawe hafi nawe ila mzaliwa nawe.

FORM 4 ENDTERM 1 EXAMS

SERIES 2

KISWAHILI

KARATASI YA 2

MUDA: SAA 2 ½

NAME……. ADM NO; …….

CLASS…… DATE…….

1. UFAHAMU (ALAMA 15)

Soma taarifa ifuatayo kisha ujibu maswali

Ni bayana kuwa mtoto wa kike humu nchini anabaguliwa tangu akiwa malaika. Tamaduni za jamii nyingi nchini humbagua mtoto wa kike katika masuala ya elimu na umiliki wa mali. Ndoa za mapema pamoja na ajira ya watoto wa kike pia huchangia katika kumdhalalisha na kumdunisha mtoto wa msichana. Kadhalika, tamaduni zilizopitwa na wakati hasa tohara kwa wasichana huiathiri mno jinsia ya kike.

Kutokana na dharura, wanasiasa, wasomi, viongozi wa kidini miongoni mwa wengine, wameanza kutambua haja ya kumpa mtoto wa kike fursa sawa na mwenzake wa kiume. Wengi wa walio katika mstari wa mbele kupigania haki hizi ni wasomi wanawake. Msomi mmoja ambaye ametekeleza wajibu mkuu ni Daktari Momanyi wa chuo kikuu cha Kenyatta. Daktari huyu anaamini kwamba kumwelimisha msichana ni kumpa uwezo zaidi wa kukabiliana na matatizo ya kila siku yanayomkumba.

Daktari huyu hutumia mbinu gani kufanikisha malengo yake? “Mimi hutumia fasihi ya Kiswahili katika kumtetea mtoto wa kike,” anasema. Anaamini kwamba fasihi ni chombo muhimu na chenye uwezo mkubwa wa kuleta mabadiliko katika jamii. Mojawapo ya hadithi zake fupi “Ngome ya nafsi” kwenye mkusanyiko wa hadithi fupi, “Mayai waziri wa maradhi na hadithi nyingine” uliohaririwa na K.W Wamitila, Daktari anaangazia madhila yanayomkumba mtoto wa kike hasa ndoa za lazima.

“Wakati wa kumfungia mtoto wa kike katika duara dogo la jikoni umepitwa na wakati” anakariri Daktari Momanyi. Juhudi za msomi huyu katika kumtetea mtoto wa kike zimetambuliwa katika ulingo wa kimataifa. Mbali na kushikilia nyadhifa mbalimbali katika mashirika ya mataifa

yanayotetea haki na nafasi ya mwanamke katika jamii, Daktari alifadhiliwa na shirika la Fullbright mwaka 2006. Ufadhili huo ulimwezesha kufanya utafiti kuhusu ufundishaji wa Kiswahili katika chuo kikuu cha Pennsylvania, Philadelphia nchini Marekani.

Aliendelea kufanya utafiti kuhusu jinsia alipofadhiliwa na shirika la OSSREA kumwezesha kufanya utafiti kuhusu maswala ya jinsia. Katika utafiti huo alichunguza imani za kijamii na kitamaduni zinazochangia tofauti za kiidadi masomoni baina ya mtoto wa kike na wa kiume miongoni mwa jamii ya waislamu mkoani pwani. Daktari anatoa wito kwa serikali kubuni sera mahususi inayotambua usawa baina ya mtoto wa kike na wa kiume. Msomi huyu amechapisha vitabu kadha wa kadha na makala mengi ya kitaalamu kuhusu uana katika majarida barani Afrika, Ulaya, Marekani na Asia. Alisomea katika chuo kikuu cha Nairobi ambapo alijipatia shahada ya ualimu kisha alituzwa shahada ya uzamili na huko chuo kikuu cha Kenyatta akapata shahada ya uzamifu.

MASWALI

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

……

2. Mbali na elimu, umiliki wa mali, ndoa za lazima na mapema, ni vipi vingine anavyodhulumiwa mtoto wa kike? **(alama 2)**

……

……

3. Taja washikadau wengine wanaopigania haki za watoto wa kike. **(alama 2)**

……

……

……

4. Ni vipi fasihi ya Kiswahili ilivyopata nafasi katika utetezi huu? **(alama 2)**

……

……

5. Je, ni silaha ipi itamwezesha mtoto wa kike kujihami dhidi ya ubaguzi huu. **(alama 1)**

……

……

6. Taja wafadhili wawili wa Daktari Momanyi. **(alama 2)**

……

……

7. Idadi kubwa ya wavulana ikilinganishwa na wasichana shuleni inasababishwa na nini?**(alama 2)**

……

……

8. Eleza msamiati ufuatao kama ulivyotumika katika makala haya. **(alama 3)**

i) Utafiti

iii) Uana

iii) Sera

UFUPISHO (ALAMA 15)

Soma makala haya kisha ujibu maswali yanayofuatia

Mwelekeo wa utoaji mafunzo kwa mwalimu wa shule za sekondari nchini unazua mjadala. Hatua katika Nyanja hizi zinaonekana kuchukuliwa bila kutilia maanani utabiri wa idadi katika siku za usoni.

Hapo miaka ya tisini, walimu wengi waliohitimu katika shahada za digrii na diploma hawakuegemea upande wa hesabati, sayansi na lugha (kingereza na Kiswahili). Hivyo kukazuka kampeni za chini kwa chini katika vyuo vya nchi ambapo walimu – wanafunzi walihimizwa kusomea Hesabati, Sayansi na lugha. Hili lilionekana kuwa suluhu kwa wakati ule kwani punde idadi ya walimu hawa iliyokuwa imepungua ilionekana kuongezeka. Ni wakati huu ambapo walimu wa masomo haya walipewa marupurupu maalum maarufu kwa jina "special allowance" kwenye mishahara yao.

Idara za Dini, Historia na masomo mengine husika zilipuuzwa na idadi ya wanafunzi waliojisajili hapa kupunguka kabisa. Wanafunzi katika idara hizi walionekana kutokuwa na matumaini ya kuajiriwa kwani wenzao waliokwisha hitimu walikuwa wengi kupindukia.

Hali hii ilidumishwa na miaka ya karibuni imeshuhudia tatizo lingine tofauti; uhaba wa walimu wa Dini na Historia na ongezeko kubwa la walimu wa Hesabati, Sayansi na lugha. Dalili zake ni ukweli kwamba shule nyingi hazina walimu wa kutosha katika Dini na Historia na zinapotangaza nafasi hizi kuwa wazi, hakuna wanaojitokeza kuzichukua. Miongoni mwa walimu waliohitimu na wanaosaka nafasi za kazi, asilimia kubwa zaidi ni wa Hesabati, Sayansi na lugha. Swali ni 'je, kwa nini mambo yabadilike haraka jinsi hii?'

Lawama zote zafaa kurudikiwa wizara ya Elimu hasa idara zinazohusika na tarakimu na utoaji wa mafunzo kwa elimu hasa idara zinazohusika na tarakimu na utoaji wa mafunzo kwa walimu. Kwa kufuata njia za kitaalamu, inawezekana kukadiria idadi ya walimu watakaohitajika katika masomo mbalimbali kwa kipindi cha miaka hamsini au hata zaidi. Maafisa katika idara hizi wafaa kuwajibika na kutoa mwelekeo dhabiti ili kuiepushia nchi matatizo kama haya.

a) Fupisha aya ya kwanza na ya pili kwa maneno 50. mtiriko 1) **(alama 6,**

Nakala chafu

……

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……

Nakala safi

……

……

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……

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……

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……

b) Ni hoja zipi muhimu zinazojitokeza katika aya tatu hadi ya mwisho. mtiririko 1) **(alama 7,**

Nakala chafu

……

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……

Nakala safi

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MATUMIZI YA LUGHA (ALAMA 40)

a) Taja mifano miwili ya sauti za mdomo – meno. **(alama 3)**

i)

ii)

b) Taja irabu mbili za juu. **(alama 2)**

i)

ii)

c) Tambua aina za nomino katika sentensi hizi. **(alama 2)**

i) Abdi alijiunga na halaiki ya watu.

……

ii) Kupigwa kwake kulisababishwa na ujeuri wake.

……

d) Andika ukubwa na wingi wa sentensi hii. **(alama 2)**

Sahani hii imevunjwa na mtoto huyu.

……

……

e) Andika kinyume cha sentensi hii. **(alama 2)**

Mama hushona nguo ikapendeza.

