FORM 3 ENDTERM 3 EXAMS

ALL SUBJECTS

SERIES 1

SUBJECTS COMPILED:

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

A Collection of well-organized standard updated End of Term Three Test Examinations for our Current KCSE Pre-Candidates in all Schools in Kenya.

Contact Mr Isaboke for marking schemes.

CALL/TEXT/WHATSAPP *0746-222-000*

MWALIMU CONSULTANCY

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

BIOLOGY

TIME: 2 HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

Kenya Certificate of Secondary Education (KCSE)

231/1

BIOLOGY

PAPER 1

2 HOURS

INSTRUCTIONS TO CANDIDATES

1. *Write your name, admission number, school and stream in the spaces provided above.*
2. *Answer all the questions in the spaces provided.*

FOR EXAMINERS USE ONLY

QUESTIONS	MAXIMUM SCORES	CANDIDATE'S SCORE
1 – 36	80	

1. State **three** ways in which protein are important to plant. **(3marks)**

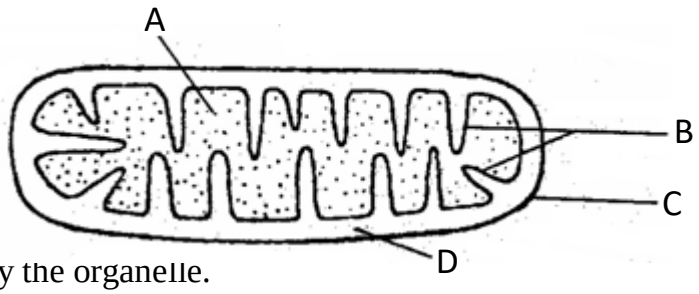
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2. The diagram **below** represents a cell organelle.



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

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(b) Name the part labeled **B**. **(1 mark)**

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(c) State the function of part labeled **A**. **(1 mark)**

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3. Define **binominal nomenclature**. **(1marks)**

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4. Name any **two** problems that animal species overcome by their dispersion. **(2marks)**

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5. Explain why tropical forests do not have undergrowth **(2marks)**

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6. How is blood pressure generated and maintained in a vein? **(2marks)**

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7. What is the function of catalase? **(2marks)**

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8. (a) State the important of cross-pollination to flowering plants. **(1mark)**

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(b) How is self-pollination a disadvantage to flowering plants? **(1mark)**

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9. What is the role of light energy in autotrophic nutrition in spermatophyte? **(2 marks)**

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10. How is fur important to desert animal, other than in the regulation of their body temperature? **(1mark)**

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11. What are the functions of named product of white blood cells? **(3 marks)**

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12. Explain three adaptations of cardiac muscles to their function. **(3 marks)**

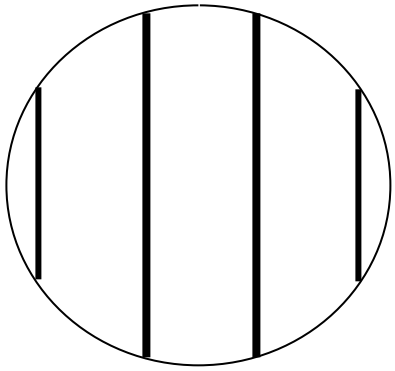
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13. A form one student trying to estimate the size of onion cells observed the following on the microscope's field of view.



(a) Define the term resolving power. **(1 mark)**

(b) If the student counted 20 cells across the field of view calculate the size of one cell in micrometers. **(2 marks)**

14. What is **tidal volume** in ventilation in man? **(1mark)**

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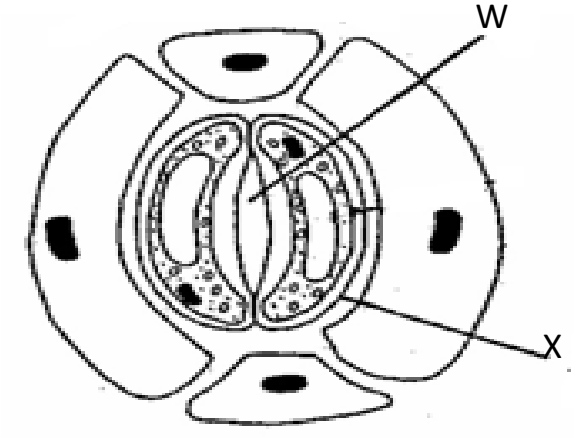
15. Define peristalsis and state its importance in the nutrition of mammals. **(2 marks)**

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16. The diagram **below** shows part of plant tissue.



(a) Name cell labeled **X** and part labeled **W**. **(2 marks)**

X

W

17. Why is the liver part of the digestive system? **(2 marks)**

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18. State the importance of cytoplasmic filaments in sieve tube elements. **(1 mark)**

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19. State any two characteristics of populations. **(2marks)**

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20. Describe any **two** functions of mitosis? **(2 marks)**

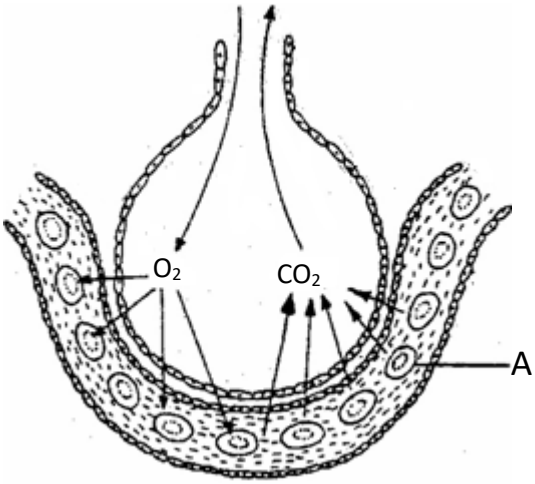
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21. The diagram **below** shows the exchange of gases in alveolus.



(a) State how the alveoli are adapted to their function. **(3 marks)**

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(b) Name the cell labeled **A**. **(1 mark)**

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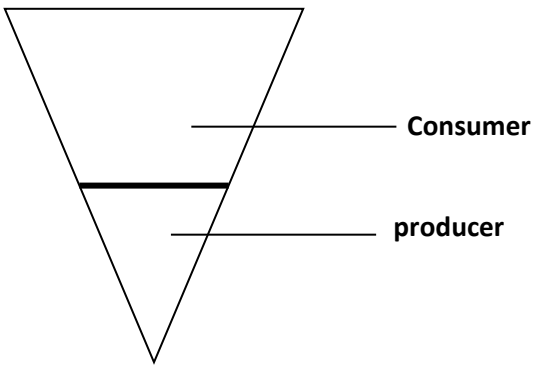
22. What are the external conditions needed, by root hair cells, for the uptake of mineral salts ions from the soil? **(2 marks)**

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23. The diagram below represents a pyramid of biomass derived from a certain ecosystem



(a) Suggest the type of ecosystem from which the pyramid was derived **(1mk)**

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(b) State the significance of short food chains in an ecosystem **(1mk)**

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24. Suggest two reasons for the appearance of glucose in the urine of a man. **(2 marks)**

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25. (a) State the source Carbon (IV) oxide in aquatic ecosystems. **(2 marks)**

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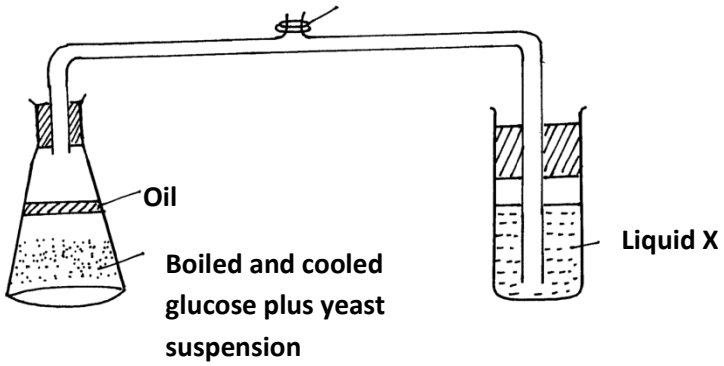
(b) State the importance of Carbon (IV) oxide to aquatic ecosystems. **(2 marks)**

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26. The set up below shows apparatus to demonstrate a certain biological process



(a) What biological process was being investigated in the experiment **(1mk)**

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(b)Write down a word equation that represents the reaction above **(1mk)**

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(c) In the above set up, why was it important to boil and cool glucose before adding yeast?

(1mk)

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27. What is the homeostatic importance of cuticles of leaves? **(2marks)**

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28. Outline two functions of parenchyma cells in herbaceous plants. **(2 marks)**

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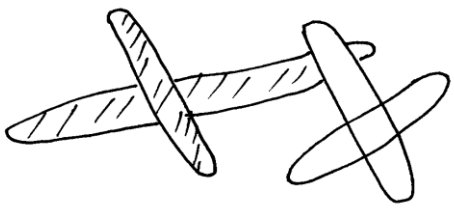
29. What is the important of diffusion to red blood cells? **(2marks)**

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30. The diagrams below show a pair of homologous chromosomes. Study them and answer the questions that follow.



(i) State the phenomenon shown above **(1mk)**

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(ii) What is the genetic significance of the phenomenon above? **(2mks)**

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31. Account for the thick wall and narrow lumen of an artery. **(2marks)**

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32. How do pathogens that enter the body through the respiratory tract in man prevented from causing diseases? **(1mark)**

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33. Where does the detoxification of ammonia take place in mammals? **(1mark)**

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34. Name the processes that take place in the grana of chloroplast. **(2marks)**

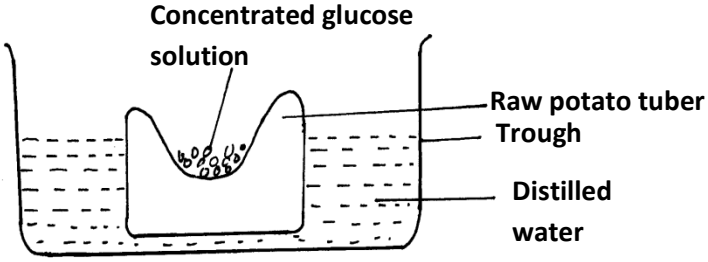
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35. The experiment illustrated below was set up to investigate a certain physiological process using a raw tuber



(a) Suggest a possible physiological process that was being investigated **(1mk)**

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(b) Explain the results obtained in the above experiment after a few hours **(2mks)**

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(c) State the observations that would have been made if the experiment was repeated using boiled potato **(2mks)**

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36. Name the causative organism of the following diseases

(i) Malaria **(1mk)**

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(ii) Bilharzia **(1mk)**

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FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

BIOLOGY

TIME: 2 HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

Kenya Certificate of Secondary Education (K.C.S.E)

BIOLOGY

PAPER 2

(THEORY)

INSTRUCTIONS TO CANDIDATES

- *Write your name, school and index number in the spaces provided above.*
- *This paper consist of **TWO** sections; **A** and **B**.*
- *Answer **all** the questions in the section **A** in the spaces provided.*
- *In section **B** answer Question **6 (compulsory)** and either question **7** or **8** in the space provided after question **8**.*
- *Check to ascertain that all pages are printed and that no questions are missing.*

FOR EXAMINER'S USE ONLY

Section	Question	Maximum Score	Candidates Score
A	1-5	40	
B	6	20	
	7	20	
	8	20	
Total Score		80	

1. A student observed feeding relationship while on a tour in a coastal Island.

Eagles feed on small fish, Small fish feed on sea grass, Insect larvae and molluscs feed on sea grass, Insect larvae fed on by small fish, while crabs feed on insect larvae and molluscs.

a) From the above information, construct a food web. **(3mks)**

b) In which trophic level is small fish found. **(1mk)**

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c) Extract a food chain where the Eagle is a tertiary consumer. **(1mk)**

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d) Suppose all the crabs were poisoned, what would be the immediate effect in the ecosystem. Give a reason. **(1mk)**

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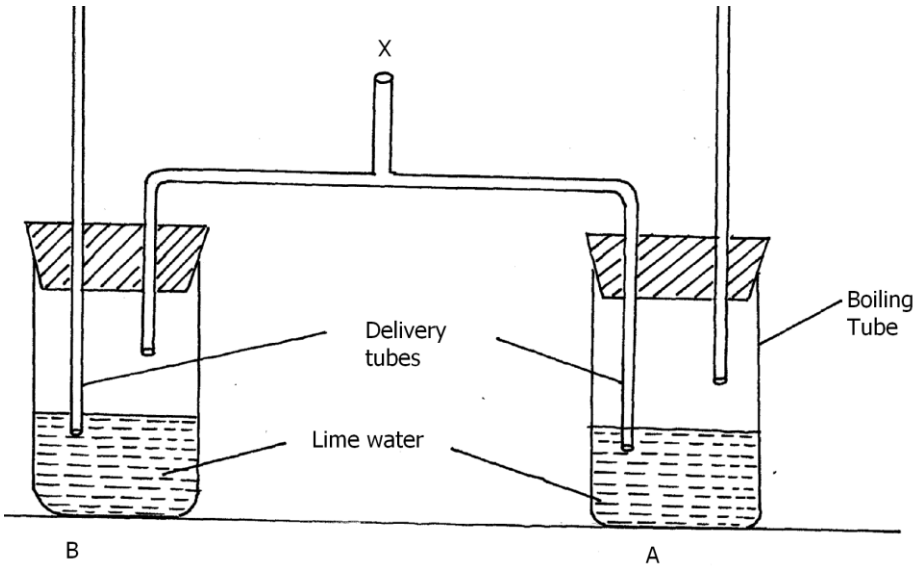
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(e) Give a reason why pyramid of biomass is a better representation of energy flow in an eco system than pyramid of numbers. **(1mk)**

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2. An experiment was set up as shown below.



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

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

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(ii) Give a reason. **(1mk)**

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(c) What is the effect of lactic acid in the thigh muscles of an athlete after a short fast race. **(2mks)**

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(d) Identify the type of muscle in human being where formation and effect of lactic acid is not felt. **(1mk)**

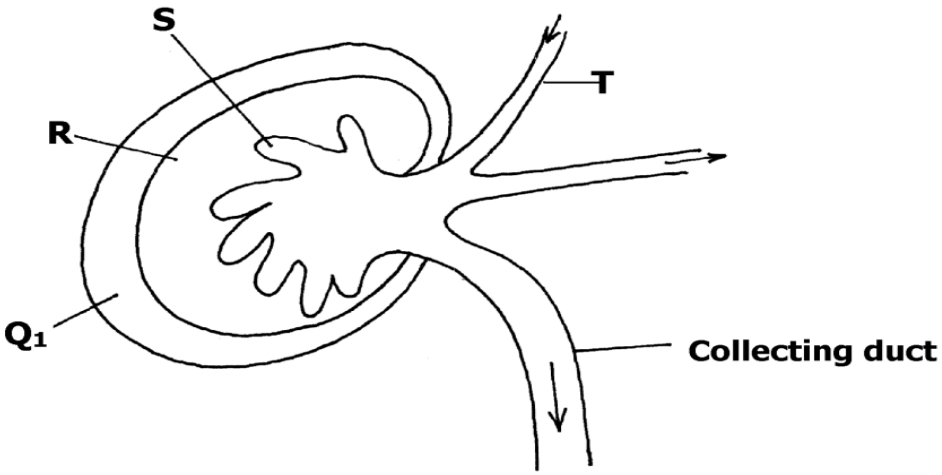
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(e) What is the biological significance of boiling milk /ultra heat treated milk. **(1mk)**

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3. The diagram below is a longitudinal section of an organ in mammals



a) Name the organ **(1mk)**

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b) Identify the parts R and S **(2mks)**

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c) i) State two differences in the structure above found in the deserted- rat and fish **(3mks)**

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ii) Account for the difference stated above. **(2mks)**

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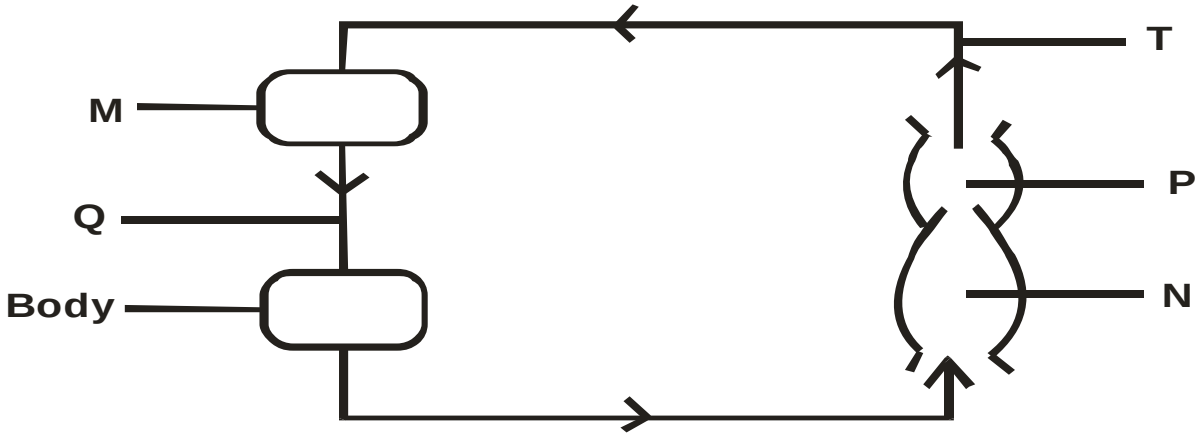
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d) Name the gland associated with the secretion of aldosterone hormone. **(1mk)**

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4. The diagram below represents a circulatory system found in a certain class of chordates.



(a) Identify the type of circulatory system shown above. **(1mk)**

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(b) Name **one** class of animals having this type of circulatory system. **(1mk)**

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c) Identify parts labelled M, N and P. **(3mks)**

M……

N……

P……..

d) What disadvantages is faced by having the types of circulatory system shown above? **(2mks)**

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e) Between blood vessels Q and T, which one carries oxygenated blood? **(1mk)**

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5. In an experiment to investigate the rate of reaction indicated by the equation.

$C_{12}H_{22}O_{11} \longrightarrow C_6H_{12}O_6 + C_6H_{12}O_6$

Sucrose Fructose Glucose

It was found out that for products fructose and glucose to form, substance "K" was needed. Temperature was maintained at 37°C.When substance "L" was added, reaction slowed and then stopped.

a) Suggest identity of the substances **(2mks)**

K……..…….

L……..…….

(c) Other than temperature, state <u>three</u> factures that increase the rate of reaction. **(3mks)**

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d) Explain how substance "L" slowed the rate of reaction. **(2mks)**

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e) What type of reaction is represented by the equation above? **(1mk)**

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SECTION B (40 MARKS)

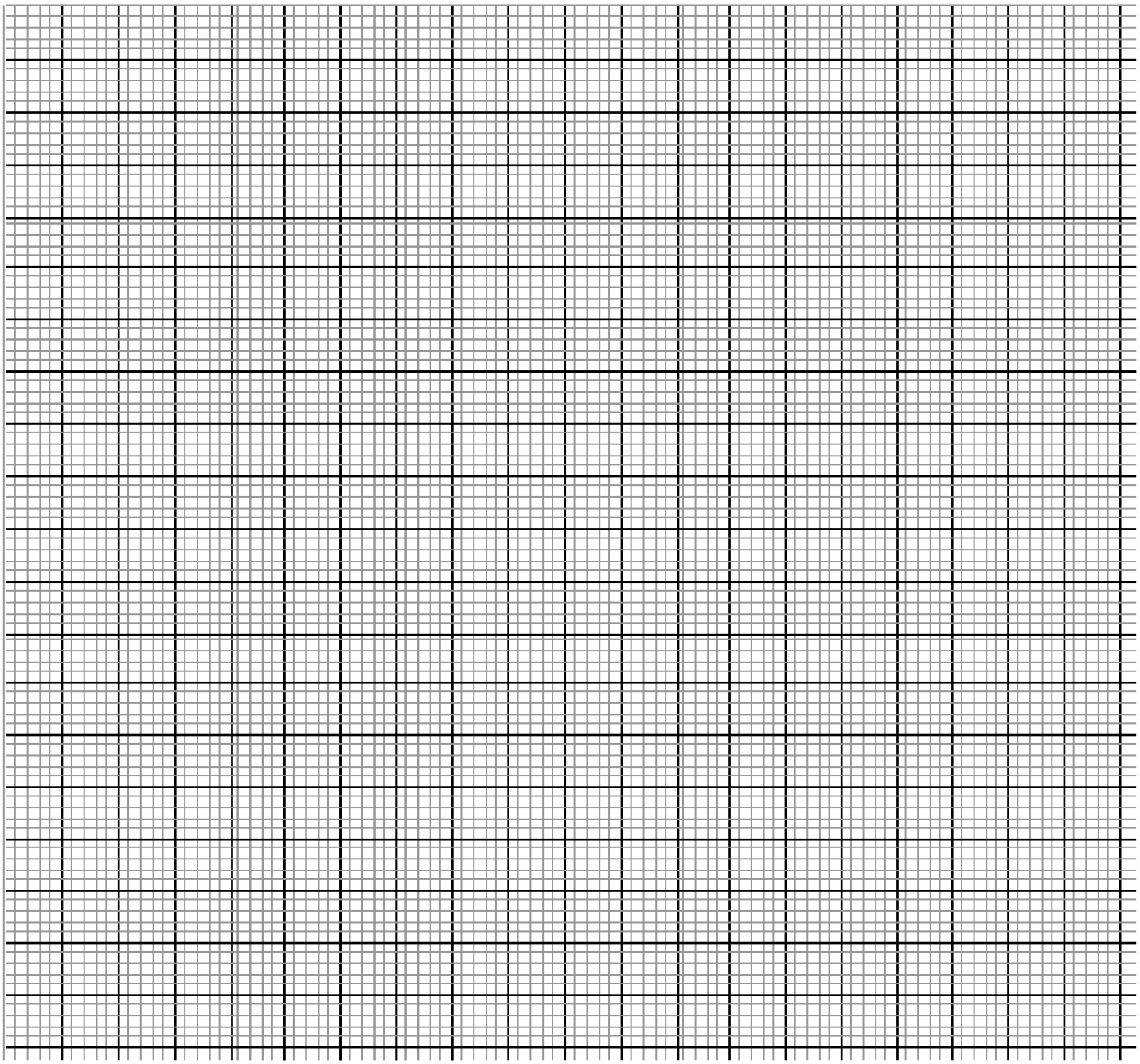
<u>Answer questions 6 (compulsory) and either questions 7 or 8 in the spaces provided questions</u>

6. The glucose level in mg per 100cm^3 of blood was determined in two person Y and Z. Both had stayed for six hours without taking food. They were fed on equal amount of glucose at the start of the experiment .The amount of glucose in their blood was determined at intervals .The results are shown in the table below.

Times in minutes	**Glucose level in blood in mg /100cm^3**	
	Y	**Z**
0	85	78
20	105	110
30	105	110
45	130	170
60	100	195
80	93	190
100	90	140
120	90	130
140	88	120

a) On the grid provided, plot graphs of glucose levels in blood against time on the same axes.

(7mks)



b) What was the concentration of glucose in the blood of Y and Z at the 50th minute**?** **(2mks)**

Y.....

Z.....

c) Account for the level of glucose in present Y

i) During the first 45 minutes. **(2mks)**

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ii) After 45th minute to the end. **(4mks)**

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d) Account for the decrease in glucose level person Z after 60 minutes. **(2mks)**

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e) Low blood sugar level in harmful to the body .Explain. **(3mks)**

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7. Discuss the adaptations of seeds and fruits to dispersal. **(20mks)**

8 Describe the structure and functions of various organelles in a mature animal cell. **(20mks)**

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FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

BIOLOGY

PAPER 3

CONFIDENTIAL

Each candidate should be supplied with the following;

- 2 test tubes in a test tube rack
- 10 ml of white wheat flour suspension in a 50ml beaker labeled **M**.
- 10 ml of groundnut solution in a 50 ml beaker labeled **N**.
- 10% Sodium hydroxide solution in a beaker labeled **U**
- Benedict's solution labeled **V**
- 1% copper sulphate solution in a beaker labeled X
- Droppers
- 2 filter papers
- A means of heating
- A test tube holder.

NB:

TO PREPARE GROUND NUT SOLUTION

Peel off the raw testa; then grind the cotyledons and embryo using mortar and pestle into a powder; then dissolve the powder in water in a beaker.

For every 20 candidates dissolve 10gms of ground nut powder in 100 ml of water.

TO PREPARE WHEAT SOLUTION

Dissolve 10gms of wheat flour in 100ml of water for every 20 candidate.

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

BIOLOGY

TIME: 1¾ HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

233/3

BIOLOGY

PAPER 3 (PRACTICAL)

Time: 1 Hour 45 Minutes

INSTRUCTIONS TO CANDIDATES

- *Write your name and index number in the spaces provided.*
- *Sign and write the date of examination in the spaces provided.*
- *Answer ALL the questions in the spaces provided in the question paper*
- *Spend the first 15 minutes of the time allowed for this paper reading the whole paper before commencing your work.*
- *ALL working MUST be clearly shown where necessary*

FOR EXAMINER'S USE ONLY

QUESTION	MAXMUM SCORE	CANDIDATE'S SCORE
1	14	
2	13	
3	13	
TOTAL	40	

1. a) You are provided with substances labeled **M, N, V, U** and **X** and a filter paper. **M** and **N** are food substances, while **V** is Benedict's solution, **U** is 10% Sodium Hydroxide solution and **X** is 1% Copper Sulphate solution. Using the reagents provided, carry out tests determine the food substance(s) in **M** and **N** (10 marks)

Substance	Food Substance Being Tested For	Procedure	Observation	Conclusion
M				
N				

a).State the functions of the food substances found in both **M** and **N**. **(4marks)**

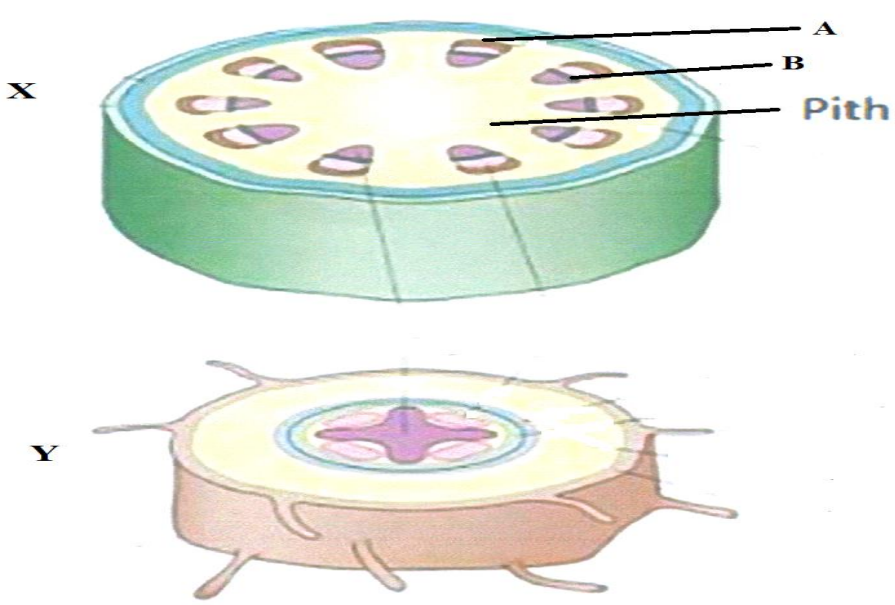
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2. Below are sections of a dicotyledonous plant organs labeled **X** and **Y**.



(a) Give **three** observable differences between the sections. **(3 marks)**

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(b) On the diagram, label any **three** parts of section Y. **(3 marks)**

(c) Identify and state the functions of the parts labeled **A** and **B**. **(4 marks)**

A ……

Function

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B ……

Function

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(d) How would section **X** compare with that of a monocotyledonous plant? **(3 marks)**

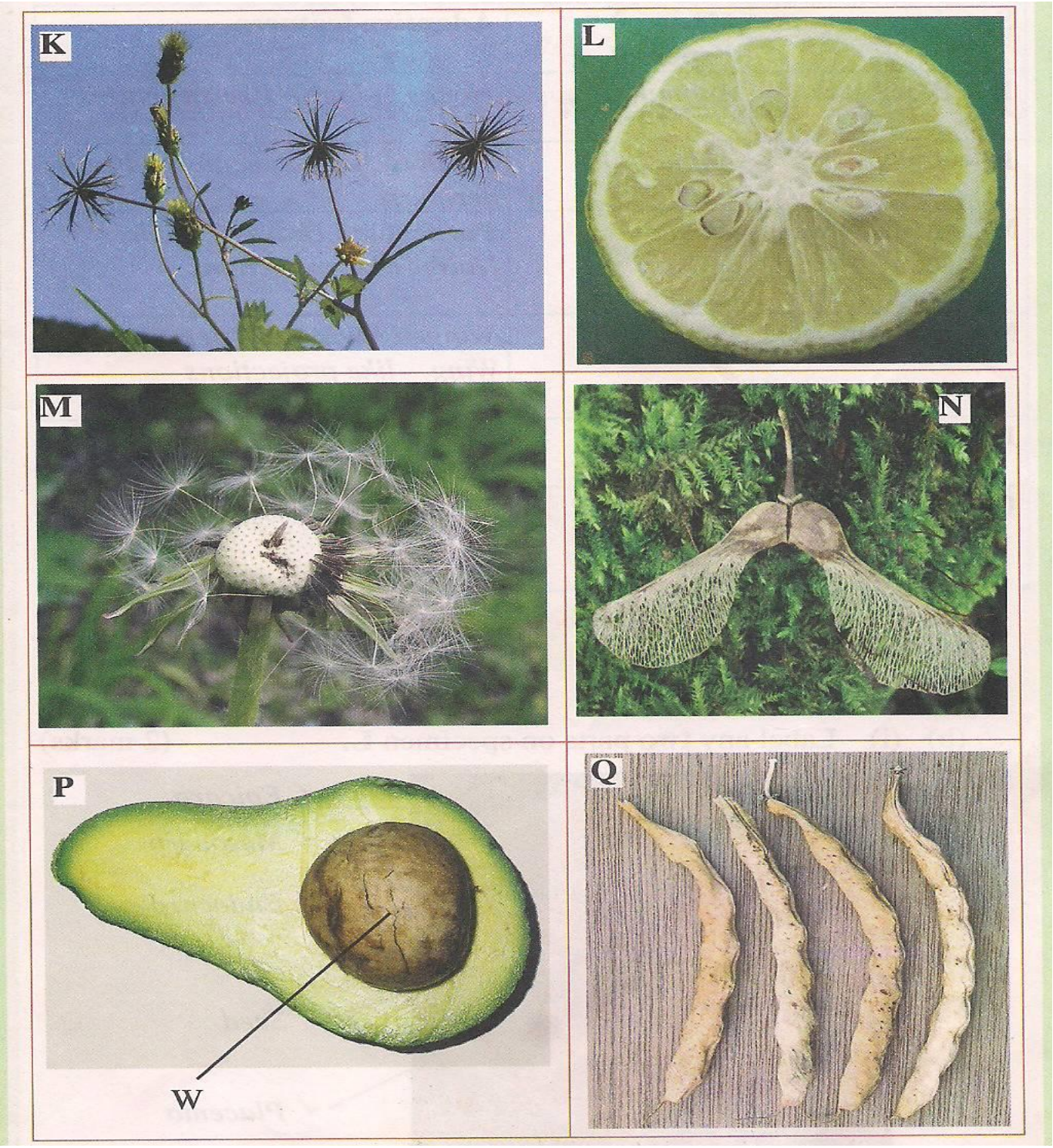
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3. Study the diagrams of fruits below



a) Name the type of fruit shown by P **(1mks)**

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b) State the type of dispersion used by fruit M, K and N. Give adaptation for each of them **(6mks)**

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c) Draw a well labeled diagram of diagram **L** **(5mks)**

d) State the type of placentation shown by diagram **Q** **(1mk)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

BUSINESS STUDIES

TIME: 2 HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

QUESTIONS

1 a) Outline four reasons why organizations need to safe keep documents in files **(4mks)**

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2.Give the four components of business studies **(4mks)**

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3.A business is expected to be socially responsible to various groups such as customers, employees, government, public and suppliers. Indicate against each statement the most appropriate group **(5mks)**

Statement	Group
i)Fair remuneration	
ii)Timely tax returns	
iii)Fairness in tender allocation	
iv)Equal job opportunities	
Quality products	

4.Use the table below to outline four differences between basic wants and secondary wants

(4mks)

Basic wants	Secondary wants

5.Identify three activities in the extractive level of production **(4mks)**

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6.Outline four ways in which partners may be classified **(4mks)**

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7.Highlight four characteristics of mail order store **(4mks)**

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8.Outline the meaning of the following terms as used in accounting **(4mks)**

i)Network of a business

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ii) Business transaction

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iii)Cash transaction

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vi) Credit transaction

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9.State four main factors that may limit the level of a country's national income**.** **(4mks)**

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10.Identify four ways in which a business may be of benefit to people in the surrounding area **(4mks)**

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11. State the effect of each of the following transaction on the balance sheet by writing increase or decrease or no effect in each case

Transaction	**Effect**
a)Bought machinery on credit	
b)withdrew cash from the business for personal use	
c)Purchased stock in cash	
d)Paid outstanding by cheque	

12.State four ways of increasing efficiency and effectiveness of human porterage

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13.The following information relates to Makuyu Traders. Determine the missing figures. **(3mks)**

	Assets	Liabilities	Capital
a)	50000	70000	
b)	320000		280000
c)		14360	12000

14.Post the following transactions in the ledger books of Embakasi traders (4mks)

March 1/2013 commenced business with sh. 150,000 cash at bank

March 5/2013 bought machinery in credit for sh. 9500

March 7/2013 withdrew sh 5000 from bank for office use

March 8/2013 paid sh 3000 cash to creditor

15. Give four reasons that make insurance companies decline to insure acts of nature **(4mks)**

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16. Name 4 sources of business ideas. **(4mks)**

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17. State 4 office etiquette of a business person. **(4mks)**

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18.Mention four main types of demand**.** **(4mks)**

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20.Name 4 methods of government involvement in business **(4mks)**

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21.Name 4 types of public utilities. **(4mks)**

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22. Name 4 barriers of effective communication. **(4mks)**

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23.Name 4 types of life assurance contracts **(4mks)**

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24. Name 4 characteristic of a good filing system. **(4mks)**

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25. Give 4 characteristics of oligopoly market structure. **(4mks)**

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FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

BUSINESS STUDIES

TIME: 2 HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

Instructions to candidates;

- ***a)*** *Write your name and admission number in the spaces provided above.*
- ***b)*** *Sign and write the date of examination in the spaces provided above*
- ***c)*** *This paper consists of **six** questions.*
- ***d)*** *Answer any **five** questions in the spaces provided after question six.*
- ***e)*** *All questions carry equal marks*

For Examiners use only.

Question	Maximum score	Candidate's score
	20	
	20	
	20	
	20	
	20	

QUESTIONS

1.(a) Explain five internal economies of scale that may be experienced by the firm **(10mks)**

(b) Explain five factors to be considered when setting up an office layout for a business organization **(10mks)**

2a) Explain **five** assumptions that will make a circular flow of two sector economy to hold. **(10marks)**

b)Explain **five** ways of improving the efficiency of a warehouse. **(10 marks)**

3.a)Explain six ways which the government of Kenya can use to influence the supply of maize in Kenya **(12mks)**

b)The following balance relate to the business of Roba traders during the period ended 31st March 2014.

Cash at bank	680,000	
Premises		500,000
Machinery		175,000
Creditors		190,000
Furniture		85,000
Motor van		200,000
Cash in hand	50,000	
ADS5y loan		630,000

Extract the trial balance of Roba traders as at 31st March 2014 **(8mks)**

4a)Discuss any four importance's of a balance sheet with special reference to the interested parties to a balance sheet **(8mks)**

b)Highlight any six types of an employment and disclose a remedy (solution) for each type **(12mks)**

5. a)Describe **four** circumstances under which an insurance company would not compensate the insured in the event of loss**.** **(8 marks)**

b)The following balance sheet was extracted from the books of Imara stores on 1stMay2015.

IMARASTORES

Balance Sheet

sat1stMay2015

	Ksh		Ksh
Furniture	82,000	Mbotela(creditor)	27,000
Stck	140,000		
Cash	20,000		
	442,000		442,000

The following transaction took place during the month of May2015.

4.5.2015: The owner of Imara stores sold personal assets for Ksh 30,000 receiving payment by cheque which he invested in the business.

10.5.2015: He purchased goods for Ksh 29,000 on credit from Mbolela.

19.5.2015: He turned goods worth Kshs 3,000 to Mbotela after they were fund defective.

30.5.2015: He sold goods for Ksh 12,000 cash.

Required: Open relevant ledger accounts, record the above transaction and balance them off.(12 marks)

6. a)Highlight any five distinguishing characteristics between a public Ltd company and public corporation. **(10 marks)**

b)Discuss five conditions necessary for the existence of perfect competition type of market structure. **(10marks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

AGRICULTURE

TIME: 2 HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

443/1
AGRICULTURE
Paper 1
(THEORY)

2 hours

Instructions to students

(a) Write your name and index number in the spaces provided at the top of this page.
(b) Sign and write the date of the examination in the spaces provided.
*(c) This paper consists of three sections: **A**, **B** and **C**.*
*(d) Answer all questions in sections **A** and **B**.*
*(e) Answer any two questions in section **C**.*
(f) All answers should be written in the spaces provided.

For Examiner's Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1 – 19	30	
B	20– 23	20	
C		20	
		20	
	TOTAL SCORE	**90**	

SECTION A

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

1. Name two classes of weeds on the basis of the following.

(a) Growth cycle **(1mk)**

……

……

(b) Plant morphology **(1mk)**

……

……

2. State four reasons for land fragmentation in Kenya. **(2mks)**

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3. Give four advantages of individual owner operator tenure system as practiced in Kenya. **(2mks)**

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4. Give four methods of breaking seed dormancy. **(2mks)**

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5. State four disadvantages of organic mulch in crop production. **(2mks)**

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6. Give four practices carried out in a tree nursery. **(2mks)**

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7. State four reasons for staking tomatoes. **(2mks)**

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……

8. List three methods of treating water for use on the farm. **(1 ½ mks)**

……

……

……

9. Give two examples for each of the following categories of water pipes.

(a) Metal pipes **(1mk)**

……

……

(b) Hose pipes **(1mk)**

……

……

10. What is organic farming? **(1mk)**

……

……

11. State four problems that may be brought about by hardpans in crop land. **(4mks)**

……

……

……

……

12. State four information contained in a land title deed. **(2mks)**

……

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……

……

13. Mention the simultaneous processes that lead to the formation of erosional characteristics of a gully. **(4mks)**

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14. State three factors that determine the depth of planting. **(1 ½ mks)**

……

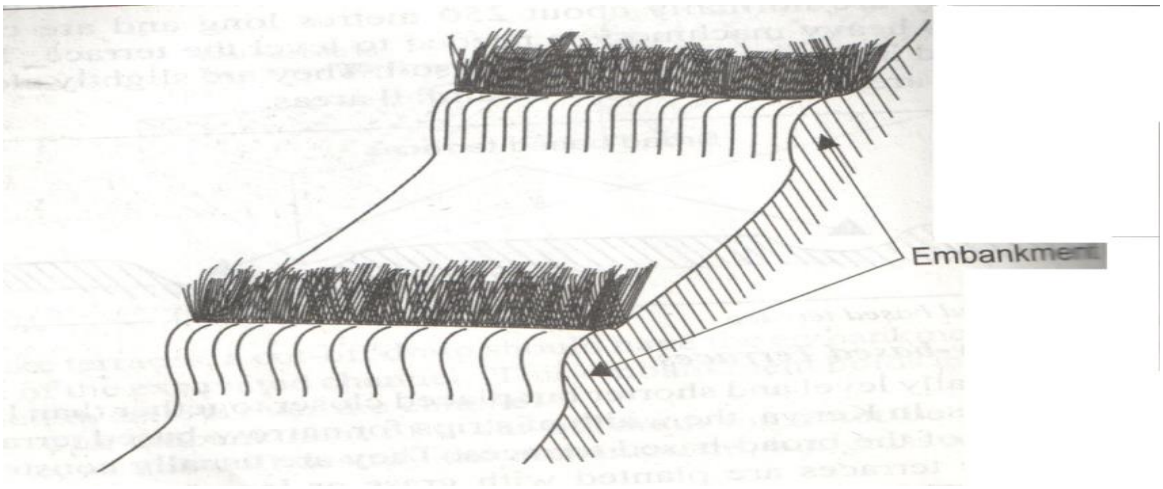
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SECTION B (20MKS)

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

15. The diagram below shows a soil water conservation structure.



a) Identify the method of soil and water conservation shown in the diagram. **(1mk)**

……

b) State three practices that can be carried out on the above structure to make it stable. **(3mks)**

……

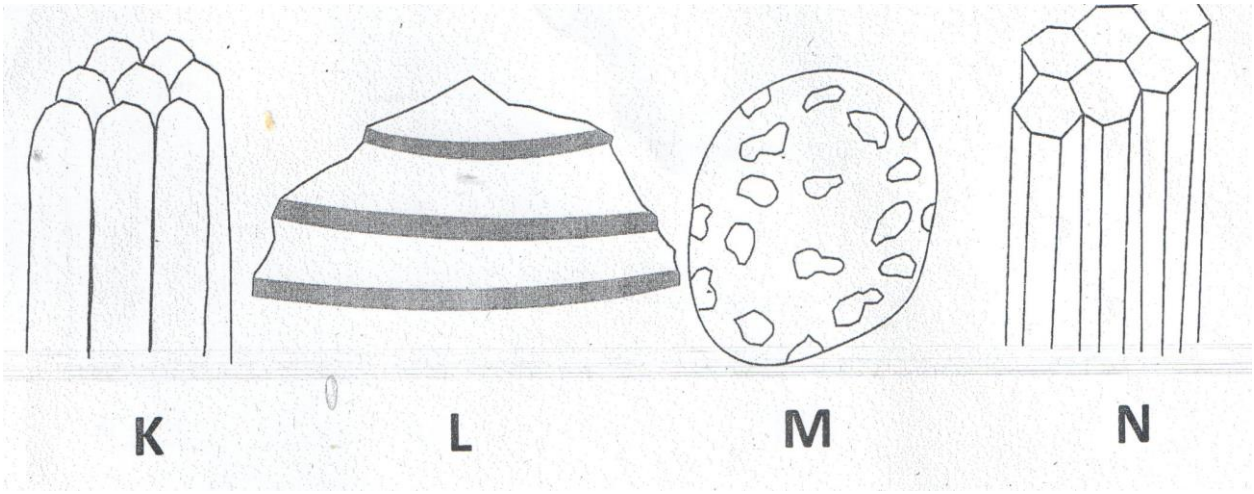
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c) State any other structure that can be used in soil and water management. **(1mk)**

……

16. The diagram K, L, M and N below represents types of soil structures. Study the diagrams carefully and the answer the questions that follow.