……

f) Tunga sentensi moja kuonyesha matumizi mawili ya neno. **(alama 2)**

Mchanga

……

g) Tenganisha silabi katika neno. **(alama 2)**

Ghadhabishwa

……

h) Andika sentensi hizi upya ukitumia visawe vya maneno yaliyopigwa msitari. **(alama 2)**

i) Ole Matope <u>alishtuka</u> alipomwona <u>nyati</u> kichakani.

ii) Wanafunzi wako karibu kurudi shuleni baada ya gonjwa la korona kudhibitishwa.

i) Je, ni nini maana ya mofimu ? **(alama 1)**

……

……

j) Onyesha na uainishe mofimu katika neno hili. **(alama 3)**

Tuliwapikisha

……

……

k) Changanua sentensi hii kwa njia ya matawi. **(alama 3)**

Mkoba mkubwa mweusi ulipotea jana.

l) Tambua shamrisho katika sentensi ifuatayo. **(alama 3)**

Mhunzi alimjengea mkulima jembe kwa chuma.

m) Anika sentensi ifuatayo katika usemi halisi. **(alama 2)**

Mama aliambia Juma asitoke nje ya nyumba baada ya yeye kwenda sokoni.

n) Andika sentensi hizi katika minyambuliko iliyo mabanoni. **(alama 2)**

i) Mama alimfanya mtoto ale. (kutendesha)

ii) Maria alifagia chumba vizuri. (kitendewa)

o) Kanusha sentensi ifuatayo. **(alama 2)**

Angeenda sokoni angenunua nyanya nyingi.

p) Andika wingi wa sentensi hizi. **(alama 2)**

i) Ubawa wa ndege huyo ulivunjika akitua.

ii) Sonara yule alitengeneza pambo zuri.

q) Namino hizi ni za ngeli gani ? **(alama 2)**

i) Asali

ii) Mkeka

r) Ina maana gani kusema kuwa mtu alikubali jambo ‘shingo upande’. **(alama 1)**

s) Kamilisha methali hizi. **(alama 2)**

i) Mwenye shibe

ii) Usikate kanzu

t) Sahihisha sentensi hii. **(alama 1)**

Chakula tulizokula zilitushibisha.

4. ISIMU JAMII (ALAMA 10)

Halooo! Wapi hapo …….
Una …….Unasikia ……. (Anasikiliza kwa makini)
Aaaaa! Kamishna Herderson.
Ok! Ok! Ha! Hatoboi.
Ningekwambia but….. Atoe chai.

a) i) Tambua rejesta hii ya lugha. **(alama 1)**

……

……

……

ii) Andika sifa zozote tano za sajili hii. **(alama 5)**

……

……

……

……

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……

……

iii) Ni nani dhima ya lugha ? **(alama 4)**

……

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……

FORM 4 ENDTERM 1 EXAMS

SERIES 2

KISWAHILI

PAPER 3

TIME: 2½ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

Maagizo

- *Andika jina lako na nambari yako ya mtihani katika nafasi ulizoachiwa hapo juu.*
- *Jibu maswali **manne** pekee.*
- *Swali la **kwanza** ni la **lazima**.*
- *Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki; yaani: Riwaya, Ushairi na Tamthilia.*
- *Usijibu maswali **mawili** kutoka **sehemu moja**.*
- *Majibu yote **lazima** yaandikwe kwa lugha ya Kiswahili.*

Kwa Matumizi ya Mtahini Pekee

Sehemu	A	B		C		D		JUMLA
Swali	1	2	3	4	5	6	7	
Alama								

SEHEMU YA A: FASIHI SIMULIZI

Lazima.

1. Hapo zamani za kale paliishi sungura na ndovu. Wanyama hawa waliishi baharini.Maulana alikuwa amewatunukia mapenzi si haba.Makazi yao yalikuwa yamepambwa yakapambika.Walitegemea matunda mbalimbali yaliyokuwa baharini kama mapera, matomoko matikitimaji na kadhalika.

Siku moja usiku wa manane, maji yakaanza kupwa.Ndovu aliathirika zaidi. Alijaribu kuinama majini lakini hakuweza . Alimwita sungura amsaidie lakini sungura alikuwa ametoweka. Ndovu aliamua kwenda kumtafuta sungura. Alimtafuta hadi msituni lakini hakumpata. Alihofia kurudi baharini na hadi wa leo yumo msituni.

MASWALI

a)Tambua utanzu na kijipera chake**.** **(al.2)**

b)Taja fomyula zingine **mbili** za kutanguliza kifungu hiki. **(al.2)**

c)Eleza umuhimu wa kijipera hiki**.** **(al.5)**

d)Eleza sifa za kifungu hiki**.** **(al.5)**

e)Eleza umuhimu wa fomyula:

(i)**Kutanguliza** **(al.3)**

(ii)Kuhitimisha **(al.3)**

SEHEMU B: TAMTHILIA

BEMBEA YA MAISHA

2. La! Kila mbegu ipandwayo haina budi kuzaa na izaapo mazao yake huvunwa. Mtu hutakasa sahani akijua itamfaa tena. Kinacholelewa hakina budi kulea

a) Eleza mutadha wa dondoo **(alama4)**

b) Chambua mtindo katika dondoo **(alama4)**

c) Kauli iliypigiwa mstari inaonyesha majukumu ya watoto kwa wazazi. Thibitisha kwa kuonyesha wazi alivyowajibika anayerejelewa na msemaji katika mjadala. **(alama4)**

d) Tathmini umuhimu wa msemaji katika dondoo hili katika kujenga tamthilia ya **Bembea ya Maisha** **(alama4)**

e) Eleza sifa tano za msemewa katika dondoo hii **(alama4)**

Au

3. Huku ukirejelea tamthilia ya ***Bembea ya Maisha***, eleza tofauti ya hali maendeleo kati ya hospitali za mjini na hospitali za kijijini **(alama20)**

SEHEMU YA C: RIWAYA

Assumpta K. Matei: Chozi la Heri

4. Kipi kinachowavuta raia kuhamia ughaibuni? Angeuliza nafsi yake pale ambapo mzigo wa simanzi na ukiwa ulipokilemea kifua chake. Je, ni huo mshahara mnono unaowageuza kuwa watumwa wa kufanya kazi kidindia ati kwa kudai kuwa nchi za ughaibuni ni twenty-four-hour economies?

a. Eleza muktadha wa dondoo hili**.** **(Alama 4)**

b. Huku ukitolea mifano maridhawa, fafanua mbinu nne za kimtindo zinazojitikeza katika dondoo hili
(Alama 4)

c. Eleza changamoto inayomkumba msemaji katika dondoo hili. **(Alama 2)**

d. Fafanua jinsi maudhui yanayojitokeza katika dondoo hili yameshughulikiwa kwingineko riwayani. (Alama 4)

e. Fafanua umuhimu wa mandhari katika kuijenga riwaya hii kwa kurejelea Msitu wa Mamba **(Alama 8)**

Au

5. Eleza jinsi **maudhui ya ufisadi** yalivyoshughulikiwa katika riwaya ya **Chozi la Heri.** **(al 20)**

SEHEMU D: USHAIRI

6. *Soma shairi lifuatalo kisha ujibu maswali.*

KAMA SODOMA!

Miji yetu kwa yakini, kidogo kama Sodoma!
Haihitaji makini, kwa mwenye macho mazima
Utaona walakini, mradi ukitizama
Wanazini hadharani, wana kwa watu wazima
Yafanana na Sodoma, miji yetu kwa yakini.

Miji yetu kwa yakini, kidogo kama Sodoma!
Wanazini hadharani, wana kwa watu wazima
Wanatafuna maini, vijana na kina mama
Hawana haya nyusoni, wameharamisha wema
Yafanana na Sodoma, miji yetu kwa yakini.

Miji yetu kwa yakini, kidogo kama Sodoma!
Hawana haya nyusoni, wameharamisha wema
Baba na binti ndani, wanacheza lelemama

Marijali wa mbioni, kujipagaza umama
Yafanana na Sodoma, miji yetu kwa yakini.

Miji yetu kwa yakini, kidogo kama Sodoma!
Marijali wa mbioni, kujipagaza umama
Wameikataa dini, toka tumboni mwa mama
Wadai Wataliani, watajirisha mapema
Yafanana na sodoma, mji yetu kwa yakini.

Miji yetu kwa yakini, kidogo kama Sodoma!
Wadai ufirauni, watajirisha mapema
Hivyo mambo ya kigeni, yametunukiwa dhima
Uwaonapo fuoni, nusu uchi wa mnyama
Yafanana na Sodoma, miji yetu kwa yakini.