Identify the soil structures labeled L , N and M. **(3mks)**

L -

M –

N –

Give one difference between soil structure K and N. **(1mk)**

……

……

How can the soil structure labeled M be improved? **(1mk)**

……

……

17. of A plot land measures 6.6m long by 3.6m wide. This plot is prepared for planting cabbages at a spacing of 60cm by 60cm. the outermost row starts at 30cm from the edges all around the plot. Calculate:

The number of the rows falling on the width side of the plot**.** **(2mks)**

……

……

……

The number of cabbage seedlings that should be planted on the plot. **(3mks)**

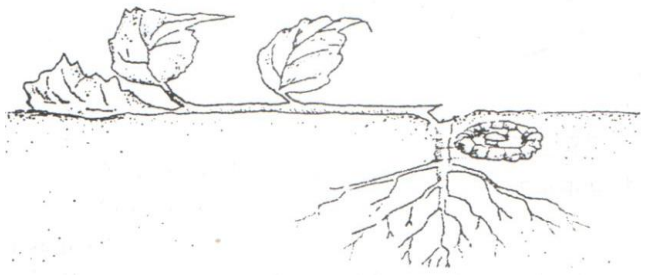
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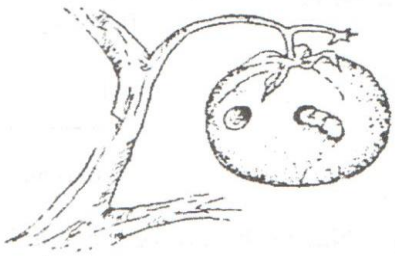
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18. Study the illustrations given below and then answer the questions that follow



A



B

(b) Identify the pests shown by illustrations A and B. **(1mk)**

(c) State two effective methods of controlling each of the pests labeled A and B.

A **(2mks)**

……

……

B **(2mks)**

……

……

Section C (40mks)

Answer any two questions from this section in the spaces provided.

19. Outline safety precautions when using herbicides. **(12mks)**

b) Outline physical measures that have been employed in the control of pests. **(8mks)**

20. Explain five effects of soil erosion. **(5mks)**

b) Describe the field production of tomatoes from transplanting to harvesting. **(15mks)**

21. Describe advantages of sub-surface irrigation. **(7mks)**

b) Explain contribution of agriculture to National development. **(12mks)**

c) Define agriculture. **(1mk)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

AGRICULTURE

TIME: 2 HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

443/2
AGRICULTURE
Paper 2
(THEORY)

2 hours

Instructions to students

(a) Write your name and index number in the spaces provided at the top of this page.
(b) Sign and write the date of the examination in the spaces provided.
*(c) This paper consists of three sections: **A**, **B** and **C**.*
*(d) Answer all questions in sections **A** and **B**.*
*(e) Answer any two questions in section **C**.*
(f) All answers should be written in the spaces provided.

For Examiner's Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1 – 19	30	
B	20– 23	20	
C		20	
		20	
	TOTAL SCORE	**90**	

Answer ALL Questions in this section.

1) Give two uses of foot bath in a cattle dip. **(2mks)**

……

……

2) Give four characteristics of exotic cattle that make them not to survive well in arid areas. **(2mks)**

……

……

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3) Differentiate between roughage and concentrate feeds as used in livestock nutrition. **(2mks)**

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4) List four reasons for treating timber before roofing farm building. **(2mks)**

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……

5) Give three problems associated with lambing in sheep. **(3mks)**

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……

……

6) Give 2 importance of growing grass around a fish pond. **(2mks)**

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7) Outline four qualities of honey. **(2mks)**

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8) Outline four maintenance practices that should be carried out on a hand saw. **(2mks)**

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9) List four management practices that should be carried out during mating season in sheep.**(2mks)**

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10) Give one function of omasum in ruminants. **(1mk)**

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……

11) State two uses of sickle on the farm. **(2mks)**

……

……

12) State four routes of administering vaccines in poultry. **(2mks)**

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13) State three circumstances which would lead a farmer to cull a high producing dairy cow. **(3mks)**

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14) Give two best methods of identifying bulls. **(1mk)**

……

……

15) Name four materials collected by bees. **(2mks)**

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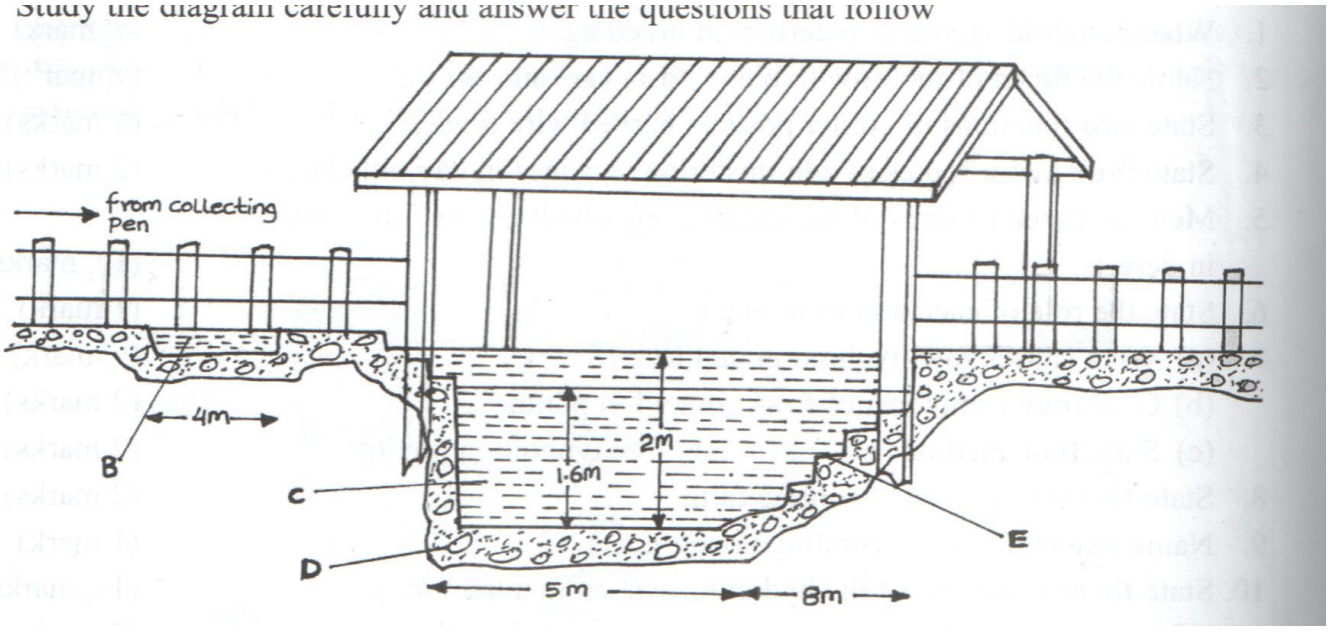
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SECTION B: 20 MARKS

Answer All Questions in this section.

16) The diagram below illustrates a cross section of a livestock handling structure. Use it to answer questions that follow.

Study the diagram carefully and answer the questions that follow



(c) Name parts. **(4mks)**

B –

C –

D –

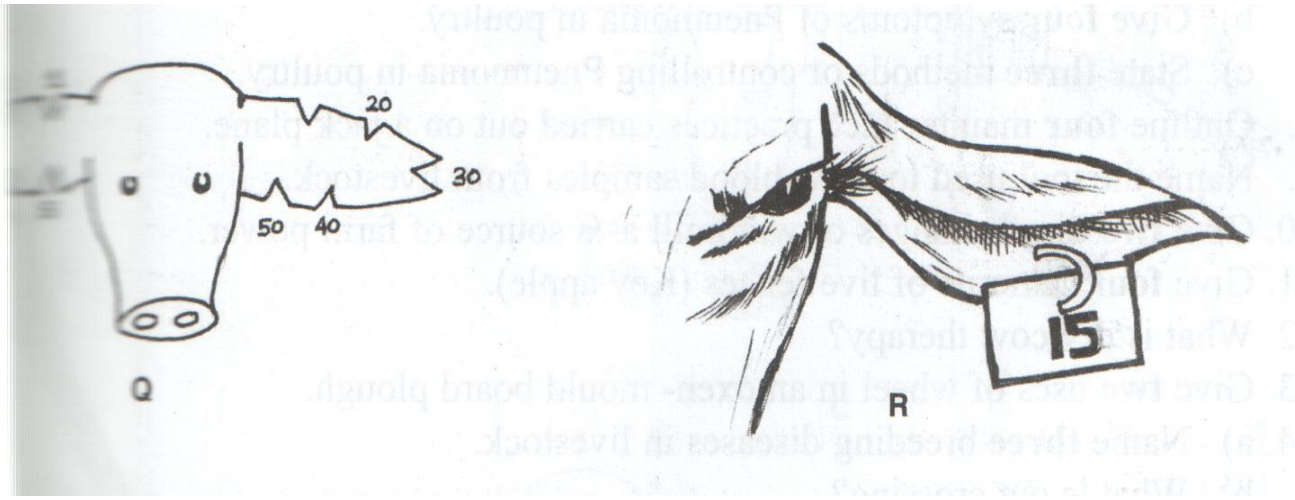
E –

(d) Give the function of parts. **(2mks)**

B:-

D:-

17) Diagrams Q and R below illustrate a practice carried out on livestock. Study them and answer questions that follow.



a) Identify methods Q and R. **(2mks)**

……

……

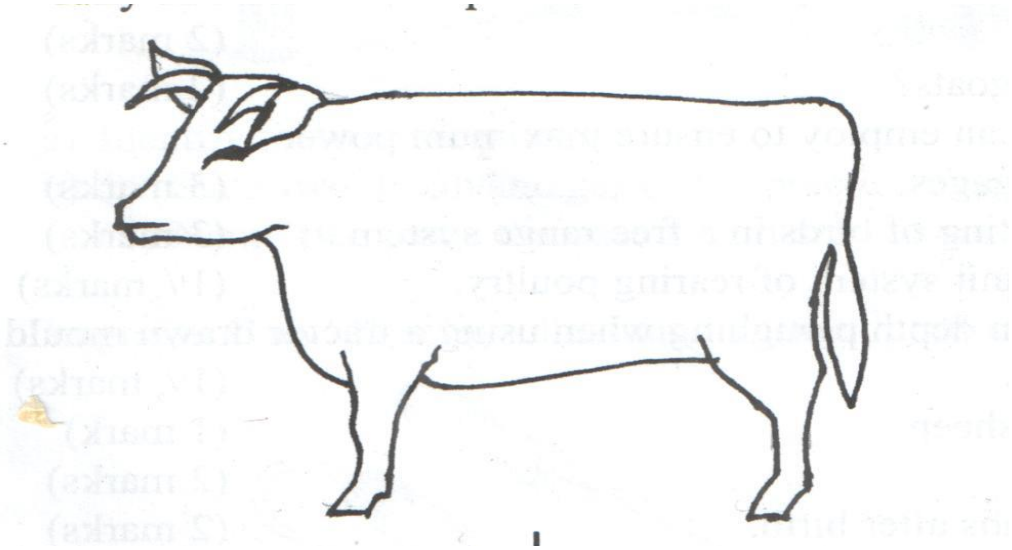
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b) Give one tool of carrying out practice Q. **(1mk)**

……

……

18) Diagram L below illustrates the external features of a cow. Study it careful and answer the questions that follow.



Using letter T with a pointing arrow indicate four areas where ticks are found. **(3mks)**

36. Name two chemical methods of controlling ticks. **(2mks)**

……

……

37. Name the type of animal giving a reason. **(2mks)**

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19) A farmer wanted to prepare a 200kg of calf rearing ration containing 20% D.C.P. Using pearson's square method calculate the amount of maize containing 10% DCP and sunflower containing 35% DCP the farmer would need to prepare the ration. **(4mks)**

SECTION C: (40 MARKS)

Answer any TWO questions in this section.

20) (a) Describe four methods used in fish preservation prior to marketing. **(8mks)**

(b) State four advantages of embryo transplant. **(4mks)**

(c) Describe four disease predisposing factors in livestock. **(8mks)**

21)(a) Compare and contrast ruminants and non-ruminants. **(10mks)**

(b) Describe five uses of water in the animal's body. **(10mks)**

22)(a) Describe five possible uses of a crush. **(5mks)**

(b) Explain five importance of dehorning animals. **(10mks)**

(c) State five reasons for swarming of bees. **(5mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

CHRISTIAN RELIGIOUS EDUCATION

TIME: 2 HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

Answer Any Five Questions

1. (a) Explain ways in which CRE promotes national unity **(8mks)**

(b) Outline six reasons why Bible is referred to as the word of God**.** **(6mks)**

(c) Outline ways in which Christians obey instructions given by God in creation stories.**(6mks)**

2. (a) From the call of Moses, explain five reasons why he was reluctant to accept the task given by **God.** **(10mks)**

(b) Outline five roles of Moses in **Israel.** **(5mks)**

(c) Give five problems church leaders face in their work tod**ay.** **(5mks)**

3. (a) Identify six reasons why Samuel was against kingship in Israe**l** **(6mks)**

(b) outline ways in which David promoted worship of Yahweh in Israel**.** **(7mks)**

(c)what lessons do church leaders learn from David's **leadership?** **(7mks)**

4. (a) Identify characteristics of true prophets in the old testame**nt** **(5mks)**

(b)Explain the Visions of Prophet Amos and give their **significance** **(10mks)**

(c) Identifyfive evils in society today that prophet Amos would have condemned **(5mks)**

5. (a) Explain four reasons why prophet Jeremiah condemned human **sacrifice** **(8mks)**

(b) Outline five characteristics of the new covenant as foretold by prophet Jeremiah **(5mks)**

(c) State lessons Christians learn from prophet Jeremiah's suffering and lamentations **(7mks)**

6.(a) Give the importance of kinship in traditional African society **(7mks)**

(b) Highlight six responsibilities of living towards ancestors **(6mks)**

(c) Outline ways in which Christians honour God today **(7mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

CHRISTIAN RELIGIOUS EDUCATION

TIME: 2 HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

Answer Any Five Questions

1a) Describe activities that took place during dedication of Jesus in the Temple (LK 2:22- 40) ***(8mks)***

(b) Outline seven lessons Christians learn from the incident when Jesus was left behind by his parents in the Temple. (Luke 2: 41 - 52). ***(7 mks)***

(c) State five ways in which Christians show respect to places of worship in Kenya today***.(5 mks)***

2. (a) With reference to the sermon on the plain, state six teachings of Jesus on how human beings should relate to one another**.** ***(6 mks)***

(b) Describe the incident in which Jesus calmed the storm. (Luke 8: 22 - 25). ***(7 mks)***

(c) Identify virtues that Christians learn from the miracle of the feeding of the five thousand. ***(7 mks)***

3. (a) State five accusations that were made against Jesus during his trial. (Luke 22: 66 -23: 1-23). ***(5mks)***

(b) Give reasons why Jesus appeared to His disciples after resurrection**.** ***(7 mks)***

(c) Why should Christians be discouraged from taking part in mob justice? ***(8mks)***

4. (a) Explain the teaching of Peter concerning the people of God (1st Peter 2: 9 - 10) ***(8mks)***

(b) Give ways through which Christians can promote unity among themselves in Kenya today**.** ***(7mks)***

(c) State how kindness as a fruit of the Holy Spirit is abused in the Church in Kenya today.

(5mks)

5 a) Outline the events that took place at Jesus entry into Jerusalem (Luke 19:28-**40.** **(7mks)**

(b) State what the two disciples to Emmaus discussed about Jesus. **(6mks)**

(c) Explain how unity is demonstrated in Kenyan churches today. **(7mks)**

6 a) Explain the teaching of Jesus on praye**r** ***(7mks)***

(b) State the occasions when Jesus **prayed** **(*7mks*)**

(c) Why do some Christians find it hard to **pray ?** ***(6mks)***

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

KISWAHILI

TIME: 2½ HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

MAAGIZO:

- *Andika Insha mbili. Insha ya kwanza ni ya lazima.*
- *Kisha chagua insha nyingine moja kati ya hizo tatu zilizobaki.*
- *Kila insha isipungue maneno 400.*
- *Kila insha ina alama 20.*

MASWALI:

1. Wewe ni katibu wa kamati ya maslahi ya klabu ya wasanii chipukizi mtaa wa Rehema. Andika kumbukumbu za mkutano uliofanywa hivi karibuni kujadili suala la usalama uliozorota.

2. Mfumo wa elimu nchini Kenya una kasoro nyingi na unafaa kufanyiwa mabadiliko. Eleza.

3. Andika kisa kinachodhihirisha maana ya methali: Ujana ni moshi ukienda haurudi.

4. Tunga kisa kinachomalizika kwa maneno haya: '……. Hapo ndipo iliponipambazukia kuwa nilikuwa naogelea baharini pekee, kinyume na wenzangu wote.

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

KISWAHILI

TIME: 2½ HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

SEHEMU A.UFAHAMU (ALAMA 15)

Soma makala yafuatayo kisha kisha ujibu maswali:-

Waajiri wengi wanazilaumu taasisi za elimu kwa kukosa kutoa wafanya kazi wenye ujuzi tosha, hasa wa kiteknolojia za kisasa kama kutumia kompyuta kutenda kazi mbalimbali. Hali hii imekuwa ya kuhuzunisha sana.

Ujuzi wa kuweza kutumia Kompyuta unaweza kumfaa mwanafunzi hata anapokosa nafasi ya kujiunga na chuo kikuu kwa vile anaweza kuendelea na elimu yake kupitia kwa elimu mtandao. Pia anaweza kufanya utafiti wa kina kupitia intaneti na kwa njia hii akaimarisha elimu yake.

Mojawapo ya njia ya kuimarisha elimu kuhusu maswala ya teknolojia ni kuanzishwa kwa mikakati mipya ya kufunza. Somo la Kompyuta laweza kuimarika mashuleni endapo kwanza walimu watahamasishwa juu ya faida za ujuzi huu.

Kwa kutumia Kompyuta kufunza, walimu wanaweza kufunza madarasa kadhaa katika kipindi kimoja bila kulazimika kuyahudhuria. Hii itapunguza kiwango cha kazi kwa walimu kwa vile watapata muda wa kufanya utafiti mpana. Aidha, watapata habari na ufahamu zaidi wa mambo kwa kutumia mitambo ya Kompyuta kutoka kwenye intaneti, kupitia tovuti.

Hata hivyo mipango hii inakabiliwa na changamoto kama vile bei za juu za mitambo na vifaa vya Kompyuta, ukosefu wa miundo msingi itakayowezesha utumiaji wa mitambo hii na ukosefu wa walimu waliohitimu somo la Kompyuta.

Pia, kuna tatizo la ukosefu wa nguvu za umeme hasa maeneo ya mashambani; vile vile, katika maeneo yaya haya, wanafunzi na wazazi wengi huvichukulia somo la Kompyuta kuwa gumu na linalofaa wakaazi na wanafunzi kutoka maeneo ya mijini na linalofaa wakaazi muhimu kwao mashambani.

Maswali

(a) Ipe taarifa uliyoisoma anwani inayoifaa **AL.2**

……

……

(b) "Hali hii imekuwa ya kuhuzunisha." Ni hali gani inayozungumziwa katika aya ya ? **AL.2**

……

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(c) Ujuzi wa kutumia Kompyuta unaweza kumfaidi vipi mwanafunzi? **AL.4**

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(d) Mikakati mipya ya kuimarisha elimu kuhusu maswala ya teknolojia inakabiliwa na vizingiti vipi? **AL.3**

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(e) Taja manufaa mawili ambayo mwalimu anaweza kupata kutokana na ujuzi wa teknolojia ya Kompyuta **AL.2**

……

……

……

(f) Andika msamiati mwafaka zaidi kwa maneno yafuatayo: **AL.2**

(i) Kompyuta_____

(ii) Intaneti _____

SEHEMU B.UFUPISHO (ALAMA 15)

Soma taarifa hii kisha ujibu maswali

Umaskini ni tatizo sugu katika jamii. Binadamu wengi hujikuta katika hali hii kwa sababu hawakubahatika kusoma. Baadhi yao huenda walijaribu kusoma wakashindwa mapema kujipandisha kielimu. Ukosaji wa elimu huchangia sana katika kukuza ukata. Elimu huweza mtu kupata tonge kwa kujipatia kazi za kumwezesha kuyakidhi mahitaji ya maisha. Hali kadhalika, elimu humsaidia binadamu kupata maarifa mengi ya kutendea shughuli zake za kimaendeleo. Kwa mfano, kama ni wakulima wanaweza kutumia **pembejeo** zifaazo ili kuboresha uzalishaji wa mazao. Wakulima wenye elimu hawatapendelea njia duni za kuendeleza kilimo kama vile kutumia visagilima na mbinu nyingine za kijadi. Badala yake watatumia njia za kisasa za kuvunia mazao yao.

Umaskini mwingine huwa mwiba wa kujichoma. Baadhi ya watu ni mikunguni. Kulaza damu kwao kunawafanya kuwa wategemezi katika familia na jamii kwa jumla. Kwa vile hawajazoea kuinamia cha mvunguni, hata wakifunzwa kuchakura hawawezi. Ili kujaribu kuutibu uwele wao na ufukara baadhi yao hutafuta njia za mkato kama vile upwekuzi wa vitu vya wale waliojitahidi. Wakifanikiwa huweza **kufurisha vibindo vyao.** Hata hivyo mkono mrefu wa walinda usalama ukiwakumbatia wao hubakia kusagika kwa dhiki isiyomithilika ndani ya magereza.

Majanga ya kimaumbile kama vile mitetemeko ya ardhi, mikurupuko ya maradhi hatari, moto, ukame na mafuriko huchangia na kuzidisha umaskini. Matukio hayo yakiandama kidindia watu wengi huhasirika. Licha ya mali nyingi kupotea, manusura huachwa wakiwa maskini hohehahe. Matumizi yao hupotea kwani wengi huhitajika kuanza maisha upya.

Vijana ni nguzo muhimu katika maendeleo ya nchi yoyote ile. Endapo watajiingiza katika uraibu wa dawa za kulevya, wataathirika wao wenyewe na jamii kwa jumla. Pamoja na kuwa vijana hawa hufuja pesa nyingi katika ununuzi wa dawa hizi, dawa zenyewe huwadhoofisha na kuwapoka nguvu za kushiriki katika uzalishaji mali. Kutokana na hali hii,umaskini hupaliliwa na kushamiri zaidi.

Umaskini huzua matatizo mbalimbali katika jamii. Ufukara huchachawiza juhudi za serikali za kuwapa raia wake mahitaji ya kimsingi kama vile huduma za afya. Pia umaskini husababisha maovu mbalimbali ya kijamii kama vile mauaji na ukahaba.

Baadhi ya wanajamii huona kwamba njia ya kipekee ya kukabiliana na changamoto zinazosababishwa na hali ya ulitima ni kupitia kwa biashara haramu. Hali hii huchochea zaidi kudorora kwa maadili ya kijamii.

Mataifa mbalimbali ulimwenguni yamezua mikakati mahsusi ya kukabiliana na umaskini. Baadhi ya mataifa yamebuni utaratibu maalum wa kupunguza mwanya mkubwa uliopo kati ya matajiri na maskini. Mojawapo ya mipango hiyo ni kupandisha viwango vya kodi inayotozwa wenye mishahara minono na wafanyibiashara wenye pato kubwa. Aidha huduma za burudani hutozwa kodi ya kiwango cha juu. Kupitia kwa kodi hizo, na njia nyinginezo, serikali za nchi hizo hupata pesa za kuwahudumia maskini.

Mataifa yanayoendelea yanaweza kuwakwamua wananchi kiuchumi kwa kuwapa wahitaji mitaji ya kuanzisha miradi mbalimbali ya kimaendeleo. Mifano ya miradi hiyo ni viwanda vya ‘Jua kali’, ususi wa vikapu na uchongaji wa vinyago. Hali kadhalika, serikali inaweza kuwatafutia masoko

ya nje wafanyi biashara wadogo wadogo. Aidha, serikali inaweza kupunguza ushuru kwa bidhaa zinazoagizwa na masoko ya nje wafanyibiashara wa aina hiyo. Mathalan, ushuru unaotozwa nguo kuukuu zinazoingizwa nchini ukipunguzwa, wauzaji wa nguo hizi watafaidika zaidi na hali ya umaskini itaendelea kupungua.

Sehemu za mashambani ni mhimili mkubwa wa uchumi. Ingawa kumekuwa na juhudi za kuzistawisha sehemu hizi kwa kusambaza huduma za umeme na maji kwa gharama nafuu, bado hali haijawa ya kuridhirisha. Ili kuimarisha sehemu hizi na kukabiliana vilivyo na tatizo la umaskini, hatuna budi kusambaza huduma hizi hasa katika sehemu kame. Sehemu hizi zikipata maji, kilimo chenye natija kitaendelezwa na umaskini utakuwa karibu kuzikwa katika kaburi la sahau. Ikiwa tutazitekeleza sehemu hizi, vijana wanaoweza kusistawisha watahamia mjini kutafuta maisha 'bora'. Hali hii itazidisha msongomano wa watu mjini.

Umaskini ni nduli ambaye lazima aangamizwe ima fa ima. Vijana hawana budi kubadili mtazamo wao hasa kuhusu kazi za mashambani na kujitahidi kuimarisha kilimo. Fauka ya hayo, mifumo mwafaka ya elimu ibuniwe ili kukidhi mahitaji ya kiuchumi ya taifa. Badala ya kuhimiza elimu ya kinadharia, elimu tekelezi isisitizwe zaidi ili wale wanaokosa kazi za kiafisi waweze kujiajiri katika kazi za kiufundi. Ukusanyaji wa ushuru uimarishwe zaidi. Hali ya usalama iendelee kustawishwa ili kuzidi kuwavutia wawekezaji, na hivyo kubuni nafasi zaidi za kazi.

Maswali

(a)Kulingana na kifungu '**umasikini ni hali inayoletwa na udhaifu wa mtu binafsi'**. Jadili (maneno 30-40) AL.7

MATAYARISHO

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NAKALA SAFI

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(b)Jamii ina uwezo wa kukabiliana na hali ya umaskini inayowakumba raia wake. Thibitisha kwa mujibu wa kifungu (maneno 40-50) AL.8

MATAYARISHO

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SEHEMU C.MATUMIZI YA LUGHA: (ALAMA 40)

(a) Eleza sifa za sauti /ch/ **(alama 2)**

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(b) Badilisha sentensi ifuatayo iwe mazoea kwa kutumia kirejeshi "O". **(alama 2)**

Mtoto anayelia huchapwa

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(c) Pambanua viungo vya kisarufi katika neno lifuatalo. **(alama 3)**

Tuliwalimia

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(d) Tunga sentensi ukitumia neno mzee kama: **(alama 2)**

(i) Kivumishi

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(ii) kielezi

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(e) Jaza mapengo. **(alama 3)**

Kutenda	Kutendewa
Pa	_____
Cha	_____
Nya	_____

(f) Eleza maana ya misemo ifuatayo. **(alama 2)**

(i) Giza la ukata

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(ii) Meza mate machungu

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(g) Bainisha shamirisho katika sentensi ifuatayo. **(alama 3)**

Maksundi alimjengea Tamari nyumba kwa matofali mazuri.

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(h) Nomino zifuatazo zinapatikana katika ngeli gani? **(alama 2)**

(i) Topasi

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(ii) Kambare

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(i) Andika sentensi ifuatayo kwa kufuata maagizo. **(alama 2)**

Mizizi ya mibaruti hii iliwaponya watu ambao walikuwa na shida kama hii yenu (kanusha kwa umoja).

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(j) Changanua sentensi ifuatayo kwa kutumia kielelezo matawi. **(alama 4)**

Mwizi aliyetuibia jana amekamatwa hatimaye.

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(K) Tunga sentensi yenye masharti yafuatayo. **(alama 3)**

(i) Kiima

(ii) kiarifu

(iii) chagizo

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(l) Andika sentensi ifuatayo kwa ukubwa huku ukikanusha. **(alama 3)**

Kijibwa chake ni kikali

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(m) Jaza neno ambalo ni kinyume cha lile lililopigwa mstari katika sentensi. **(alama 2)**

(i) Vile vitu <u>ulivyovichanganya</u> itakubidi

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(ii) Bomba hili <u>limeziba</u> mwite fundi aweze

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(n) Andika katika usemi halisi. **(alama 3)**

Mama aliwahimiza warudi siku hiyo la sivyo wangekosa tuzo.

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(o) Tambulisha kishazi tegemezi na kishazi huru. **(alama 2)**

Wanafunzi waliofanya vyema walituzwa jana

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(p) Kamilisha methali ifuatayo. **(alama 2)**

Jitihada za mja

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SEHEMU D.ISIMU JAMII (ALAMA 10)

A : Ingia 46! Adams mbao Kenyatta, railways beba! 46 Adams mbao kenyatta, railways!
B : Namba nane ngapi?
A : Mbao ingia, blue.
B : Nina hashuu.
A : Blue Auntie.
B : Sina.
A : Ingia. 46 Adams mbao, kenyatta railways gari bebabeba.
C : Mimi sinako shirini. Chukuako tu kumi.
A : Dinga inakunywanga petrol mzee.
C : Kumi mingi.
A : Haaya ingia twende. Driver imeshona twende.

Maswali

(i) Eleza muktadha wa mazungumzo haya **AL.2**

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(ii) Taja sifa **nane** za lugha inayotumika katika sajili hii **AL.8**

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FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

KISWAHILI

TIME: 1¾ HOURS

PAPER 3

NAME…… ADM NO……

SIGN…… DATE;……

MAAGIZO

Jibu maswali manne ***pekee****.*

Jibu maswali yote kwenye nakala ulizopewa.

Majibu yote yaandikwe kwa lugha ya Kiswahili

Kwa Matumizi ya Mtahini Pekee

Swali	Upeo	Alama
1	20	
2	20	
3	20	
4	20	
	Jumla	

Jibu maswali yote kwenye nakala ulizopewa.

Ushairi

1. SHAIRI 'A'.

Umekata mti mtima
Umeangukia nyumba yako
Umeziba mto hasira
Nyumba yako sasa mafurikoni
Na utahama
Watoto Wakukimbia

Mbuzi kumkaribia chui
Alijigeuza Panya
Akalia kulikuwa na pala
Kichwani
Mchawi kutaka sana kutisha
Alijigeuza Simba
Akalia na risasi kichwani

Jongoo kutaka sana kukimbia
Aliomba miguu elfu
Akaachwa na nyoka

Hadija wapi sasa yatakwenda
Bwanako kumpa sumu ?
Hadija umeshika nyoka kwa mkia
Hadija umepitia nyuma ya punda

SHAIRI 'B'

Piteni jamani, Piteni haraka
Nendeni, nendeni huko mwendako
Mimi haraka, haraka sina
Mzigo wangu, mzigo mzito mno
Na chini sitaki kuweka

Vijana kwa nini hampiti ?
Kwa nini mwanicheka kisogo ?
Mzigo niliobeba haupo.

Lakini umenipinda ngongo na
Nendako
Haya piteni ! Piteni haraka ! Heei !

Mwafikiri mwaniacha nyuma !
Njia ya maisha ni moja tu.
Huko mwendako ndiko nilikotoka

Na nilipofikia wengi wenu
Hawatafika.

Kula nimekula na sasa mwasema
Niko nyuma ya wakati
Lakini kama mungepita mbele
Na uso wangu kutazama
Ningewambia siti miaka
Mingi.

(a) Haya ni mashairi ya aina gani ? Toa sababu
(b) Washairi hawa wawili wanalalamika. Yafafanue malalamishi yao
(c) Onyesha jinsi kinaya kinavyojitokeza katika tungo hizi mbili
(d) Ni vipi Hadija :-
    (i) Amekata mti mtima ?
    (ii) Amepita nyuma ya Punda **(al.2)**
(e) Toa mifano 2 ya uhuru wa mashairi kwa kurejelea mashairi haya
(f) Kwa kurejelea shairi '**B**' eleza maana ya:-
    (i) Mzigo
(ii) Siri
(iii) Kula nimekula
    (iv) Niko nyuma ya wakati

2. ***Soma hadithi hii halafu ujibu maswali .***

Hapo zamani za kale, Mungu alituma wajumbe wawili waende duniani. Wajumbe hawa ni Kinyonga na Mjusi. Kwanza alimtuma Kinyonga na kumwagiza akaseme "wanadamu hamtakufa." Kinyonga alienda kwa mwendo wa kuduwaa, akasimama hapa na pale akila matunda ya miti. Kwa sababu ya hali hii alichelewa sana kufikisha ujumbe kwa binadamu.

Baada ya muda kupita, Mungu alimtuma Mjusi na ujumbe akaseme, "Mwanadamu sharti kufa." Mjusi aliunyanyua mkia akafyatuka pu! Mbio akawahi duniani kabla ya kinyonga kuwasili. Kwa haraka alitangaza agizo kuu, "Wanadamu sharti kufa!" Akarejelea haraka kwa Mungu. Baada ya muda kinyonga naye akafika duniana na kutangaza, "Wanadamu hamtakufa!" Wanadamu wakapinga mara na kusema, "La! Tumeshapata ujumbe wa Mjusi, wanadamu sharti kufa! Hatuwezi kupokea tena neno lako! Basi kulingana na neno la mjusi, wanadamu hufa.

Maswali

(a) (i) Hadithi hii huitwaje?

(ii) Toa sababu zako

(b) Eleza **sifa tatu** zinazohusishwa na ngano za fasihi simulizi katika hadithi hii

(c) Kinyonga ni mhusika wa aina gani?

(d) Hadithi hii ina umuhimu gani?

(e) Taja njia zozote **nne** za kukusanya kazi za fasihi simulizi

(f) **Tambulisha vipera hivi**:-

(i) Kula hepi

(ii) Sema yako ni ya kuazima

(iii) Baba wa Taifa

3. "Thank you. U mteja wa pekee, unajua kuthamini huduma nzuri unapopewa."

i) Fafanua muktadha wa dondoo hili. **(al.4)**

ii) Taja na ueleze mbinu mbili za kimtindo katika dondoo hili. **(al.4)**

iii) Kwa kurejelea hadithi ya "Kila Mchezea Wembe," Fafanua changamoto zinazowakumba watumiaji wa vileo kupita kiasi. **(al. 12)**

4. Kwa kurejelea mifano mbalimbali thibitisha namna ndoa katika tamthilia ya **Bembea ya maisha** zimemulika uhalisia wa jamii za kiafrika. **(alama20)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

MATHEMATICS

TIME: 2½ HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

121/1

MATHEMATICS

Paper 1

Time: $2^1/_2$ Hours

Kenya Certificate of Secondary Education (K.C.S.E)

INSTRUCTIONS TO THE CANDIDATES

- *Write **your name** and **index number** in the spaces provided above*
- *This paper contains two sections; **Section** 1 and **Section 11**.*
- *Answer all the questions in **section 1** and only **five** questions from **Section 11***
- *All workings and answers must be written on the question paper in the spaces provided below each question.*
- *Marks may be given for correct working **even if** the answer is wrong.*
- *Calculations and KNEC Mathematical tables may be used **EXCEPT** where stated otherwise.*
- *Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.*

FOR EXAMINERS'S USE ONLY

Section 1

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

Section 1I

Question	17	18	19	20	21	22	13	24	**Total**
Marks									

GRAND TOTAL

SECTION I (50 MARKS)

Answer all questions in this section in the spaces provided.

1. Without using a calculator ,evaluate

$\frac{3/4 + 1\,5/7 \div 4/7 \text{ of } 2\,1/3}{(1\,3/7 - 5/8) \times 2/3}$ Giving your answer as mixed fraction **(3mks)**

2. Two boys and a girl shared some money. The younger boy got $5/18$ of it; the elder boy got $7/12$ of the remainder and the girl got the rest. Find the percentage share of the younger boy to the girl's share. **(4mks)**

3. Three numbers, 1400,1960 and **n** have a G.C.Dand L.C.M of 70 and $2^2 \times 5^2 \times 7^2 \times 11$ respectively.Find the least possible value of **n** **(3mks)**

4. A bus starts off from Kitale at 9. a.m and travels towards Kakamega at a speed of 60km/hr. At 9.50 a.m, a matatu leaves Kakamega and travels towards Kitale at a speed of 60Km/h. How far from Kitale will the two vehicles meet? **(3mks)**

5. Find the equation of a straight line which is equidistant from the points **A**(2,3) and **B** (6,1) **(3mks)**

6. Simplify the expression completely **(3mks)**

$$\frac{12x^2 - 16x}{20 - 11x - 3x^2}$$

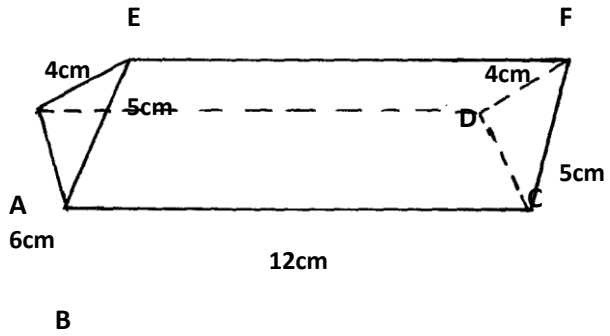
7. Given that $\sin\theta = \frac{2}{3}$ and θ is an acute angle, find without using tables $tan^2\theta + Cos^2\theta$. Give your answer as a mixed fraction. **(3mks)**

8. Solve for ***y*** in the equation below. **(4mks)**

$8(2^2)^y = 6(2^y) - 1$

9. Using a ruler, a pair of compasses only and (proportional) a set square, construct on the upper side division of line **BC**, a line **BD** such that $\angle$**DBC** = 37.5^o. Use the line **BD** to divide **BC** into 4 equal portions. **(3mks)**

10. Sketch the net of the solid below. **(2mks)**

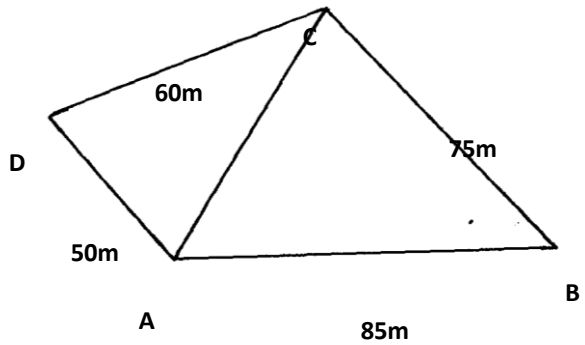


11. In a regular polygon, each interior angle is x^o and each exterior angle is $\left(\frac{x-36}{3}\right)^o$

1. Find angle X^o **(1mk)**

2. Find the number of sides of the polygon **(2mks)**

12. The figure below represents a plot of land **ABCD** such that **AB**= 85m, **BC** 75m **CD**= 60m **DA** = 50m and angle **ACB** = 90°. (not drawn to scale)



Determine the area of the plot, in hectares correct to two decimal places. **(4mks)**

13. An open rectangular box measures externally 32cm long, 27cm wide and 15cm deep. The box is made up of metal 1cm thick. If it has a mass of 1.5kg, what is the density of the box to 4 significant figures? **(3mks)**

14. Find the integral values of x which satisfy the following inequalities;

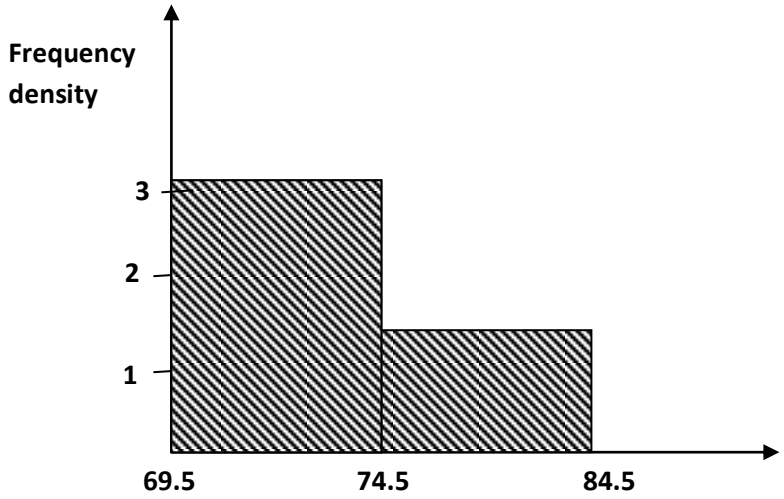
$2x + 3 > 5x - 3 > -8$ **(3mks)**

15. A Kenyan bank buys and sells foreign currency as shown below.

	Buying Ksh	Selling Ksh
1 US dollar ($)	63.00	63.20
1 UK pound (£)	125.00	125.95

A tourist arrived in Kenya with £ 9600 which he converted into Kshs at a commission of 5%. He later used ¾ of the money before changing the balance of dollars at no commission calculate ; to the nearest dollar, the amount he received. **(3mks)**

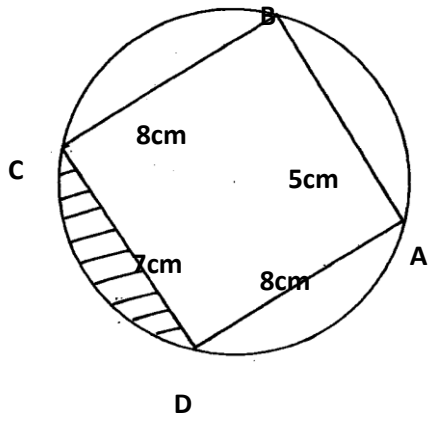
16. The histogram shown below represents the distribution of marks obtained in attest. The bar marked A has a height of 3.2 units while **B** has a height 1.2 units. If the frequency of the class represented by **B** is 6, find the frequency of the bar represented by **A**. **(3mks)**



SECTION II (50 MARKS)

Answer any five questions in this sections in the spaces provided.

17. The figure below (not drawn to scale) shows a quadrilateral **ABCD** inscribed in a circle. **AB** = 5cm, **BC** = 8cm, **CD** = 7cm and **AD** = 8cm. **AC** is one of the diagonals of length 10cm.