Miji yetu kwa yakini, kidogo kama Sodoma!
Uwaonapo fuoni, nusu uchi wa mnyama
Watu hawana imani, umezidi uhasama
Na viongozi wa dini, kuabudu darahima
Yafanana na Sodoma, miji yetu kwa yakini.

Miji yetu kwa yakini, kidogo kama sodoma!
Na viongozi wa dini, kuabudu darahima
Wamekeuka yamini, kati yao na Rahima
Wamemuasi Manani, na kusahau kiyama
Yafanana na sodoma, miji yetu kwa yakini.

Miji yetu kwa yakini, kidogo kama Sodoma!
Wamemuasi manani, na kusahau kiyama
Ya Illahi tuauni, tuwe watu maamuma
Tukue katika dini, siku zetu za uzima
Yafanana na Sodoma, miji yetu kwa yakini.

Maswali

(a) Bainisha bahari ya shairi hili ukijikita katika ruwaza zifuatazo **(alama3)**

i) Mishororo

ii) Maneno

iii) Vina

(b) Eleza muundo wa shairi hili **(alama4)**

(c) Bainisha mbinu zifuatazo za kimtindo katika shairi hili **(alama3)**

i) Tashbihi

ii) Taswira

iii) Tasfida

(d) Eleza toni ya shairi hili **(alama1)**

(e) Bainisha nafsi nenewa katika shairi hili **(alama1)**

(f) Fafanua dhamira ya mtunzi wa shairi hili **(alama2)**

(g) Andika ubeti watatu kwa lugha tutumbi **(alama4)**

(h) Fafanua maana ya maneno haya kama yalivyotumiwa na mshairi **(alama2)**

i) Manani

ii) Marijali

Au

7. **Soma *shairi lifuatalo kisha ujibu maswali.***

Maendeleo ya umma
Sio vitu maghalani
Kama tele vimesaki
Lakini havishikiki
Ama havikamatiki
Bei juu

Maendeleo ya umma
Sio vitu gulioni
Kuviona madukani
Kuvishika mikononi
Na huku wavitamani
Kama tama ya fisi
Kuvipata ng'o

Maendeleo ya umma
Sio vitu shubakani
Dhiki ni kwa mafakiri
Nafuu kwa mafakiri
Ni wao tu washitiri
Huo ni uistimari
Lo! Warudia

Maendeleo ya umma
Ni vitu kumilikiwa
Na wanyonge kupatiwa
Kwa bei kuzingatiwa
Bila ya kudhulumiwa
Na hata kuhadaiwa
Hiyo ni haki.

Maendeleo ya umma
Dola kudhibiti vitu
Vijapo nchini mwetu
Na kuwauzia watu
Toka nguo na sapatu
Pasibakishiwe na kitu
Huo usawa.

Maendeleo ya umma
Watu kuwa na kauli
Katika zao shughuli
Vikaoni kujadili
Na mwisho kuyakubali
Maamuzi halali
Udikteta la.

Maendeleo ya umma
Watu kuwa waungwana
Vijakazi na watwana
Nchini kuwa hakuna
Wote kuheshimiana
Wazee hata vijana.

MASWALI

a) Eleza dhamira ya shairi hili. **(al.2)**
b) Baininsha tamathali mbili za usemi katika shairi hili. **(al.2)**
c) Eleza umuhimu wa usambamba katika shairi hili. **(al.2)**
d) Onyesha jinsi maendeleo ya umma yalivyo kinaya. **(al.2)**
e) Eleza mambo ambayo mshairi anachukulia kuwa maendelo halisi ya umma. **(al.4)**
f) Tambua matumizi ya mistari mishata kwa kutolea mifano**.** **(al.2)**
g) Bainisha nafsi neni katika shairi hili. **(al.1)**
h) Fafanua toni ya shairi hili. **(al.1)**
i) Andika ubeti wa nne kwa lugha nathari**.** **(al.4)**

Kila la Heri!

FORM 4 ENDTERM 1 EXAMS

SERIES 2

MATHEMATICS

PAPER 1

TIME: 2½ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS

a) *Write your name and index number in the spaces provided above.*
b) *Sign and write the date of the examination in the spaces provided above.*
c) *This paper consist of **TWO** sections: **section I** and **Section II.***
d) *Answer **ALL t**he questions in **Section I** and only **five** questions from **section II.***
e) ***Show all the steps in your calculations, giving your answers at each stage in the stage in the spaces below each question.***
f) *Marks may be given for correct working even if the answer is wrong.*
g) ***Non-programmable** silent electronic calculators **and** KNEC mathematical tables may be used, except where stated otherwise.*

Section I

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

Section II

17	18	19	20	21	22	23	24	Total

Grand Total

SECTION I (50 Marks)

Answer all the questions in this section.

1. Without using mathematical tables or calculator, evaluate **(3mks)**

$$\sqrt{\frac{2.56x0.00625}{0.25x0.08x0.05}}$$

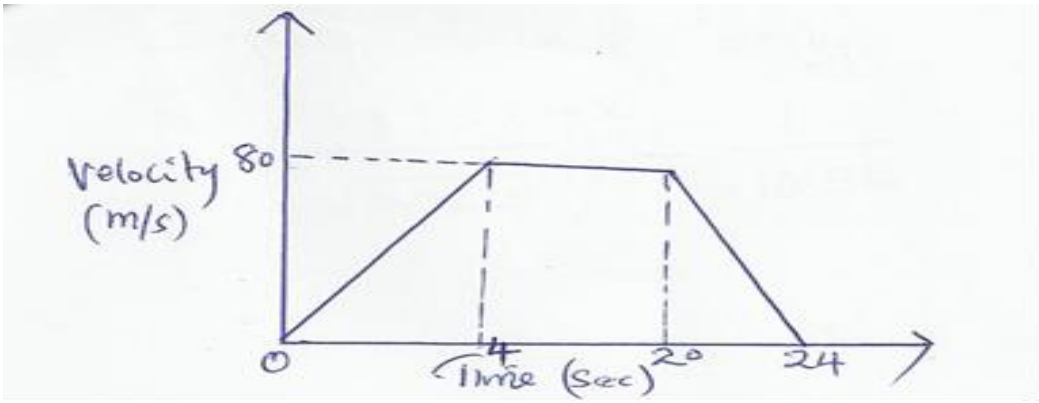
2. The length of a hollow cylindrical pipe is 6meters. Its external diameter is 11cm and has a thickness of 1cm. calculate the volume in cm^3 of the material used to make the pipe.

Take (π as 3.142) **(3mks)**

3. Simplify **completely** **(3mks)**

$$\frac{3y^2-1}{y^2-1}-\frac{2y+1}{y+1}$$

4. The figure below is a velocity time graph for a car.



a) Find the total distance travelled by the car**.** **(2 marks)**

b) Calculate the deceleration of the car. **(2 marks)**

5. The exterior angle of a regular polygon is equal to one third of the interior angle. Calculate the number of sides of the polygon and give its name**.** **(4mks)**

6. Find the equation of the perpendicular bisector of line AB where A(3, 9) and B(7,5) giving your answer in the form ax + by + c = **0** **(3 mks)**

7. Given a: b = 6:7 and b: c = 14:17 find a: b: c. **(2 mks)**

8. Ruth is 12 years old. In three years' time she will be $\frac{1}{3}$ of his father's present age. How old was her father 12 years ago. **(3 mks)**