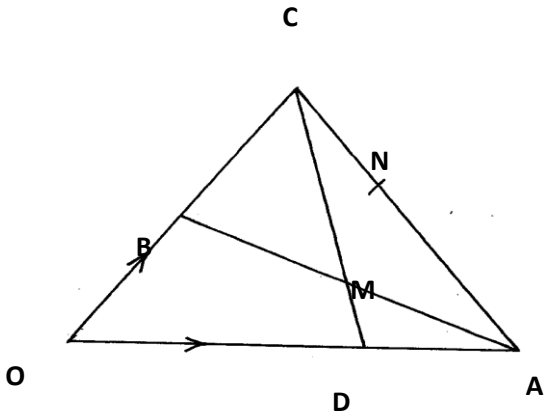
(a) Find the size of angle **ABC**. **(3mks)**

(b) Find the radius of the circle. **(2mks)**

(c) Hence, calculate the area of the shaded region. **(5mks)**

18. In the figure below $\overrightarrow{OB} = \mathbf{b}$, $\overrightarrow{OC} = 3\overrightarrow{OB}$ and $\overrightarrow{OA} = \underset{\sim}{\mathbf{a}}$

(e) Given that $\overrightarrow{OD} = 1/3\ \overrightarrow{OA}$ and $\overrightarrow{AN} = ½\ \overrightarrow{AC}$, $\overrightarrow{CD}$ and $\overrightarrow{AB}$ meet at **M**. Determine in terms of $\underset{\sim}{\mathbf{a}}$ and $\underset{\sim}{\mathbf{b}}$



(i) $\overrightarrow{AB}$ **(1mk)**

(ii) $\overrightarrow{CD}$ **(1mk)**

(f) Given that $\overrightarrow{CM} = \mathbf{k}\ \overrightarrow{CD}$ and $\overrightarrow{AM} = \mathbf{h}\ \overrightarrow{AB}$ determine the values of the scalars **k** and **h** **(5mks)**

(g) Show that **O**,**M** and **N** are collinear. **(3mks)**

19. Three variables p, q and r are such that p varies directly as q and inversely as the square of r.

a. When p = 18, q = 24 and r = 4.

Find p when q = 30 and r = 10. **(4mks)**

b. Express q in terms of p and r. **(1mk)**

c. If p is increased by 20% and r is decreased by 10% find:

i. A simplified expression for the change in q in terms of p and r. **(3mks)**

ii. The percentage change in q. **(3mks)**

20.

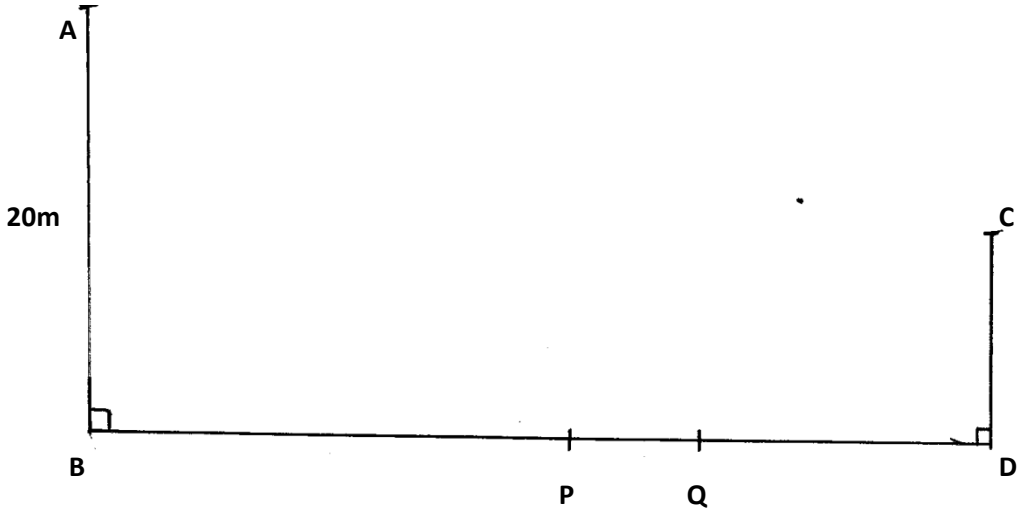
A circular lawn is surrounded by a path of uniform width of 7m. The area of the path is 21% that of the lawn.

(a) Calculate the radius of the lawn. **(4 marks)**

(b) Given further that the path surrounding the lawn is fenced on both sides by barbed wire on posts at intervals of 10 metres and 11 metres on the inner and outer sides respectively. Calculate the total number of posts required for the fence. **(4 marks)**

(c) Calculate the total cost of the posts if one post costs sh 105. **(2 marks)**

21. The diagram below represents two vertical watch – towers **AB** and **CD** on a level ground. **P** and **Q**are two points on a straight road **BD**. The height of the tower **AB** is 20m and road **BD** is 200m



A car moves from **B** towards **D**. At point **P,** the angle of depression of the car from points **A** is 11.3^{o}Calculate the distance **BP** to 4 significant figures. **(2mks)**

If the car takes 5 second to move from **P** to **Q** at an average speed of 36km/hr, calculate the angle of depression of **Q** from **A** to 2 decimal places. **(3mks)**

Given that **QC** = 50.9 cm, calculate

(i) The height of **CD** in meters to 2 decimal places; **(2mks)**

(ii) The angle of elevation of **A** from **C** to the nearest degree**.** **(3mks)**

22. The parents of acertain mixed secondary school decided to buy a school van worth Ksh. 900,000. Each student was to contribute the same amount of money. 50 students were transferred from the school; as a result each f the remaining students had to pay Ksh. 600 more.

(a) Find the original number of the students in the school. **(5mks)**

(b) Find the percentage change in contributions per student. **(3mks)**

(c) If the ratio of boys to girl in the school was 11: 7 find the amount money contributed by boys alone. **(2mks)**

23. Five members of 'SILK', a self-supporting enterprise Jane, Jepchoge, Esther, Mama Charo and Chepkoech were given a certain amount of money to share amongst themselves. Jane got 3/8 of the total amount while Jepchoge got 2/5 of the remainder. The remaining amount was shared equally among Esther, Mama Charo and Chepkoech each of which received Kshs. 6,000;

a. How much was shared among the five business women? **(3mks)**

b. How much did Jepchoge get? **(2mks)**

c. Jane, Jepchoge and Chepkoech invested their money and earned a profit of Kshs. 12,000. A third of the profit was left to maintain the business and the rest was shared according to their investments. Find how much each got. **(5mks)**

24. Onyango and Juma live 200km apart. One day, Onyango left his house at 7.00am and travelled towards Juma's house at an average speed of 30km/hr. Juma left his house at 7.30am on the same day and travelled towards Onyango's at an average speed of 40km/hr.

(a) Determine:-

i. The time they met. **(2mks)**

ii. The distance from Onyango's house where the two met. **(2mks)**

iii. How far was Onyango from Juma's house when they met? **(2mks)**

(b) The two took 15 minutes at the meeting point and then travelled to Juma's house at an average speed of 20km/hr. Find the time he arrived at Juma's house**.** **(2mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

MATHEMATICS

TIME: 2½ HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

121/2

MATHEMATICS

PAPER 2

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

1. *Write your **name** and **indexnumber** in the spaces provided at the top of the page.*
2. *The paper contains two sections; section I and II.*
3. *Answer **all** the questions in section I and any five questions from section II.*
4. *All answers and working **Must** be written on the question paper in the spaces provided below each question.*
5. *Non- programmable silent electronic calculators and **KNEC** mathematical tables may be used except where stated otherwise.*
6. *Mark may be given for correct working even if the answer is wrong. .*

For Examiners Use Only

Section I

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

Section II **GRAND TOTAL**

Question	17	18	19	20	21	22	23	24	Total

SECTION I (50 MARKS)

Answer all questions in this section in the spaces provided.

1. Use logarithms in all steps to evaluate. **(4mks)**

$$\frac{2.53^2 \, x 83.45}{\sqrt{0.4562}}$$

2. By using completing square method, solve for x in $4x^2 - 3x - 6 = 0$ **(3mks)**

3. Make **p** the subject in $T = \sqrt[3]{\frac{p^2 + n}{m^2}} + R$ **(3mks)**

4. If $\frac{\sqrt{14}}{\sqrt{7}-\sqrt{2}} - \frac{\sqrt{14}}{\sqrt{7}+\sqrt{2}} = a\sqrt{7} + b\sqrt{2}$

Find the value of **a** and **b** where **a** and **b** are rational numbers. **(3mks)**

5. (a) Find the first three terms in ascending powers of x of $(2 - x)^5$ **(1mk)**

(b) Hence find the value of the constant **k**, for which the coefficient of $\boldsymbol{x}$ in the expansion of $(k + x)(2 - x)^5$ is -8 **(2mks)**

6. **OA** $= \underset{\sim}{3}i + 4\underset{\sim}{j} - 6\underset{\sim}{k}$ and **OP** $= \underset{\sim}{j} + 15\underset{\sim}{k}$. **P** divides **AB** in the ratio $3 : -2$. Write down the coordinates of **B**. **(3mks)**

7. Simplify **(3 marks)**

$$\frac{p^2 - 2pq + q^2}{p^3 - pq^2 + p^2q - q^3}$$

8. Find the relative error in the area of a parallelogram whose base is 8cm and height 5cm. **(3mks)**

9. (a) Find the inverse of the matrix $\begin{pmatrix} 4 & 3 \\ 3 & 5 \end{pmatrix}$ **(1 mark**

(b) Hence solve the simultaneous equation using the matrix method **(2 marks)**

$4x + 3y = 6$

$3x + 5y = 5$

10. A straight line L_1 has its X intercept a = -3 and its y-intercept b = 5.

Write the equation of L_1 in the form $\frac{x}{a} + \frac{y}{b} = 1$ $(1mks)$

Find the equation of another line L_2 which passes through (1, -2) and is perpendicular to L_1 **(3mks)**

11. Use reciprocals, squares and square root tables only to evaluate **(3mks)**

$$\frac{2}{(0.5245)^2} - \frac{5}{\sqrt{363.4}}$$

12. Using a ruler and a pair of compasses only construct triangle ABC such that BC=6cm, <ABC=75^o and BCA=45^o. Drop a perpendicular to BC from A to meet BC at O hence find the area of triangle ABC

13. (3mks)

14. A two digit number is such that the difference between the ones digit and the tens digit is 2. If the two digits are interchanged, the sum of the new and the original number is 132. Find the original number **(3mks)**

15. A quantity P varies partly as the cube of **Q** and partly varies inversely as the square of **Q**. when **Q** = 2, **P** = 108 and when **Q** = 3, **P** = 259. Find the value of **P** when **Q** = 6. **(3mks)**

16. Solve for *y* in the following equation below: **(4mks)**

$\log_4 y + \log_y 4 = 2$

17. Obtain the values of *x* for which the matrix is singular **(3mks)**

$$\begin{pmatrix} x^3 & x \\ 1 & 1 \end{pmatrix}$$

SECTION II (50 MARKS)

Answer any five questions in this sections in the spaces provided.

18. The table below shows income tax rates.

Monthly taxable income	Rate of tax(Ksh/£)
1 – 435	2
436 – 870	3
871 - 1305	4
1306 – 1740	5
Excess over 1740	6

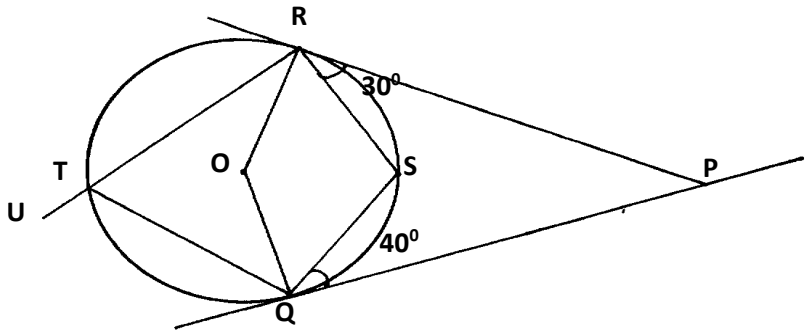
An employee earns a monthly basic salary of sh. 30,000 and is also entitled to taxable allowances amounting to Ksh. 10,480.

(a) Calculate the gross income tax **(4mks)**

(b) The employee is entitled to a personal tax relief of Ksh. 800 per month. Determine the net tax**.(2mks)**

(c) If the employee received a 50% increase in his total income, calculate the parentage increase on the income tax. **(4mks)**

19. In the figure below, **O** is the centre of the circle. **PQ** and **PR** are tangents to the circle at **Q** and **R** respectively. $\angle$**PQS** = 40 and $\angle$**PRS** = 30^0. **RTU** is a straight line.



Calculate by giving reasons

(a) $\angle$**QRS** **(2mks)**

(b) $\angle$**RTQ** **(2mks)**

(c) $\angle$**RPQ** **(2mks)**

(d) Reflex $\angle$**QOR** **(2mks)**

(e) $\angle$**TRO** given that **TR** = **TQ** **(2mks)**

20. Three darts players Jane, Kelly and Brony are playing in a completion the probability that Jane, Kelly and Brony hit the bull's eyes is $^1/_5$, $^2/_5$ and $^3/_{10}$ respectively.

(a) Draw a probability tree diagram to show all the possible outcomes for the players. **(4mks)**

(b) Calculate the probability that :

Jane or Brony hit the bull's eye. **(2mks)**

All the three fail to hit the bull's eye. **(2mks)**

Only two fails to hit the bull's eye. **(2mks)**

20. Three towns **X, Y** and **Z** are such that **X** is on a bearing of 120^0 and 20km from **Y.** Town **Z** is on a bearing of 220^0 and 12cm from **X**

(a) Using a scale of 1cm to represent 2km, show the relative position of the places (3mks)

(b) Find;

(i) The distance between **Y** and **Z** **(2mks)**

(ii) The bearing of **X** from **Z** **(1mk)**

(iii) The bearing of **Z** from **Y** **(1mk)**

(iv) The area of the figure bounded by **XYZ** **(3mks)**

21. The fourth, seventh and sixteenth term of an arithmetic progression are in geometric progression. The sum of the first six terms of the arithmetic progression is 12.

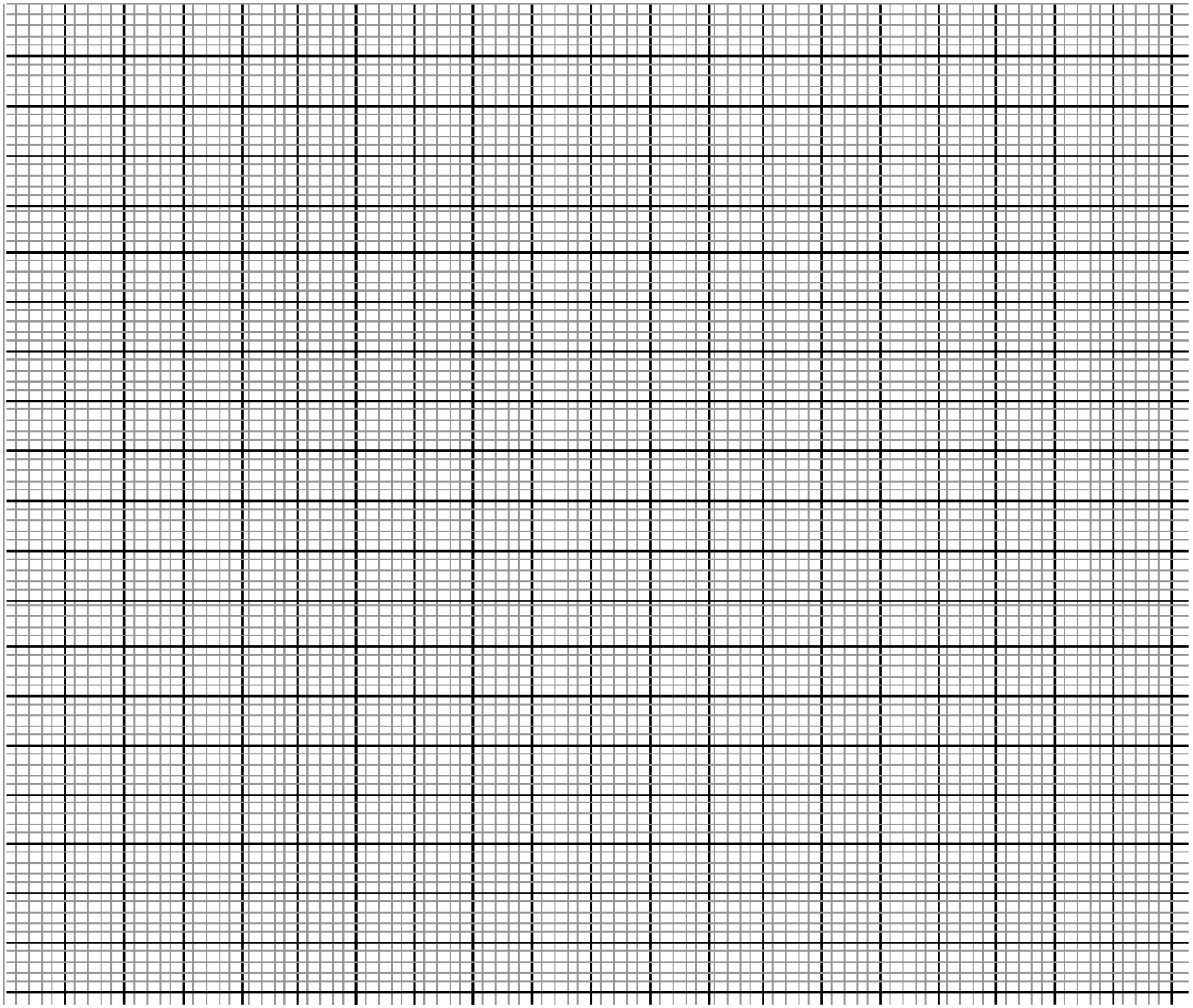
Determine the

- First term and the common difference of the arithmetic progression. **(6mks)**

- Common ratio of the geometric progression. **(2mks)**

- Sum of the first six terms of the geometric progression. **(2mks)**

22. Draw the graph of $y = 2x^2 - 3x - 5$ taking the values of x in the interval $-2 \leq x \leq 4$. (5mks)



(c) Use the graph in to solve the equation $2x^2 - 3x - 5 = 0$ **(2mks)**

(d) Using a suitable straight line, solve the equation $2x^2 - 5x - 3 = 0$ **(3mks)**

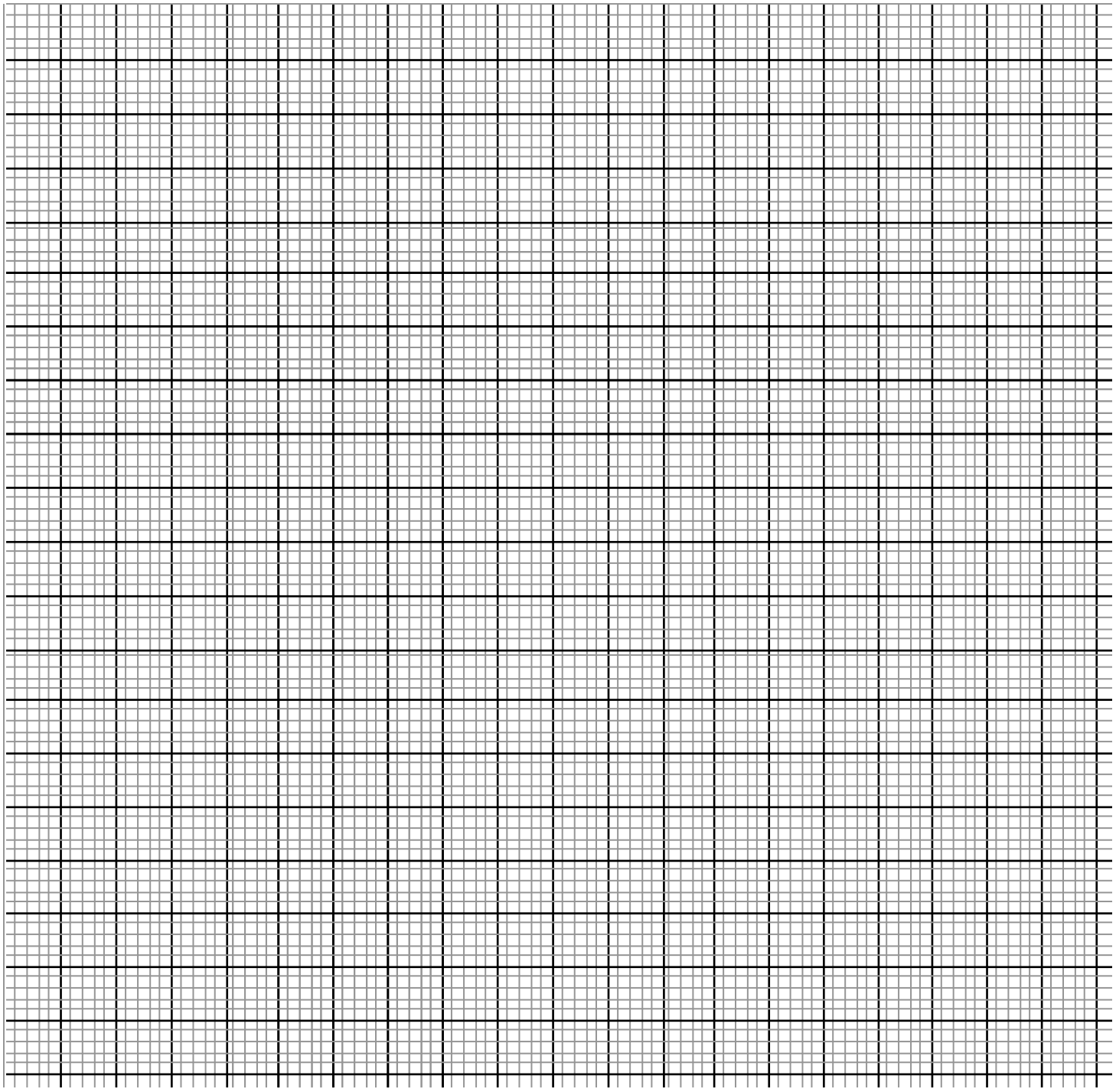
23. Draw the quadrilateral with vertices at **A** (-6,-1) **B** (-6,-4) **C**(3,-7) and **D** (3,2).

a) On the same grid draw the image of **ABCD** under enlargement centre (0,-1) scale factor $^1/_3$ label the image $\mathbf{A^1\ B^1\ C^1\ D^1}$ **(3mks)**

b) Draw $\mathbf{A^{11}B^{11}C^{11}D^{11}}$ the image of $\mathbf{A^1\ B^1\ C^1\ D^1}$under rotation of +ve 90^0 about (1,0) **(2mks)**

c) Draw $\mathbf{A^{111}B^{111}C^{111}D^{111}}$ the image of $\mathbf{A^{11}\ B^{11}\ C^{11}\ D^{11}}$under a reflection in the line y-x = **0 (2mks)**

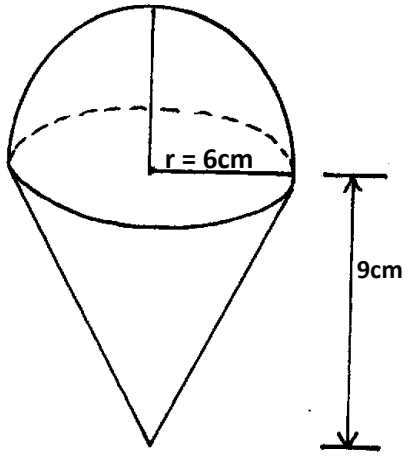
d) Draw $\mathbf{A^{1V}B^{1V}C^{1V}D^{1V}}$ the image of $\mathbf{A^{111}\ B^{111}\ C^{111}\ D^{111}}$under translation $\begin{pmatrix}2\\3\end{pmatrix}$ and write the co-ordinate of the final image. **(3mks)**



24. The volume of two similar solid cylinders are $4096cm^3$ and $1728cm^3$.

(a) If the curved surface area of the smaller one is $112cm^2$. Find the height of the larger cylinder if the radius is 7cm. **(4mks)**

b) The diagram below represents a solid made up of a hemisphere mounted on a cone. The radius of the hemisphere and cone are each 6cm, and the height of the cone is 9cm.



Calculate the volume of the solid. Take $\pi = \frac{22}{7}$ **(6mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

ENGLISH

TIME: 2 HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

101/1

ENGLISH

Paper 1

(Functional and Oral Skills)

2 Hours

INSTRUCTIONS TO CANDIDATES

1. *Write your name and the date in the spaces provided*
2. *Answer all the questions in this paper in the spaces provided*

Question	**Score**
20 marks- Functional writing	
10 marks- Cloze test	
30 marks- Oral skills	
Total marks 60	

1. You are the secretary of ***Umoja Faith Church Youth Group.*** The group is planning to hold a meeting on 16th August 2023 whose main agenda will be the Mission Outreach and initiating income generating activities. The constitution stipulates that there must be a 21-day notification of the meeting.

(a) Write a notice of the meeting that will be sent to the members. **6 marks**

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(b) During the meeting, 8 members were present, 3 including the treasurer sent apologies and the whereabouts of 2 members were unknown. The youth pastor attended the meeting. Apart from the main issues, members raised some matters from the previous meeting. There were also some personal issues raised by some members.

Write down the minutes of the meeting**.** **14 marks**

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2. ***Read the passage below and complete each blank space with an appropriate word 10 marks***

Citizens used to i)…….. that political leaders would observe the principles of good governance simply ii)……they were expected to. iii)…….; it appears most leaders on the continent have replaced integrity with reckless impunity that has iv)…….. Africa in chaos. v)…….office are also supposed to be vi)…… to the people that entrusted them with the vii)……..of leading them. viii)……, the political elite in the continent see people as a means to an end. In many countries these days, Kenya included, politics has become the easiest way to make money. Electioneering is seen as an ix)……..with extremely lucrative returns when campaign loyalties are x)…….with appointments in the government of the day.

3. ***a) Read the following Ankole song and answer the questions that follow.***

Suck and I hide you, my gentle one
I dreamt that the hunt was at Buganga
Where, oh where, shall I put, my little baby?
lips? If I put you in a clump of grass, my gentle one
around
The hunters' thick club tears up the back
Suck and I hide you, gentle one
sounds
Where, oh where, shall I put you, my lovely little lips?
beloved?
If I put you by the wayside, gentle one
beloved If I put you in an anthill, my little baby
their nest, lovely little lips
little baby
my gentle one
When I am dead and gone, gentle one
belovedAnd wash them down with a little water, my little baby
you for whom the drum sounds
If I do not die, my little baby
Good things will be ours to enjoy, you for whom the drum sounds

Suck and I hide you, my beloved
I dream that the hunt was at Ngarama
Where, oh where, shall I put you, my lovely little
The hunters' rough dog will come sniffing
Suck and I hide you, for whom the drum
Where, oh where, shall I put you, my
Passers-by will take you with them, my
The ants will enclose you in
Suck and I hide you,
Suck and I hide you,
Feed on little blades of grass like cow, my
That's what raises orphans,

(a) Identify aspects of oral performance that make this song easy to remember? **2 marks**

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(ii)In what ways would this song be made interesting to listen to? **2 marks**

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(iii)How would you perform the last two lines of the above song? **(2 marks)**

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b) *Study the genre below and answer the questions that follow*

I have a wife everyone she bears has a bead

1. Identify the genre under which the above item falls. **1 mark**
2. Assuming you were to perform this genre, what will you do before the presentation?

1mark

3. How will (ii) above assist you as a presenter? **1mark**

c) *Identify the silent letters in the words below* **3marks**

i) Shepherd …….

ii) Rendezvous ……

iii) Epistle ……

d) *Write another word that has the same pronunciation as the following words* **3marks**

(a) Mark ……..

(b) Broach ……

(c) Proof ……..

e) *Underline the stressed the syllables in the highlighted words* **2 marks**

1. We have to *relocate* these people

2. The security officer will *punish* you if you come late.

f) *Indicate whether the following sentences have a falling or a rising intonation.* **2 marks**

(a) A stitch in time saves nine

(b) Do you like tomatoes or not.

g) Jaramba's son, Mariapa, was really enthusiastic to go for a party with his friends at Carnivore. He had been invited to a friend's birthday party. He had to get permission from the father first in order to attend. However, Mariapa failed to convince his father because of his approach and language. What could have been the weaknesses in his negotiation skills? **5 marks**

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h) *Read the conversation below between Audrey, a student, and the school secretary then answer the questions that follow.* **6 marks**

Audrey: Hallo. Good morning.
Secretary: Hallo. Who is on the line and what do you want?
Audrey: I am a Form 4Y student and I have been away from school for three days now. May I speak to the Principal?
Secretary: The Principal is not in the office now.
Audrey: Could I please leave a message for him?
Secretary: Oh, please, don't you have his cellphone number?
Audrey: No madam, since it is official, kindly take down the…
Secretary: Excuse me, young girl, I am too busy for this idle chat.
Audrey: I am sorry but it is very urgent, madam.
Secretary: (*without a pen or paper)* Go ahead and you better be quick.
Audrey: Thanks for the attention

1. *Identify the weaknesses in the secretary's telephone conversation sk**ills.*** ***3marks***

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(ii)What should she do to improve on this? ***3marks***

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FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

ENGLISH

TIME: 2½ HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

(Comprehension, Literary Appreciation and Grammar)

KENYA CERTIFICATE OF SECONDARY EDUCATION (KCSE)
ENGLISH

Instructions to candidates

(a) Write your name and index number in the spaces provided at the top of this page.

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

(c) Answer ALL the questions in this question paper.

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

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

(g) Candidates must answer all the questions in English.

For Examiner's Use Only

Question	Maximum Score	Candidate's Score
1	20	
2	25	
3	20	
4	15	
	TOTAL SCORE	

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

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

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

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

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

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

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

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

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

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

Adopted from Sunday Nation December 8th 2013.

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

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

(2 marks)

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

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

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

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

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

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

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

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

1. irk their captors

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2. dissidence

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3. stirring controversy

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2. <u>FATHERS OF NATIONS</u> (25mks)

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

'Yes, I did,' he answered.

'Then you saw the letter from AGDA, didn't you? I will return to it shortly. First tell me this: what other items did you see in your brief case?' 'I saw a copy of way Omega, the development strategy that Nobel laureates have crafted to end Africa's misery, and that Africa heads of state are now expected to adapt at their summit. 'Go on.'

'I also saw a copy of Path Alpha, the development strategy that AGDA believes is a superior alternative to Way Omega, and that it hopes to slip in to replace Way Omega. 'Good. AGDA wants you to be fully familiar with both of those documents. Continue.'

'I also saw some leaflets, pamphlets and brochures from AGDA.' 'Skip those. What else?'

'Well, I then saw this mobile phone which I am using right now.' 'Excellent. Keep that mobile phone on at all times, day and night, rain or shine. From now on, I will be calling you often, even unexpectedly, but only hotel phone, it is completely secure, which means I can talk to you on it freely.

'So, you will tell me your real name now?' Pastor Chiamaka asked. 'My real name, my real name- why?' Shouted the caller, angry all of a sudden. 'Well, 'why?' Pastor Chaimaka shouted back, also angrily, answering fire with fire. 'If I don't have your real name, how can I even begin to ask for you were a need to do so arise?'

'Were a need to do so arise, I would contact you, ''the caller told him. 'Ah, you can contact me, but I can't contact you? What is the matter? Are you afraid I might surpurise you?

'Shut your mouth!' Snapped the caller.

'What did you say?' Pastor Chiamaka asked.

(Extracted for Examination Purposes)

QUESTIONS.

1. Say what happens immediately before this excerpt. **(3mks)**

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2. What are the character traits of Pastor Chiamaka as brought out in this excerpt? **(4mks)**

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3. Identify and illustrate two stylistic techniques used in this excerpt. **(4mks)**

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4. 'Shut your mouth!' Snapped the caller. Change into indirect speech. **(1mk)**

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5. You will tell me your real name now. Add a question tag. **(1mk)**

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6. Discuss any two social concerns that are brought out in this excerpt. **(4mks)**

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7. From elsewhere in the text. Discuss how Chamaka critiques the government of the day. **(2mks)**

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8. What is Chamaka's Attitude towards the guide? **(1mk)**

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9. Explain the meaning of the following words as used in the excerpt. **(3mks)**

i. Familiar

ii. Misery

iii. Laureates

iv. Pamphlets

v. Brochures

3.***<u>Read the poem below and answer the questions that follow</u>***

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

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

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

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

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

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

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

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

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

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

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(f). Explain Two characteristics of the genre **above** **(2 marks)**

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

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

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

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

……

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

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

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

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

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

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

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

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

(iii) John has retired……private life.

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

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

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

(e)***<u>Explain the differences in meaning between the sentences in each of the pairs given below</u>***

(4 marks)

7. I saw parents in the school library

II, I saw “parents” in the school library

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I. His brother who lives in Lamu is a mechanic

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

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FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

ENGLISH

TIME: 2½ HOURS

PAPER 3

NAME…… ADM NO……

SIGN…… DATE;……

(CREATIVE COMPOSITION AND ESSAYS BASED ON SET TEXTS)

TIME: 2 ½ HOURS

INSTRUCTIONS

(a)*Answer three questions only.*

(b)Question one and two are compulsory

(c)In question one,choose one composition either a or b.In question 2, all the questions are compulsory.

1. Imaginative composition. **(20marks)**

Either:

a) Write a composition beginning:

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

Or

Write a story to illustrate the saying

"All that glitters is not gold"

2. The compulsory set text

FATHERS OF NATIONS

Effective leadership guarantees its people security and equitable distribution of resources and opportunities, discuss the irony of this statement basing your arguments on the novel **Fathers of nations** by **Paul B, Vitta** **(20mks)**

3. OPTIONAL TEXTS

Corruption molds suspicious leaders who will always work towards escaping punishment rather than working towards the progress of their nations. Using illustrations from ***The Samaritan*** by ***John Lara***, write a composition. **(20 marks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

CHEMISTRY

TIME: 2 HOURS

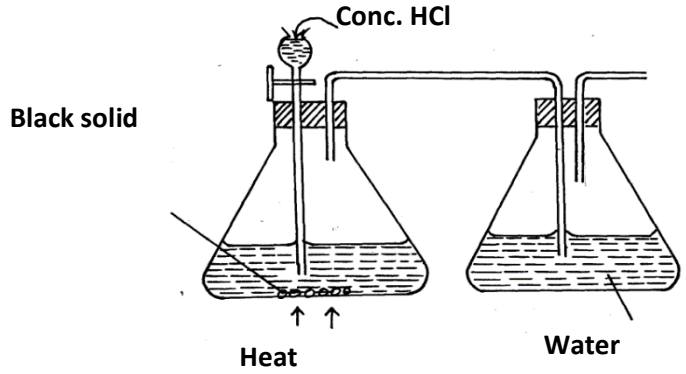
PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

Answer ALL questions in the spaces provided

1. The diagram shows an incomplete set-up for the laboratory preparation and collection of chlorine gas. Study it and answer the questions that follow.

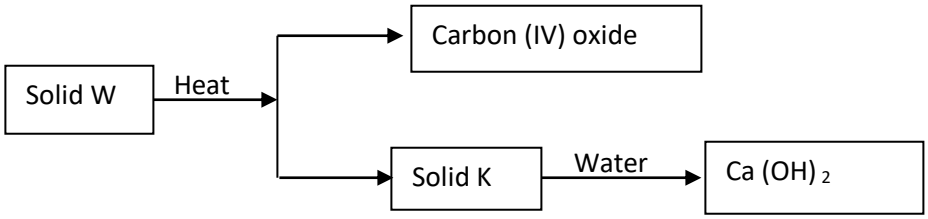


(a) Complete the set-up to show how dry chlorine gas is collected. **(2mks)**

(b) Name substance Q**.** **(1mk)**

2) Give a reason why it is possible to separate nitric (V) acid from sulphuric (VI) acid which is used one of the reagents in the preparation of nitric (V) acid**.** **(1mks)**

3). Study the scheme below and answer the questions that follow



Identify solids W and K **(2mks)**

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Write an equation for the formation of $Ca(OH)_2$ from solid K **(1mk)**

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Write an equation for the decomposition of solid W **(1mk)**

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4) The ions M^{3+} and N^{2-} have identical electronic arrangement. M is in period three.

i) Write the electronic arrangement of

M (1mk)

N(1mk)

ii) Write the formula of the compound formed when M and N combine. **(1mk)**

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5) Explain why there is a general increase in first ionization energy of elements in period three of the periodic table from left to right. **(1mk)**

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6When excess magnesium ribbon is burned in air, two products are formed.

i)identify the two products **(2mk)**

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ii) Write the two equations of the reactions that form the products in (i) **above** **(2mks)**

7. a) State the Boyle's law. **(1mk)**

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b) Calculate the pressure required to compress 12 liters of nitrogen gas at 1 atmosphere to give a volume of 4 liters. **(2mks)**

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8. An element W of atomic number 11 and an atom of element Y of atomic number 9 combine to form a compound.

a) Write the formula of the compound**.** **(1mk)**

b) State the type of bond present in the compound formed**.** **(1mk)**

c) Identify the type of structure formed. **(1mk)**

9). A compound has the following composition by mass:

Carbon =40%, hydrogen=6.7%, oxygen=53.3%

Given that the relative molecular mass of the compound is 180, determine its molecular formula (C=12, H=1, O=16.0) **(3mks)**

10). The melting point of phosphorous trichloride is -91^0C while that of sodium chloride is 801^0 C. In terms of structure and bonding, explain the difference in their melting points. **(3mks)**

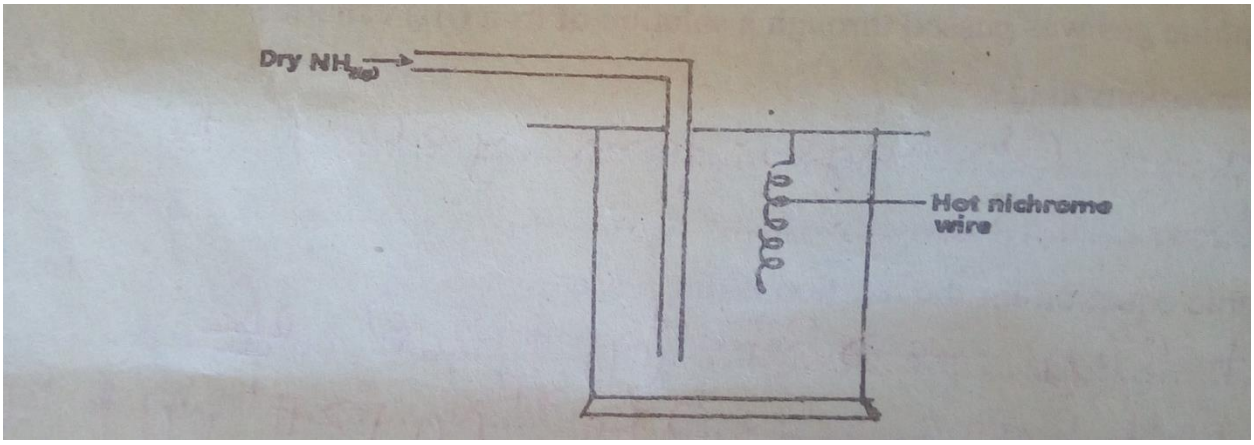
11) Explain why the following substances conduct an electronic current.

a)magnesium metal

(1mk)

b) Molten magnesium chloride**.** **(1mk)**

12). The apparatus below was a set-up to show the catalytic oxidation of ammonia. Study the diagram and answer the questions that follow.



i)write an equation for the reaction that takes place in the in the gas jar. **(1mk)**

……

…….

ii) Why is it necessary to have a hot nichrome wire in the gas jar? **(1mk)**

13). When 3.125g of a carbonate, MCO_3 was heated completely, the volume of carbon (IV) oxide evolved during the heating is $600cm^3$ at room temperature and pressure. Calculate the relative atomic mass of M. (Molar gas volume at r.t.p=$24dm^3$**)** **(3mks)**

14). A sample of river water was suspected to contain zinc and sulphate ions. Describe how the presence of zinc and sulphate ions can be established**.** **(3mks)**

15). Using dots (.) and crosses(x) to represent electrons, show bonding in carbon (II) oxide**(2mks)**

16). When a burning candle is put into a gas jar of sulphur (IV) oxide gas, it goes off but a burning magnesium ribbon continues to burn. Explain these observations. **(2mks)**

17). Starting with copper metal, describe how pure copper (ii) carbonate can be prepared in the laboratory **(3mks)**

18). State the observations that would be made when chlorine gas is bubbled through potassium bromide solution. **(1mk)**

b) Write the ionic equation for the reaction in (a) above **(1mk)**

19. An element M has two isotopes. $^{63}_{29}M$ And $^{65}_{29}M$. The relative atomic mass of the naturally occurring M is 63.55. Calculate the percentage abundance of each isotope**. (3mks)**

20. Distinguish between the terms deliquescent and efflorescent as used in chemistry**. (2mks)**

21 10 cm^3 of concentrated sulphuric(vi) acid was diluted to 100cm^3. 10 cm^3 of the resulting solution was neutralized by 36cm^3 of 0.1M sodium hydroxide solution. Determine the mass of the sulphuric (vi) acid that was in the concentrated acid**(S=32, H=1, O= 16) (3mks)**

22. a) Explain why potassium carbonate cannot be manufactured by the Solvay process. **(1mk)**

b) Write the equation for the reaction that takes place in the Solvay tower (Carbonator) **(1mk)**

c) State one commercial use of soda-ash **(1mk)**

23. What name is given to each of the following?

a) Ability of an element to attract electrons **(1mk)**

b) Types of forces that holds the atoms of Neon together **(1mk)**

24. Zinc sulphate was prepared by adding excess Zinc oxide to dilute sulphuric (vi) acid in a beaker. The mixture was wormed until no more effervescence occurred. Excess Zinc oxide was filtered and the filtrate evapourated and then cooled. Fine crystals were obtained.

a) Write an equation for the above reaction **(1mk)**

b) Why was excess zinc oxide used **(1mk)**

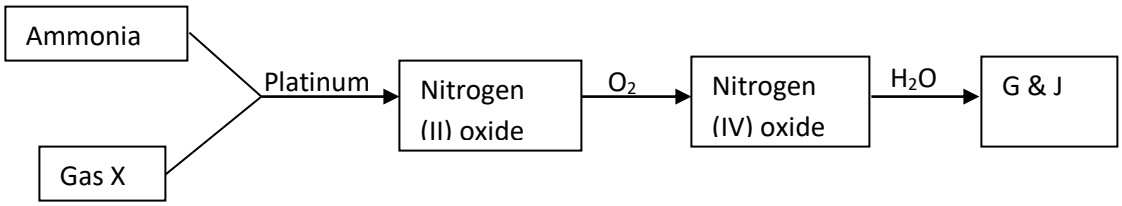
c) How would you know that the reaction is over **(1mk)**

25. Hydrogen sulphide was passed through a solution of Iron (III) chloride

i) State the observation made **(1mk)**

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

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



Identify gas X **(1mk)**

Write an equation for the reaction between ammonia and gas X **(1mk)**

Write an equation to show the formation of G and J **(1mk)**

27 All apparatus used during preparation nitric (V) acid are made of glass. Give a reason. **(1mks)**

28. Sulphur (IV) oxide gas was bubbled through acidified potassium chromate (VI) solution and Iron (III) Sulphate solution chromate. Explain the observations made in each case.