9. The table below shows heights of 50 students

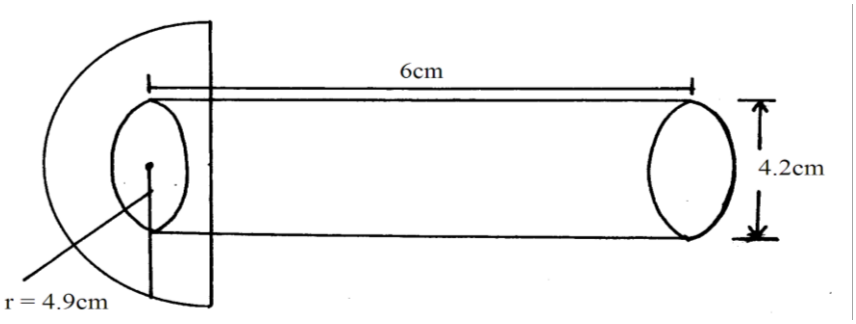
Height (cm)	Frequency
140-144	3
145-149	15
150-154	x
155-159	11
160-164	2

a) Sate the medal class. **(1mk)**

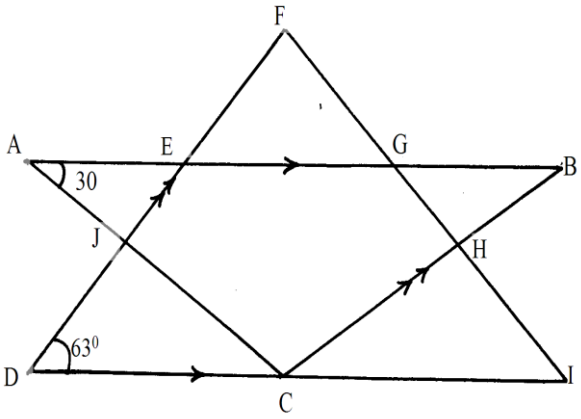
b) Calculate the median. **(3mks)**

10. A man walks directly from point A towards the foot of a tall building 240m away. After covering 180m he observed that the angle of the top of the building is 45º. Calculate the angle of elevation of the top of the building from A. **(3mks)**

11. A plug is made up of hemispherical cup of radius 4.9cm and a cylinder of diameter 4.2cm and height 6cm as shown in the diagram alongside. Calculate the volume of the plug. (Take $\pi \ as \ \frac{22}{7}$) **(3mks)**



12. In the figure below AB is parallel to DI and FD is parallel to CB. Angle EAJ = 30º and angle EDC = 63º. Find angle ACB. **(3mks)**



13. The position vectors of point $\vec{X}$ and $\vec{Y}$ are $\underset{\sim}{x} = 2i + j - 3k$ and $\underset{\sim}{y} = 3i + 2j - 2k$, respectively.

Find $|\vec{XY}|$ **(3mks)**

14. If takes 30 workers 6 days working 8 hours a day to harvest maize in a farm. How many days would 50 workers working 6 hours a day take to harvest the maize**?** **(3mks)**

15. Given that sin (x + 30) - Cos (3x) =0 find the value of x without using tables or a calculator. **(3mks)**

16. Without using mathematical tables or calculation, evaluate: **(3mks)**

$$27^{\frac{2}{3}} + \left(\frac{81}{16}\right)^{-\frac{1}{4}}$$

SECTION II 50 marks

Answer any 5 (five) questions in this section

17. In the year 2001 the price of a sofa set in a shop was Ksh. 12,000

a) Calculate the amount received from the sales of 240 sofa sets that year. **(2mks)**

b) In the year 2002 the price of each sofa set increased by 25% while the number of sofa sets sold decreased by 10%

i) Calculate the percentage increase in the amount received from the sales. **(3mks)**

ii) If at the end of the year 2002, the price of each sofa set changed in the ratio 16:15. Calculate the price of each sofa set in the year 2003. **(1mk)**

c) The number of sofa sets sold in the year 2003 was P% less than the number sold in the year 2002. Calculate the value of P given that the amount received from sales in the year 2002 and 2003 were equal. **(4mks)**

18. A straight line passes through points (8, -2) and (4, -4)

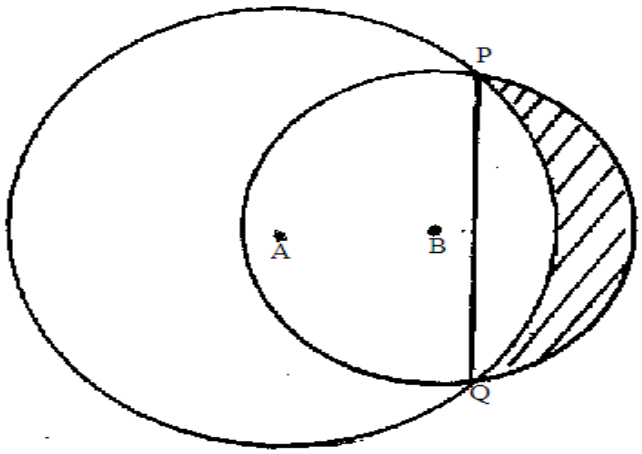
a) Write its equation in the form ax + by + c = 0 where a, b and c are integers. **(3 marks)**

b) If the line in (a) above cuts the x axis at point P, determine the coordinates of P. **(2 marks)**

c) Another line which is perpendicular to the line in (a) above passes through point P and cuts the Y axis at the point Q. Determine the co-ordinates of point Q. **(3 marks)**

d) Find the length of QP. **(2 marks)**

19. The figure below shows two intersecting circles with their centres A and B on one side of the chord PQ.



Given that the radius AP is 4cm, radius BP is 3cm and the chord PQ is 5.1cm. Line AB meets chord PQ at 90º.

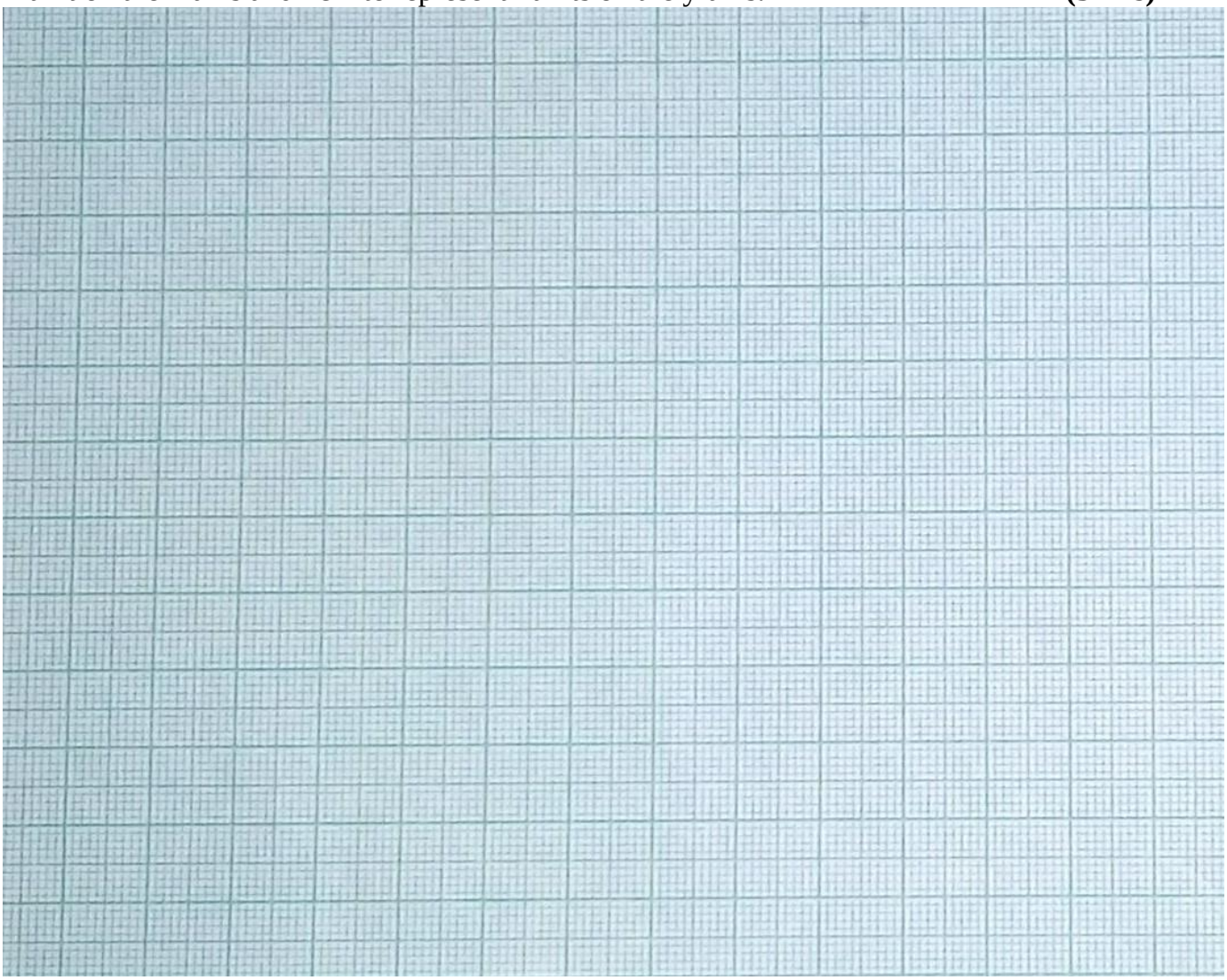
a) Calculate the length of **AB** **(3mks)**

b) The area of the shaded **region** **(7mks)**

20. **a)** Complete the table below for the function $y = x^3 + 6x^2 + 8x$ **(3mks)**

x	-5	-4	-3	-2	-1	0	1
X^3	-125	-64		-8	-1	0	1
$6x^2$		96	54		6	0	6
8x	-40		-24	-16		0	8
y			3	0	-3	0	15

b) Draw the graph of the function $y = x^3 + 6x^2 + 8x$ for $-5 \leq x \leq 1$use a scale of 2cm to represent 1 unit on the x-axis and 1cm to represent 2units on the y-axis**.** **(3mks)**



c) Use your graph to estimate the roots of the equations;