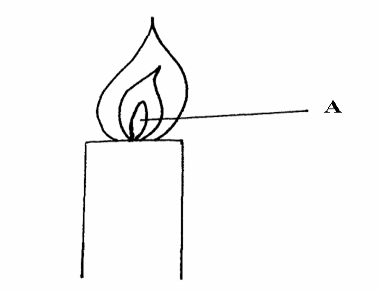
(i) With Potassium Chromate (VI) solution. **(1 ½ mk2)**

(ii) Iron (III) Sulphate solution **(1 ½ mks)**

29.3.22g of hydrated Sodium Sulphate, $Na_2SO_4{}^{o}X\ H_2O$ were heated to a constant mass of 1.42g, determine the value of X in the formula. (Na = 23, S = 32, O = 16, H=1). **(2 mks)**

30. 20 cm^3 of 2 M Sulphuric (IV) acid reacted completely with 3.2 g of WOH (O=16, H=1) Calculate the R.A.M of W in the formula WOH. **(3 mks)**

31) The figure below shows part of non-luminous flame.



(a) (i) Describe an experiment that would confirm that region labeled A is not suitable for heating. **(1 ½ mks)**

(ii) Explain why luminous flame produce light and soot. **(1 ½ mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

CHEMISTRY

TIME: 2 HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

CHEMISTRY

233/2

TIME: 2 HOURS

CHEMISTRY PAPER 2 (THEORY)

INSTRUCTIONS TO THE CANDIDATES

- *Write your name, adm number and class in the space provided.*
- *Answer ALL the questions in the spaces provided.*
- *All working steps MUST be clearly shown, where necessary*
- *Candidates should check the question paper to ascertain that all the pages have been clearly indicated and no question is missing.*

Answer All the questions

1. Hydrogen can be prepared by reacting zinc with dilute hydrochloric acid.

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

……

(b) Name an appropriate drying agent for hydrogen gas. **(1mk)**

……

(c) Explain why copper metal cannot be used to prepare hydrogen gas. **(2mks)**

……

……

……

(d) Hydrogen burns in oxygen to form an oxide.

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

……

(ii) State **two** precautions that must be taken before the combustion begins and at the end of the combustion. **(2mks)**

……

……

(e) Give **two** uses of hydrogen gas. **(2mks)**

……

……

f) When zinc is heated to redness in a current of steam, hydrogen gas is obtained. Write an equation for the reaction. **(1mk)**

……

……

g) Element **Q** reacts with dilute acids but not with cold water. Element **R** does not react with dilute acids. Elements **S** displaces element **P** from its oxide. **P** reacts with cold water. Arrange the four elements in order of their reactivity, starting with the most reactive. **(1mk)**

……

……

2. (I) The number of protons, neutrons and electrons in atoms **A** to **F** are given in the table below the letters do not represent the actual symbol of the elements:-

Atoms	Protons	Neutrons	Electrons
A	3	4	2
B	9	10	10
C	12	12	12
D	17	18	17
E	17	20	17
F	18	22	18

Choose from the table the letters that represent:

(i) An atom of a metal ..... **(1mk)**

(ii) A neutral atom of a non-metal ..... **(1mk)**

(iii) An atom of a noble gas ..... **(1mk)**

(iv) A pair of isotopes ..... **(1mk)**

(v) A cation ..... **(1mk)**

(vi) Anion ……... (1mk)

(II) The grid below shows a part of the periodic table. The letters do not represent the actual symbols. Use it to answer the questions that follow:-

C								T
	K					U		
X	Y		M			Q	W	
J								Z

How do the atomic radius of element

(i) **X** and **M** compare. Explain. **(2mks)**

……

……

……

(ii) U and Q. Explain **(2mks)**

……

……

……

Which letter represent the most reactive metal. Explain. **(2mks)**

……

……

……

(i) Using crosses (**X**) to represent electrons, draw the atomic structure of element **Q** **(1mk)**

(ii) State the period and the group to which element **Q** belong **(2mks)**

Group ……

Period ……

(d) (i) The ionic configuration of element **G** is 2.8 **G** forms an ion of the type G^{-1}.

Indicate on the grid, the position of element **G.** **(1mk)**

(ii) To which chemical family does element **G** belong? **(1mk)**

……

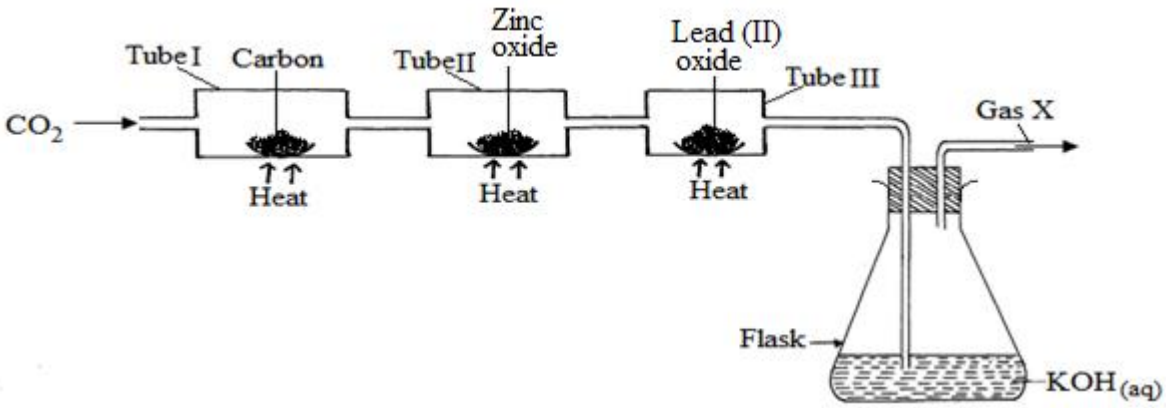
(iii) State **one** use of element **U** **(1mk)**

……

(iv) What is the nature of the compound formed between **K** and **U** **(1mk)**

……

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



(b) (i) Name Gas **X** …… **(1mk)**

(ii) State the effect of releasing gas **X** to the environment **(1mk)**

……

……

……

(c) Write down equations for the reactions taking place in;

(i) Tube **I** **(1mk)**

……

(ii) Tube **II** **(1mk)**

……

(iii) Flask **(1mk)**

……

(d) State the observation made in tube **III** **(1mk)**

……

……

(e) Write down an equation for the reaction which could be used to generate Carbon (IV) Oxide for the above set up **(1mk)**

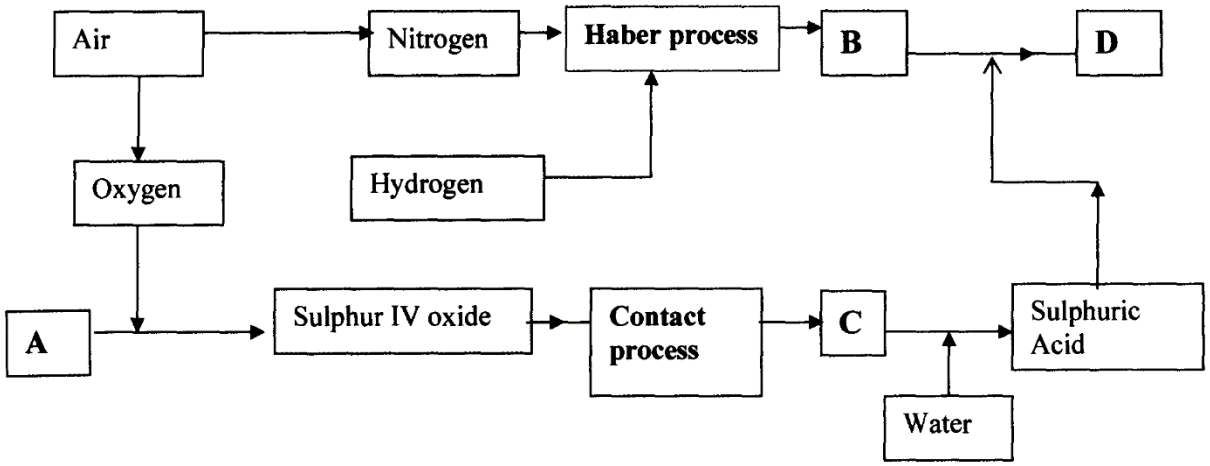
……

(e) Name the reagents used to generate gas **X** in the laboratory **(1mk)**

……

(f) Complete the diagram above to show how excess gas **X** can be collected **(1mk)**

4. The flow chart below illustrates two industrial processes, **Haber** process and the **Contact** process:



(a) (i) Give the name of the process by which air is seperated into oxygen and nitrogen **(1mk)**

……

(d) Apart from oxygen and nitrogen gases produced from process **(a)(i)** name **one** other gas produced**…… (1mk)**

(b) Name the substances represented by the letters **A, B, C** and **D** **(4mks)**

(i) A ……..

(ii) B ……..

(iii) C …….

(iv) D …….

(c) Name the catalysts used in:

(i) Haber Process **…….** **(1mk)**

(ii) Contact Process **…….** **(1mk)**

(d) Explain the role of the catalysts in both the Haber and the Contact processes **(1mk)**

……

……

(e) Write a chemical equation for the formation of compound **B** **(1mk)**

……

(f) Calculate the percentage by mass of the nitrogen present in compound **D** **(2 mks)**

(g) Give **one** major use of compound **D** **(1mk)**

……

……

5. (a) Two reagents that can be used to prepare chlorine gas are manganese (IV) oxide and concentrated hydrochloric acid.

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

……

(ii) Give the formula of another reagent that can be reacted with concentrated hydrochloric acid to produce chlorine gas **(1mk)**

……

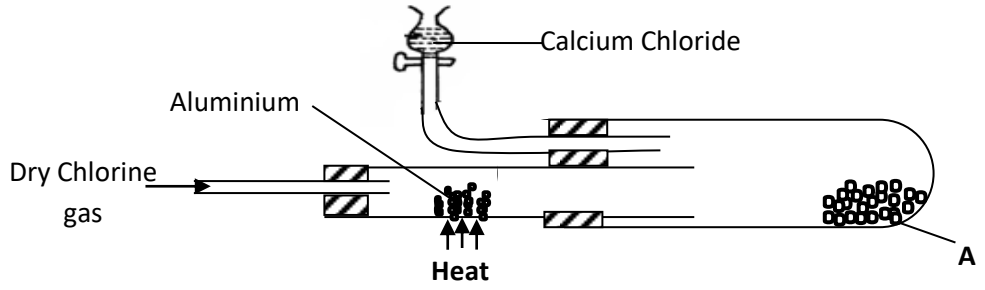
(iii) Describe how the chlorine gas could be dried and collected in the laboratory **(2 mks)**

……

……

……

(b) In an experiment, dry chlorine gas was reacted with aluminium as shown in the diagram below



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

……

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

……

(iii) State the function of the calcium chloride in the set-up above **(1mk)**

……

6. (a) Sulphur occurs naturally in two different forms called allotropes;

i) What are allotropes **(1mk)**

……

……

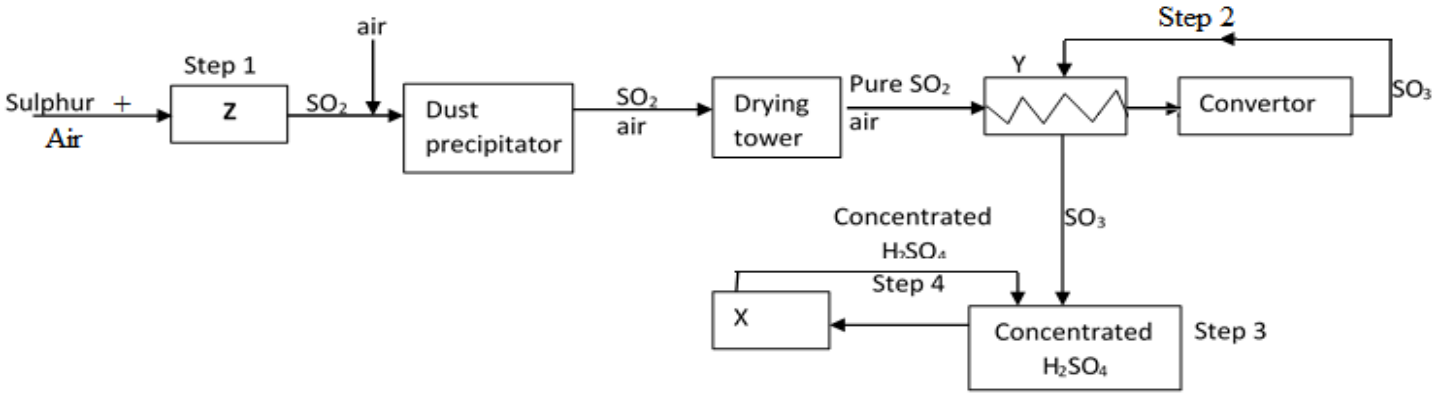
ii) The two allotropes of sulphur are stable at different temperatures, as shown in the equations below.

Rhombic sulphur $\underset{\text{below } 95.5^{o}}{\overset{\text{above } 95.5^{o}}{\rightleftharpoons}}$ monoclinic sulphur

Give the name to the temperature 95.5ºC **(1mk)**

……

b) below is a flow diagram for the contact process for manufacture of sulphuric acid(VI)



(d) Give the name of the chambers labelled (3mks)

Z ……

X ……

Y ……

ii) State the **three** conditions in the converter **(1mks)**

……

……

……

iii) Explain why the gases are passed though:

(c) The dust precipitator and drying tower **(1mk)**

……

II. The chamber labeled **Y** **(1mk)**

……

(iv) Write the balanced equations for the reactions in :

Step 2 **(1mk)**

……

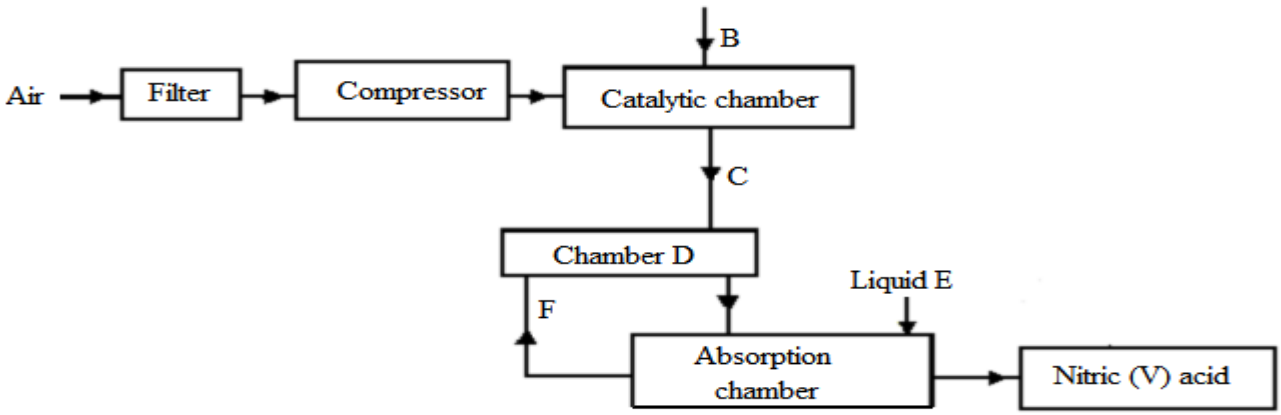
Step 3 **(1mk)**

……

Step 4 **(1mk)**

……

7. The following flow chart shows the industrial manufacture of Nitric (V) acid.



a) Identify substance **B, C, E** and **F**. **(4mks)**

(d) B …….

(e) C …….

(f) E …….

(g) F ……....

b) Describe what happens in the catalytic chamber. **(2mks)**

……

……

……

c) State what takes place in chamber **D.** **(1mk)**

……

d) 60 – 65% nitric (V) acid is produced in the absorption chamber. Describe how the acid can be concentrated.

(2mks)

……

……

……

e) State why nitric (V) acid is stored in dark bottles. **(1mk)**

……

……

f) Copper reacts with nitric (V) acid and not hydrochloric acid. Explain. **(1mk)**

……

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

CHEMISTRY

PAPER 3

CONFIDENTIAL

Each candidate will require the following

(a) About 150cm^3 solution H
(b) About 100cm^3 solution X
(c) About 100cm^3 solution N
(d) About 40cm^3 1M sulphuric (VI) acid
(e) About 1.0g solid Y
(f) About 1.2g solid F
(g) One 10ml measuring cylinder
(h) One burette
(i) One 25ml pipette and pipette filler
(j) Two conical flasks
(k) Two boiling tubes
(l) Four test tubes
(m) Glass rod
(n) Distilled water

Candidates should have access to the following

- 2M potassium chloride solution
- 2M calcium chloride solution
- 2M Sodium hydroxide solution
- 2M sodium chloride solution
- 2M ammonia solution
- Bromine water
- Acidified potassium manganate (VII) solution
- Universal indicator solution
- PH chart
- Burner

Supply with droppers

NB: Supply solution 3, 4, 5, 6, 7 and 8 with droppers.

NOTES

1) Solution H is prepared by weighing accurately 1.3g of potassium manganite (VII), dissolve in about 400cm^3 of distilled water and make the solution to 1 litre. The solution should be prepared one day before the practical is taken.

2) Solution N is prepared by dissolving 7.8g of ammonium iron (II) sulphate in 400cm^3 of 1M sulphuric (VI) acid and diluting the solution with distilled water to make 1 litre solution.

3) Solution X is prepared by measuring accurately 5cm^3 of fresh sample of 20 volume hydrogen peroxide, then dilute it with distilled water to make one litre solution.

4) 1M sulphuric (VI0 acid is prepared by measuring accurately 55cm3 of concentrated sulphuric (VI) acid, pour carefully into a beaker containing 400cm3 of distilled water then top up with more distilled water to make 1 litre solution.

5) Solid Y is prepared by mixing equal amounts of aluminium chloride and potassium chloride thoroughly.

6) Solid F is maleic acid.

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

CHEMISTRY

TIME: 2 ¼ HOURS

PAPER 3

NAME…… ADM NO……

SIGN…… DATE;……

233/3

CHEMISTRY

PAPER 3 / PRACTICAL
2¼ HOURS

INSTRUCTIONS TO CANDIDATES

(a) *Answer all questions in the spaces provided on the question paper*

(b) *You are not allowed to start working with the apparatus for the 1st fifteen minutes of the time allowed for this paper.This time is to enable you read through the question paper and make sure you have all the chemicals and the apparatus that you may need.*

(c) *All working must be clearly shown where necessary.*

(d) *Mathematical tables and electronic calculators may be used*

For Examiners Use Only

Question	Maximum score	Candidate's Score
1	20	
2	11	
3	09	
Total	40	

QUESTION 1 (**20 MARKS)**

You are provided with:

- Solution H which is potassium manganate (VII) solution.
- Solution X which is dilute solution of hydrogen peroxide.
- Solution N which is 0.02M ammonium iron (II) sulphate solution.

You are required to:

4. Standardize solution H using solution N.

5. Use the standardized solution H to determine the concentration of solution X.

Procedure 1

1. Fill the burette with solution H.
2. Pipette $25cm^3$ of solution N and transfer it into a conical flask.
3. Titrate solution N against solution H until a permanent pink colour just appears.
4. Record the results in table 1 below.
5. Repeat the titration two more times to complete the table.

(o) Table 1

	I	**II**	**III**
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution H used (cm^3)			

(3mks)

(p) Determine the average volume of solution H used. **(1mk)**

(q) Calculate;

3. The number of moles of solution N in $25cm^3$. **(2mks)**

4. The number of moles of solution H that reacted given the equation for the reaction is **(2mks)**

$MnO_4^-{}_{(aq)} + 5Fe^{2+}{}_{(aq)} + 8H^+{}_{(aq)} \longrightarrow Mn^{2+}{}_{(aq)} + 5\ Fe^{3+}{}_{(aq)} + 4H_2O_{(l)}$

5. The concentration of H in moles per litre. **(2mks)**

Procedure II

(c) Fill the burette with solution H.

(d) Using a clean pipette, place 25cm^3 of solution X into a conical flask.

(e) Add 10cm^3 of 1Msulphuric acid and shake well.

(f) Titrate using solution H until a permanent pink colour just appears.

(g) Record the reading in table II below.

(h) Repeat the titration two more times to complete the table.

Table II

(3mks)

	I	II	III
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution H used (cm^3)			

(a) Determine the average volume of solution H used. **(1mk)**

(b) Calculate;

1. The number of moles of solution H used. (**2mks)**

2. The number of moles of solution X in $25cm^3$ if the equation for the reaction is;

(2mks)

$$2MnO_4^{2-}{}_{(aq)} + 6H^+{}_{(aq)} + 5H_2O_{2(l)} \longrightarrow 2Mn^{2+}{}_{(aq)} + 8H_2O_{(l)} + 5O_{2(g)}$$

The concentration of solution X in moles per litre. **(2mks)**

QUESTION 2 (**11 MARKS)**

You are provided with the following;

(e) Solid Y

(f) Sodium chloride solution

(g) Potassium chloride solution

(h) Calcium chloride solution

You are required to identify the cations present in solid Y.

The following notes will assist in making the correct observations and inferences.

Cations are positively charged ions, majority of which are metal ions. Cations can be tested using one or a combination of the following methods;

(d) Flame tests

(k) Some cations burn with flames that have distinct colours.

(e) Carrying out precipitation reactions using the following;

- Sodium hydroxide
- Aqueous ammonia
- Anions such as CO_3^{2-}, SO_4^{2-}, Cl^- and SO_3^{2-}

Precipitates are formed as a result of formation of insoluble salts or metal hydroxides. The colour of the precipitate should be noted down when writing the observations. Incase a white precipitate is expected and not observed, then one should record that there is no white precipitate but NOT no observation.

It is important to note that hydroxide of zinc, lead and aluminium are amphoteric thus can react with sodium hydroxide which is alkaline. Another thing to note is that zinc hydroxide and copper (II) hydroxide dissolve in excess aqueous ammonia due to formation of complex ions.