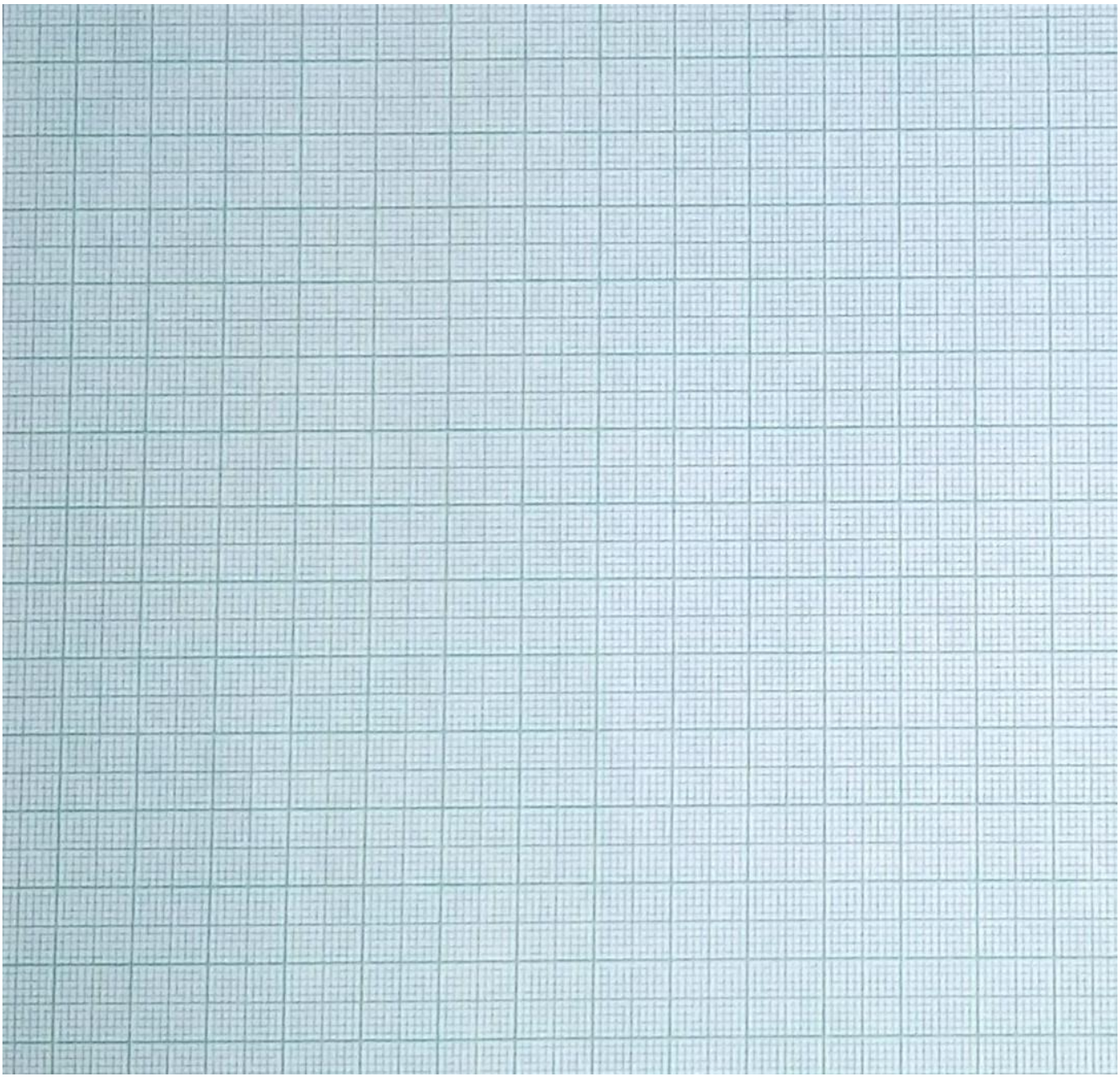
i) $x^3 + 6x^2 + 8x = \mathbf{0}$ **(1mk)**

ii) $x^3 + 5x^2 + 4x = -x^2 + 3x - \mathbf{1}$ **(3mks)**

21.a) A triangle with vertices A(-4, 2), B(-6, 6) and C(-6,2) is enlarged by a scale factor -1 and centre (-2, 6) to produce triangle A'B'C'. Draw triangle ABC and its image on the grid provided. State the coordinates of A'B'C'
(3mks)

b) Triangle A'B'C' in (a) above is reflected in line y = x to give triangle A"B"C" draw it on the same grid as in '**a'** **(3mks)**

c) Triangle A"B"C" in 'b' above is mapped onto A"'B"' and C"' whose coordinates are A"'(0, -2), B"'(4, -4) and C"'(0, -4) by a rotation. Find the centre and angle of **rotation (4mks)**

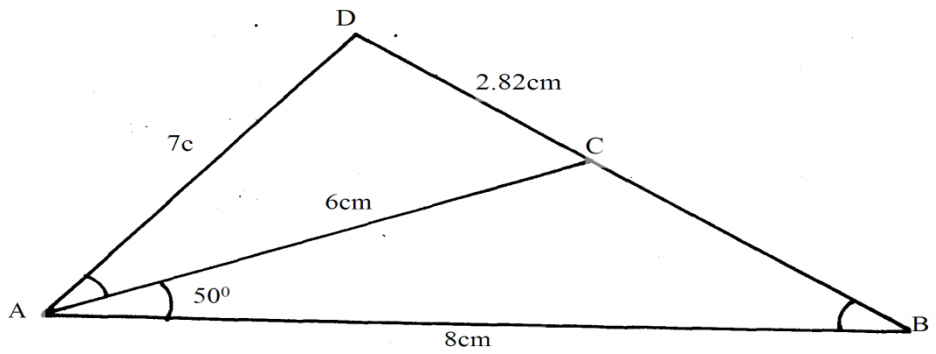


22. A bus left Makindu at 11.45 a.m and traveled towards Mombasa at an average speed of 80km/h. A Nissan Matatu left Makindu at 1.15 p.m on the same day and traveled along the same road at an average speed of 120km/hr. The distance between Makindu and Mombasa is 400km.

a) Determine the time of the day the Nissan overtook the bus**.** **(5 marks)**

b) **Both** vehicles continue towards Mombasa at their original speeds. Find how long the Matatu had to wait at Mombasa before the bus arrive**d.** **(5 marks)**

23. In the figure below (not drawn to scale) AB = 8cm, AC = 6cm, AD = 7cm, CD = 2.82cm and angle CAB = 50º.



Calculate to 2 decimal places;

a) The length BC **(2mks)**

b) The size of angle ABC **(3mks)**

c) The size of angle **CAD** **(3mks)**

d)The area of triangle **ACD** **(2mks)**

24.A particle moves a long straight line such that its displacement S meters from a given point is $S = t^3 – 6t^2 + 9t + 3$ where t is the time in seconds. Find;

a) The displacement of the particle at t= 3

b) The velocity of the particle where t = 4.

c) The value of t when the particle is momentarily at rest.

d) The acceleration of the particle when t= 4.

FORM 4 ENDTERM 1 EXAMS

SERIES 2

MATHEMATICS

PAPER 2

TIME: 2½ HOURS

NAME……. ADM NO; …….

CLASS…… DATE…….

INSTRUCTIONS

a) *Write your name and index number in the spaces provided above.*
b) *Sign and write the date of the examination in the spaces provided above.*
c) *This paper consist of **TWO** sections: **section I** and **Section II.***
d) *Answer **ALL t**he questions in **Section I** and only **five** questions from **section II.***
e) ***Show all the steps in your calculations, giving your answers at each stage in the stage in the spaces below each question.***
f) *Marks may be given for correct working even if the answer is wrong.*
g) ***Non-programmable** silent electronic calculators **and** KNEC mathematical tables may be used, except where stated otherwise.*

Section I

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

Section II

17	18	19	20	21	22	23	24	Total

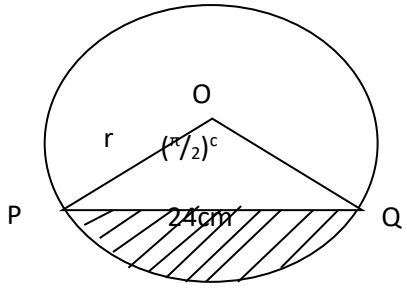
Grand Total

QUESTIONS

1. Factorize the expression $2x^2 + x - 15$. Hence solve the equation $2x^2 + x-15=0$. **(3mks)**

2. Two people each working for 8 hours a day can cultivate an acre of land in 4 days. How long would 6 people, each working 4 hours a day, take to cultivate 4 acres? **(3mks)**

3. In the figure below, O is the centre of the circle $<POQ = (\pi/_2)^c$ and PQ=24cm.



a) i. Express <POQ in degrees. **(1mk)**

ii. Find the radius r of the circle. **(1mk)**

b) Find the area of the shaded segment. **(2mks)**

4. The difference between the eight term and the fourth term of an AP is 24. The first term of this series exceeds the common difference by 4. Find the tenth term of the series. **(3mks)**

5. Simplify $\frac{\sqrt{3} - \sqrt{2}}{\sqrt{3} + \sqrt{2}}$, giving your answer in the form $a + b\sqrt{c}$, where a,b and c are real numbers. **(3mks)**

6. Find the first five terms of the expansion $(2-{}^{1}/_{x})^{8}$, hence, evaluate $(1.75)^{8}$ **(3mks)**

7. A quantity p is partly constant and partly varies as the square of Q. when Q=2,p=40 and when Q=3, P=65. Determine the value of p when Q=4. **(3mks)**

8. Given that $x = \begin{pmatrix} 1 & 0 \\ 3 & 2 \end{pmatrix}$ **and** $y = \begin{pmatrix} 2 & -1 \\ -1 & 0 \end{pmatrix}$

Find:

a) XY **(2mks)**

b) $(XY)^{-1}$ **(2mks)**

9. Construct the triangle XYZ in which XY=5cm, <YXZ = 60^o and <XYZ= 90^o. Measure YZ, hence use area= ½ absinϴ to, calculate the area of triangle XYZ. **(3mks)**

10. The position vectors of points P,Q and R are $\begin{pmatrix} 1 \\ -1 \\ 3 \end{pmatrix}$ $\begin{pmatrix} 3 \\ 3 \\ 1 \end{pmatrix}$ and $\begin{pmatrix} 6 \\ 9 \\ -2 \end{pmatrix}$ respectively.

a) Find (i) PQ **(1mk)**

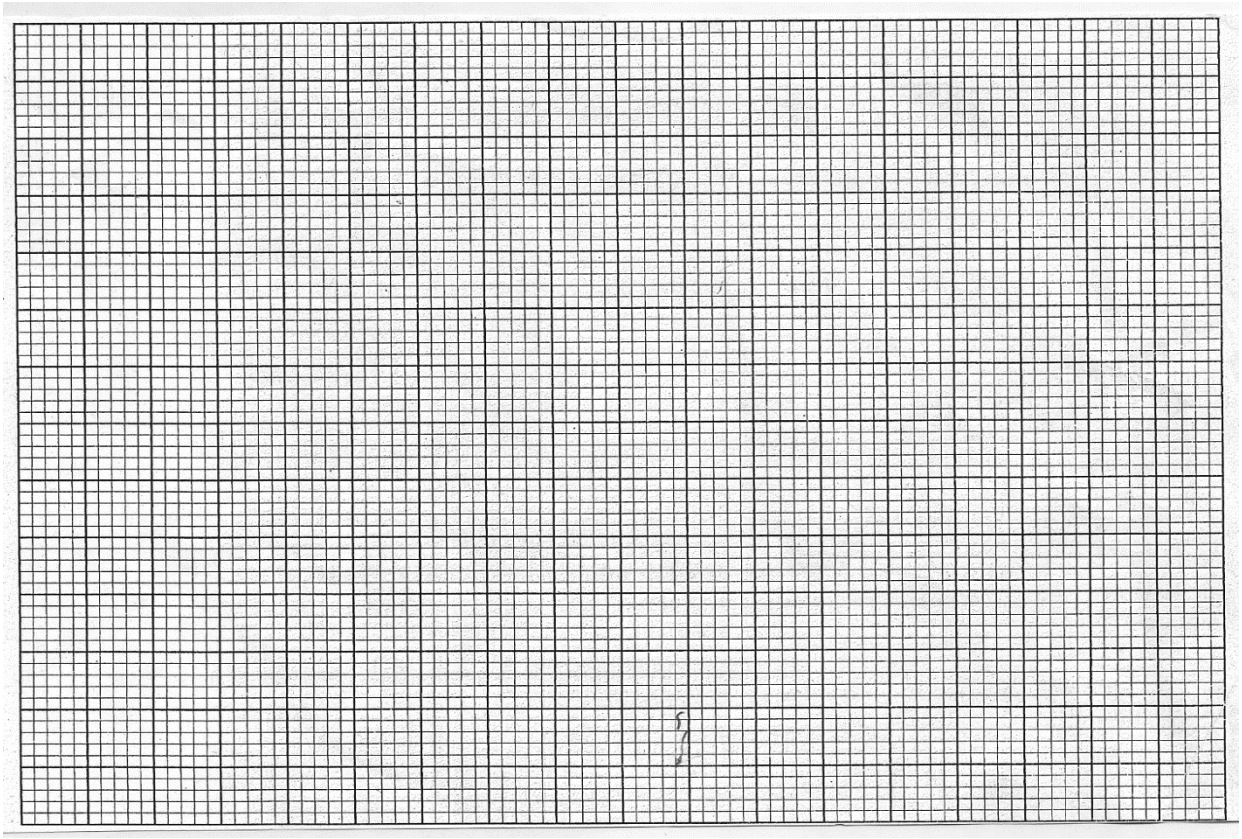
(ii) PR **(1mk)**

b) Hence or otherwise, show that points P,Q and R are collinear. **(2mks)**

11. In an experiment involving two variables E and C, the following results were obtained.

E	4	7	10	13	16	19
C	15.1	20.2	23.9	27.3	30.1	33.1

a) On the grid provided below plot the values of C against E hence use the plotted points to draw the line of best fit. **(2mks)**



b) Hence determine the equation connecting E and C. **(2mks)**

12. A and B are two points on the surface of the earth. Their position lie on the equator such that A (0^o,30^oW) and B(0^o,60^oE). calculate:

a) The distance in nautical miles between A and B. **(2mks)**

b) The time difference between A and B. **(2mks)**

13. Find the value of y in the equation: **(2mks)**

$$\text{Log}_7\left(\frac{1}{343}\right) = y$$

14. Mwanyumba invested some money in a housing finance company that offered compound interest of 2% per annum. After 3 years, her money had accumulated to sh 106120.80. How much money had she invested? **(3mks)**

15. Find the gradient of $y=x^2-3x$ at the point (2,-2) **(2mks)**

16. An object starts from rest and its velocity is measured every second for 6 seconds as shown in the table below.

Time (t)	0	1	2	3	4	5	6
Velocity v (ms^{-1})	0	12	24	35	41	45	47

Use the trapezium rule to calculate the area between t= 1 and t=6 seconds. **(2mks)**

SECTION II (50 MARKS)

17. The table below shows the income tax rates for a certain year.

Monthly taxable income in Ksh.	Tax rate (%) in each shilling
1-11180	10
11181-21714	15
21715-32248	20
32249 – 42782	25
Over 42782	30

a) During the year, Obonyo's monthly income was as follows;

Basic salary Ksh 40,000
House allowance Ksh 11,090
Commuter allowance Ksh 7,000

Calculate;

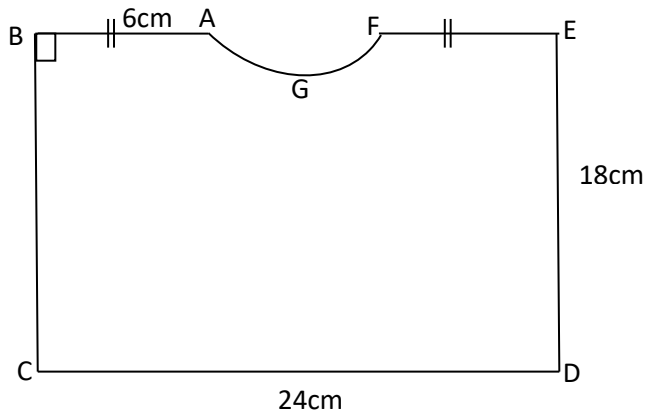
i. Obonyo's total monthy taxable income. **(2mks)**

ii. The total income tax charged on Obonyo's monthly income. **(6mks)**

b) Obonyo's net monthly tax was Ksh 10,750.80. Determine the monthly tax relief allowed.

(2mks)

18. The figure below represents a cross-section of a concrete prism whose length is 3m. Given that AB=FE and AGF is a semi circle.



a) Calculate the total surface area of the prism. **(5mks)**

b) Determine the volume of the concrete used to make the prism. **(3mks)**

c) Given that $1cm^3$ of concrete weighs 6.8 grams, find the mass of the prism in **kg.** **(2mks)**

19. Wamuyu purchased (2x-1) identical pens for ksh. 180. Nyambura purchased (3x+1) identical pencils for ksh. 200.

a) Write an expression for the;

i. Price of one pen. **(1mk)**

ii. Price of one pencil **(1mk)**

b) A pen costs Ksh 4 more than a pencil. Form an equation to represent the information above and hence solve for x. **(4mks)**

c) Later the price of a pen went up by 25% while that of a pencil remained unchanged. A school bought 30 pencils and 16 pens. Determine the total amount of money spent by the school. **(4mks)**

20. The first term of an arithmetic sequence is 2. The first term of a geometric sequence is also 2. The common ratio of geometric sequence equals the common differences of the arithmetic sequence. By taking d as the common difference and r as the common ratio.

a) Write an expression connecting d and r. **(1mk)**

b) The third term of the geometric sequence exceeds the square of the first term of the arithmetic sequence by 124. Find:

i. The common ratio **(3mks)**

ii. The common difference **(1mk)**

c) Determine;

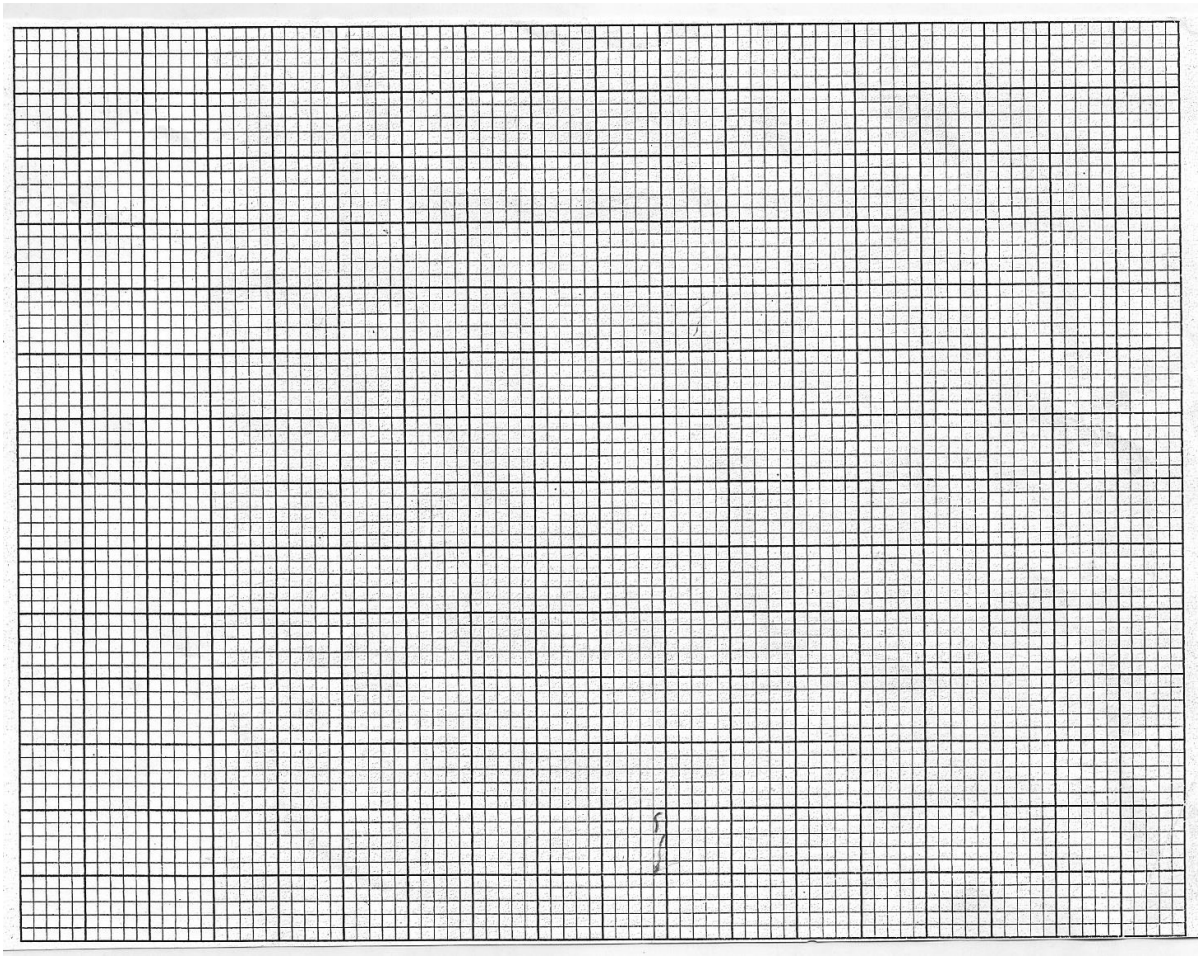
i. The first ten terms of the arithmetic sequence. **(2mks)**

ii. Hence or otherwise, find the sum of the first 10 terms of the arithmetic sequence. **(3mks)**

21. a) Given that $y=x^3+2x^2-5x-8$, complete the table below; **(2mks)**

X	-4	-3	-2	-1	0	1	2	3
X^3	-64	-27	-8	-1	0	1	8	27
$2x^2$	32	18	8	2	0	2	8	18
-5x	20	15	10	5	0	-5	-10	-15
-8	-8	-8	-8	-8	-8	-8	-8	-8
Y								

b) On the grid provided below, using a suitable scale draw the graph of $y=x^3+2x^2-5x-8$ for the values of x in the range $-4\leq x\leq 3$. **(3mks)**



c) Use your graph to solve the equations. **(2mks)**

$x^3+2x^2-5x-8=0$

d) By drawing a straight line, use the graph to solve the equation $-x^3-2x^2+3x+3=0$ **(3mks)**

22. Alberto LUCCI is an Italian tourist who regularly visits Masai Mara while on tour in Kenya. The probability that Alberto goes to Maasai Mara is 1/4 , if he visits Maasai Mara, the probability that he sees a wilde beest is ½. If he does not go to Maasai Mara, the probability that he will see a wilde beest is $^1/_3$

a) Draw a tree diagram to show the above outcome. **(2mks)**

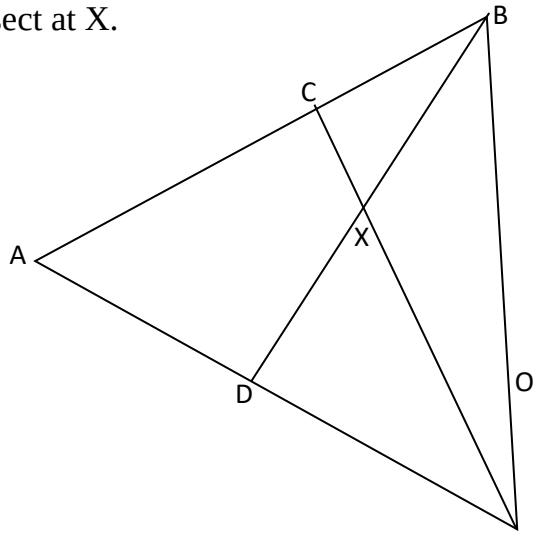
b) Find the probability that Alberto will:

i. Visit Maasai Mara and see a wilde beest. **(2mks)**

ii. Not visit Maasai Mara and see a wilde beest. **(2mks)**

iii. See a wilde beest. **(3mks)**

23. In the figure below C is a point of AB such that AC:CB=3:1 and D is the mid-point of OA. OC and BD intersect at X.



Given that OA = $\underline{a}$ and OB = $\underline{b}$

a) Write the vectors below in terms of $\underline{a}$ and $\underline{b}$.

i. AB **(1mk)**

ii. OC **(2mks)**

iii. BD **(1mk)**

b) Given that BX=hBD, express OX in terms of a,b and h. **(1mk)**

c) If OX=kOC, find the values of h and k. **(4mks)**

d) Hence write the ratio OX:XC **(1mk)**

24. A particle moves in a straight line in such a way that its distance s metres from a fixed point O after t seconds is given by $S=1t^3 - \frac{3t^2}{3} + \frac{2t}{2}$

a) Find the position of the particle when it is momentarily at rest. **(5mks)**

b) Calculate the acceleration of the particle at this time when it is momentarily at rest. **(2mks)**

c) Find the maximum or minimum velocity of the particle. **(3mks)**

FORM 4 ENDTERM 1 EXAMS

SERIES 2

COMPUTER STUDIES

PAPER 1

TIME: 2½ HOURS

NAME…… ADM NO; …….

CLASS…… DATE…….

451/1

COMPUTER STUDIES

PAPER 1

(THEORY) TIME: 2 ½ HRS

INSTRUCTIONS TO CANDIDATES

1. *This paper consists of TWO sections, A and B*
2. *Answer all questions in sections A.*
3. *Answer questions in English.*
4. *Answer question 16 and any other THREE questions from section B.*

FOR EXAMINERS USE ONLY

SECTION	QUESTION	SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	

SECTION A (40 MARKS)

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

1.(a) Headache, back and neck pain may result from use of computers. Explain **two** ways in which back and neck pain can be minimized. **(2mks)**

……

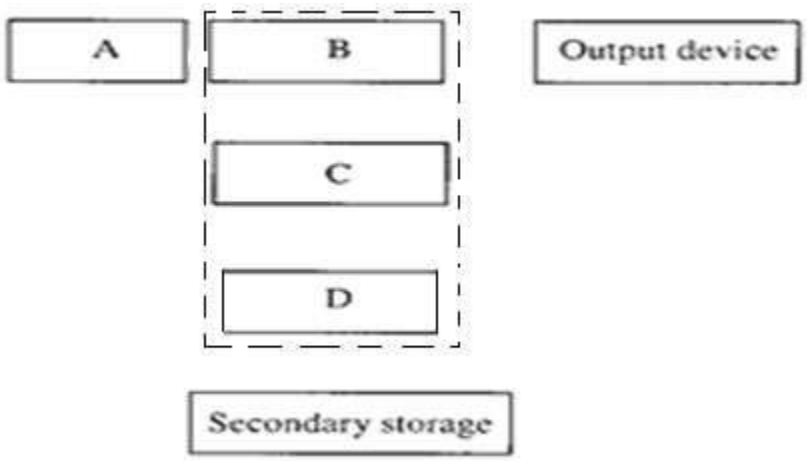
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(b) State how computer have been made more users friendly for persons that are:

(i) Blind…… …… **(½mk)**

(ii) Without hands… ……**(½mk)**



2. The diagram below represents the essential features of a computer system. Study the diagram andanswer the questions that follow:

(a)(i) Name and describe the following components (4mks)

A……

……

B……

……

C……

……

D……

……

(ii) On the diagram above, indicate the **direction** of data flow using arrows **(1mks)**

3. Gianchere High School intends to purchase new computer to be used by students in the e-learningroom for accessing digital learning resources and personal research. Advise the school on **two** computer hardware system specification features to consider as a measure of enhancing performanceof the computers. **(2mk)**

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4. State two items that an electronic mail should have for it to be sent **(2mk)**

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5. A worker is unable to travel to the office but may still be able to do the office work through telecommuting.

(a) Explain why the worker may use each of the following:

i. Email **(1mks)**

ii. Fax **(1mks)**

iii. Firewall **(1mks)**

iv. Digital camera **(1mks)**

6. Explain the term search engine as used in the Internet**.** **(2 mks)**

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7 (a) Explain **two** ways in which an operating system provides data security in a computer system **2mks)**

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8. File conversion, in system development, refers to modifying or changing the format of files when a new system is introduced e.g. from manual to computerized. State any **THREE** factors considered before the file conversion process. **(3mks)**

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9. A student saved a document in a diskette. Later on, the student found that the diskette could not open arid therefore the work got lost. Give **three** precautions the student should have taken to ensure the work was not lost**.** **(3mks)**

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……

A video rental shop uses a computerized system to record which videos have been loaned out. When a video is loaned out, the customers' data is recorded on computer file. Describe **TWO** computer processing files that will be needed to store permanent customer records and temporary records that keep on changing. **(4mks)**

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10. Define *overflow error* with respect to computation of data **(1mk)**

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11. What role is played by a reference file in data processing? **(1mk)**

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12. State **one** instance where batch processing could be applied **(1mk)**

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……

13. State **three** merits of distributed data processing modes. **(3mks)**

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14. State any **TWO** advantages of using computers in computer aided design (CAD) **(2mks)**

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SECTION B (60 MARKS)

Answer question 16 and any other THREE questions from this section in the spaces provided.

15. a) State two qualities of a good pseudocode. **(2 marks)**

……

……

……

b) With the aid of flowchart diagrams, describe each of the following programme control structures:

(i) Sequence

(ii) Selection

c) Draw a programme flowchart that would accept three numbers and find their sum. If the sumis greater than 200, it adds 30 to the sum, otherwise subtracts 20 from the sum. The programmeshould then display the results. **(5 marks)**

16. A) (i) What is a **Blog** in relation to internet services **(2marks)**

……

……

(ii) Explain the impact of the internet in the *information security* **(2marks)**

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(b) Kunta would like to send photos to Kinte via e-mail. Outline the steps Kunta would follow tosend the photos as file attachments **(3marks)**

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(c) Differentiate between the following in relation to data security and control **(4 marks)**

(i) *Password* and *biometric* authentication.

……

……

……

(ii) Privacy and Confidentiality.

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……

(d) Computer crimes include *Trespass*, *Hacking*, *Piracy* and *Sabotage*. Highlight each of them. **(4 marks)**

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17. (a) (i) State two reasons for data representation in a computer **(2 Marks)**

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(ii) Define the following words as used in data representation in a computer **(4 Marks)**

a) Nibble……

……

b) Word……

……

c) Byte……

……

d) Bit

……

……

(iii) (a) Convert 34_{10} to its binary equivalent. **(2 Marks)**

(b) Convert 1001011_2 into decimal number system equivalent **(2 marks)**

iv. (a) Briefly explain how data is represented in a computer **(3 marks)**

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(ii) With the aid of a well labelled diagram, distinguish between analogue and digital signals **(2 marks)**

19) **(i)** With the aid of a diagram, describe seven stages in system development life cycle (SDLC) intheir logical sequence **(7 marks)**

(ii) (a) What is a closed system**?** **(1mark)**

……

……

(b) Give **three** characteristics of a closed system **(3 marks)**

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(iii) State **four** roles played by an information system. **(4 marks)**

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20) (a) (i) State any **four** factors you would consider before installing an operating system. (4 marks)

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(**ii) (1)** State **two** reasons that causes computers to hang **(2 marks)**

……

……

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(2) State solutions to the causes you listed 19. (ii) (1) above **(2 marks)**

……

……

(c) In relation to operating system, differentiate between Kernel and Shell. **(2 marks)**

……

……

……

(d) State any **two** characteristics of a computer file. **(2 marks)**

……

……

(e) Mobile Operating System (OS) is software that allows Smart phones, Tablet PCs and other devicesto run applications and programs. List any THREE examples of Mobile Operating **Systems** **(3 marks)**

……

……

……

THE END

FOR THE FOLLOWING;

- ✓ ONLINE TUITION
- ✓ REVISION NOTES
- ✓ SCHEMES OF WORK
- ✓ SETBOOKS VIDEOS
- ✓ TERMLY EXAMS
- ✓ QUICK REVISION KITS
- ✓ KCSE TOPICALS
- ✓ KCSE PREMOCKS
- ✓ TOP SCHOOLS PREMOCKS
- ✓ JOINT PREMOCKS
- ✓ KCSE MOCKS
- ✓ TOP SCHOOLS MOCKS
- ✓ JOINT MOCKS
- ✓ KCSE POSTMOCKS
- ✓ TOP SCHOOLS PREDICTIONS
- ✓ KCSE PREDICTIONS
- ✓ KCSE REVEALED SETS

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