Procedure

Carry out the tests below and record your observations and inferences in the spaces provided.

(b) Place all of the solid Y provided in a boiling tube. Add about $10cm^3$ of distilled water and shake well. Use about $2cm^3$ of the resulting solution to carry out tests (i)to (iii) below. Reserve the remaining portion for test (b).

Observations	Inferences
(1mk)	(1mk)

8. To

iTo the first portion, add aqueous sodium hydroxide dropwise until in excess.

Observations	Inferences
(1mk)	(1mk)

9. To the second portion, add aqueous ammonia dropwise until in excess.

Observations	Inferences
(1mk)	(1mk)

10. To the third portion, add about $1cm^3$ sodium chloride solution.

Observations	Inferences
(1mk)	**(1mk)**

(c) Procedure

Clean a glass rod and rinse it with distilled water. Dry the glass rod on a Bunsen burner flame. Allow it to cool. Dip it in a little sodium chloride solution and burn it strongly with a non-luminous Bunsen burner flame. Note the colour of the flame and record it in table III below. Clean the spatula thoroughly and repeat the procedure using each of the other solutions and complete table III.

7) Table III

Solution	Colour of flame
Sodium chloride	
Potassium chloride	
Calcium chloride	
Solution Y	

(2mks)

8) From table III, suggest the cation that could be present in solid

Y_____ (1mk)

QUESTION 3 (**9 MARKS)**

You are provided with solid F.

Procedure

Carry out the tests below using solid F. write the observations and inferences in the spaces provided.

Place all solid F in a dry boiling tube. Add about $15cm^3$ of distilled water and shake thoroughly. Use $2cm^3$ portions of the solution for tests (b) to (e) below.

Observations	Inferences
(1/2mk)	(1/2mk)

To the first portion add two drops of universal indicator and record the color and PH.

Observations	Inferences
1mk)	1mk)

3. To the second portion add a spatula and full of sodium carbonate.

Observations	Inferences
(1mk)	(1mk)

4. To the third portion add two drops of bromine water.

Observations	Inferences
(1mk)	(1mk)

5. To the fourth add three drops of acidified potassium manganate (VII)

Observations	Inferences
(1mk)	(1mk)

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

GEOGRAPHY

TIME: 2 ½ HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

INSTRUCTIONS.

Answer all the questions in the spaces provided.

1) What is desertification? **(2mks)**

……

……

b. State three negative effects of desertification. **(3mks)**

……

……

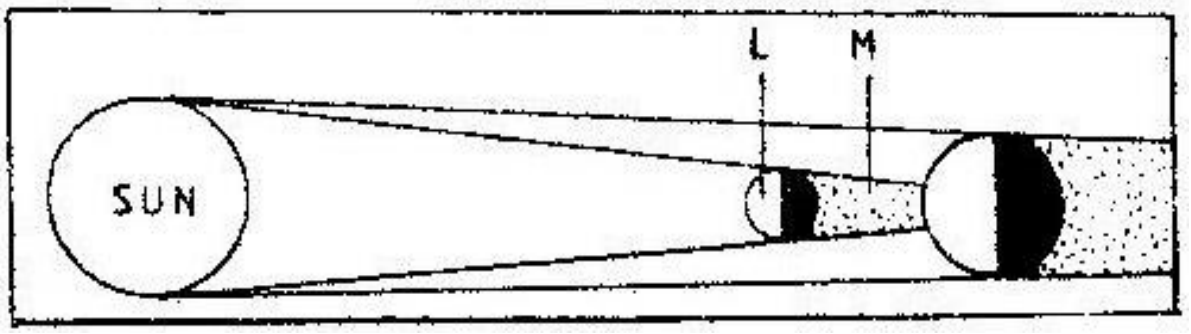
……

2) Describe the solar system. **(2mks)**

……

……

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



What type of an eclipse is represented by the diagram? **(1mk)**

……

Name the features marked L and M. **(2mks)**

……

……

……

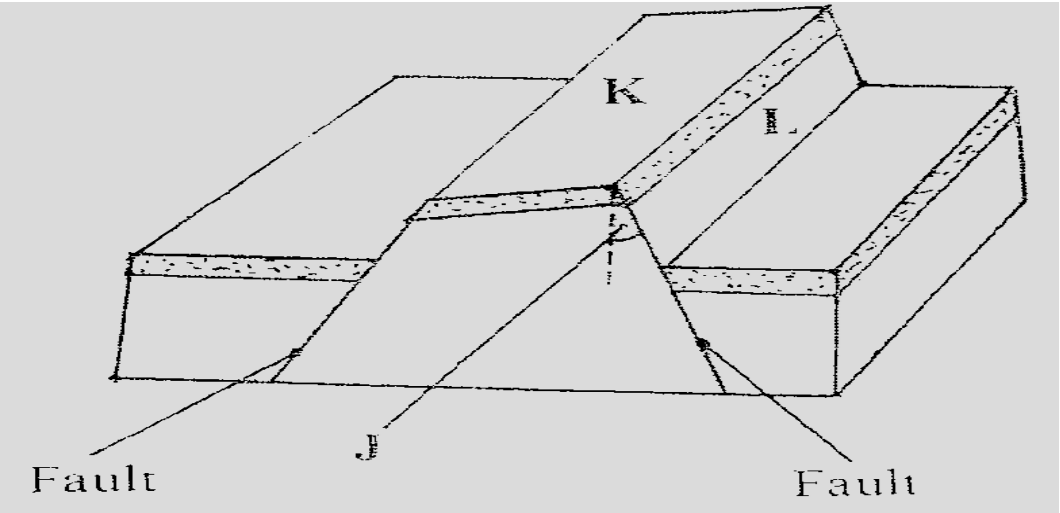
3) Identify two causes of earth movement. **(2mks)**

……

……

……

b. The diagram below shows some features formed as result of faulting.



i. Identify the angle marked J. **(1mk)**

……

ii. Identify the features marked K and L. **(2mks)**

……

……

4) Apart from water vapour, name two other substances that are suspended in the atmosphere.

(2mks)

……

……

b. Give two features that are considered when classifying clouds. **(2mks)**

……

……

……

6. Name one type of cloud that give rise to rainfall in the tropical regions. **(1mk)**

……

……

5) Give three causes of earthquakes. **(3mks)**

……

……

……

b. Name two major earthquake zones of the world. **(2mks)**

……

……

……

SECTION B

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

6) Study the map of Kitale 1:50,000 (sheet 75/3) provided and answer the following questions.

Identify two human made features found at the grid square 3319. **(2mks)**

Identify the altitude of the highest point in the area covered by the map. **(2mks)**

What is the magnetic variation of the map? **(1mk)**

i. Measure the distance of the dry weather road (C640) from the junction at point M(345142) to the junction at point N (416201) give your answer in kilometers. **(2mks)**

Draw a square 10cm by 10cm to represent the area enclosed by easting 36 and 46 and northings 13 and 23. **(1mk)**

On the square mark and name the following. **(4mks)**

(l) Forest

(m) Plantation

(n) River Naigameget

(o) Dry weather road (C640)

Describe the drainage of the area covered by the **map.** **(5mks)**

Identify two social services offered in Kitale municipality. **(2mks)**

Citing evidence from the map explain three factors that favour agricultural activities. **(6mks)**

Outline two factors that influence the development of drainage patterns. **(2mks)**

ii. Outline five characteristics of a river in its youthful stage. **(5mks)**

b. Describe the following processes of river erosion.

i. Attrition **(2mks)**

ii. Corrosion **(4mks)**

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

d. Your class is planning to carry out a field study of a river in its old stage.

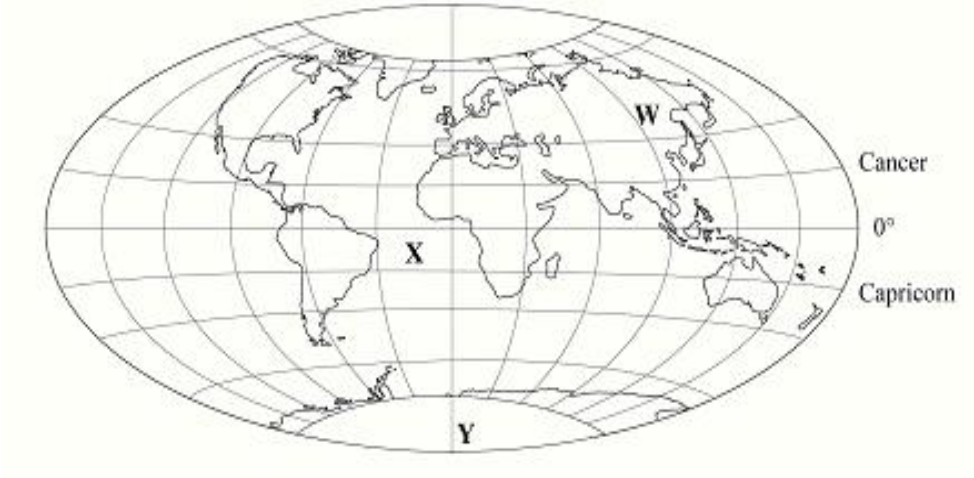
i. State three reasons why it would be necessary to pre-visit the area of study. **(3mks)**

ii. State three activities you would carry out to determine why deposition occurs at this stage. **(3mks)**

7) Name the first two planets of the solar system. **(2mks)**

b. Explain the origin of the earth according to the Nebula cloud theory. **(8mks)**

c. Use the map below to answer questions (c) (i)



i. Name:

The continent marked W. **(1mk)**

The ocean marked X **(1mk)**

The line of longitude marked Y. **(1mk)**

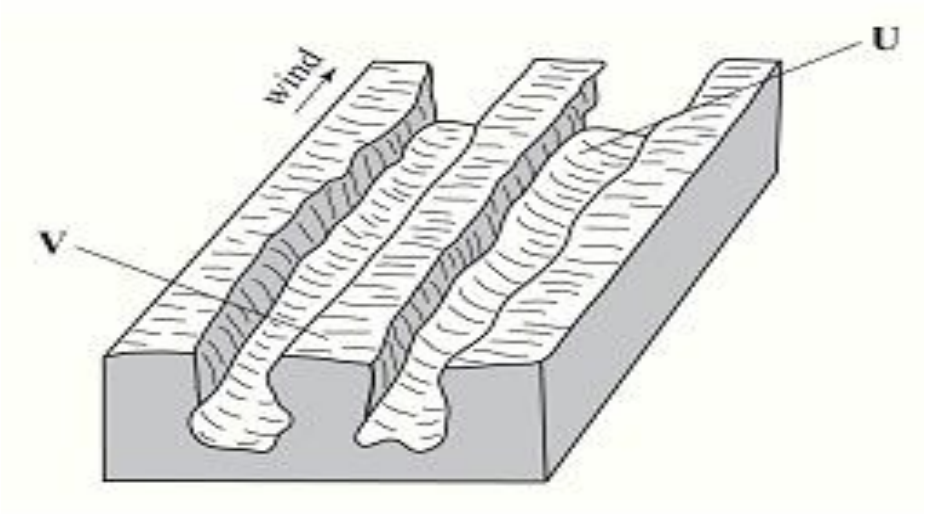
ii. Give two reasons why the earth has a spherical shape. **(4mks)**

iii. State four effects of the rotation of the earth on its axis. **(4mks)**

d. Describe the structure of the earth's crust. **(4mks)**

8) Name two major deserts found in Africa. **(2mks)**

ii. The diagram below represents features resulting from wind erosion in a desert. Use it to answer question a. (ii).



(c) Name the features marked U and V. **(2mks)**

(d) Describe three processes through which wind transports its load. **(6mks)**

(e) Using a well labeled diagram, describe how a barchans is formed. **(7mks)**

(f) Explain four ways in which desert features are significance to human activities. **(8mks)**

9) Name three types of faults. **(3mks)**

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

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

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

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

GEOGRAPHY

TIME: 2 ½ HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

INSTRUCTIONS.

Answer all the questions in the spaces provided.

1. a) Name three mining methods. **(3mks)**

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b) State three conditions that are necessary for the formation of petroleum. **(3mks)**

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2. a) List two factors that determine the distribution of forests in Kenya. **(2mks)**

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b) Give three economic uses of mangrove forest. **(3mks)**

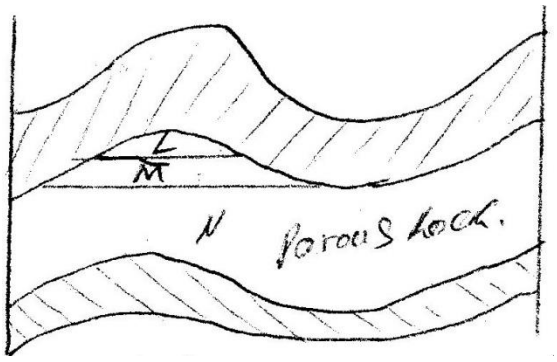
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3. The diagram below shows the occurrence of petroleum in the earth's crust. Use it to answer question (a).



Name the substance in the area labeled L, M and N. **(3mks)**

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Give two by products obtained when crude oil is refined. **(2mks)**

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4. Name five uses of soda ash. **(5mks)**

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5. State five factors that have led to the reduction of the area under forest on the slopes of Mt. Kenya. **(5mks)**

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6. Study the photograph below and use it to answer question (a)



(i) What evidence shows that this is a ground general – view photograph? **(2mks)**

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(j) Draw a rectangle measuring 12cm by 8 cm. **(1mk)**

(k) On the rectangle sketch and label the following features shown on the photographs. **(5mks)**

Planted crops

Tree stumps

Forest

Felled trees

The sky

(l) Describe the characteristics of the forest shown on the photograph. **(5mks)**

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b) Explain four measures being taken by the government of Kenya to control human encroachment on forested areas. **(8mks)**

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c) Give the differences between softwood forests in Kenya and Canada under the following sub-headings.

Tree harvesting **(2mks)**

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Marketing of forest products. **(2mks)**

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d) Explain four problems facing forestry in Kenya. **(8mks)**

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e) What is Agro forestry? **(2mks)**

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ii) Give four reasons why Agro forestry is encouraged in Kenya. **(4mks)**

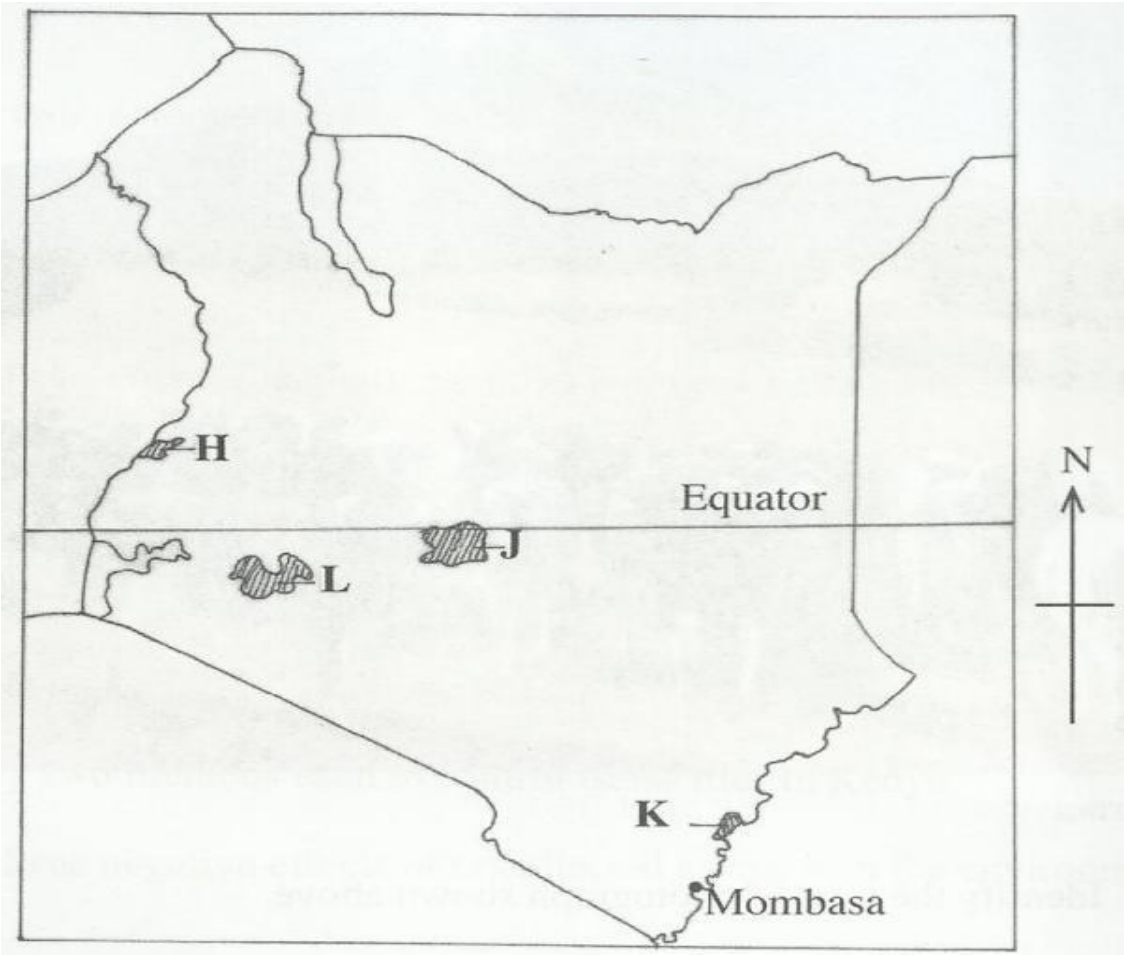
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iii) Use the map of Kenya below to answer questions.



Name the forest reserves marked H, J and K. **(3mks)**

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10) Explain four factors that favour the growth of natural forest in the area marked L. **(8mks)**

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iv) Explain two benefits of petroleum mining to economies of Middle East countries. **(2mks)**

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7. The table below shows the quantities of minerals produced in Kenya in tones between year 2001 and 2005. Use it to answer questions a(i) and (II)

Source economic survey 2006

Mineral/Year	2001	2002	2003	2004	2005
Soda ash	297,789	304, 110	352, 560	353, 835	360, 161
Fluorspar	11,885	85,015	80, 201	117, 986	26, 595
Salt	5,664	18,848	21,199	31,139	26,595
Others	6,093	7,000	4,971	6,315	8,972

(d) Calculate the average annual production of soda ash over the 5 years period. **(1 mk)**

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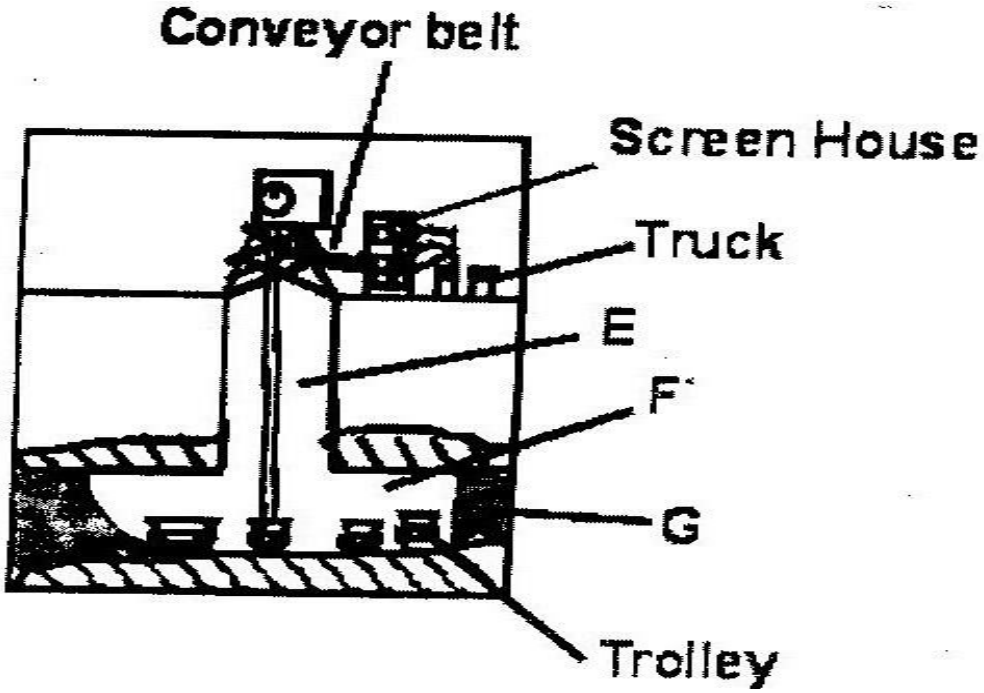
(e) Calculate the total mineral production for the year 2003. **(1mk)**

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b) The diagram below shows shaft mining.



(c) Name the part marked E, F, G. **(3mks)**

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(d) State three problems associated with shaft mining. **(3mks)**

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(p) Explain four ways in which gold mining has contributed to the economy of South Africa.

(8mks)

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(q) Explain three negative effects of mining on the environment**.** **(6mks)**

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FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

HISTORY &GOVERNMENT

TIME: 2 HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

SECTION A

Answer all the questions in these section

1) Name two southern cushites that inhabited Kenya during the pre-colonial **period** **(2mks)**

2) Give one way in which iron working helped in migration of Kenyan communities **(1mk)**

3) Apart from the Akamba name two other Kenyan community that participated in the long distance trade. **(2mks)**

4) Identify two benefits of dual citizenship **(2mks)**

5) Give two characteristics of the Kenyan **government** **(2mks)**

6) Outline one early mean of communication used by the Kenyan communities in pre-colonial **period** **(1mk)**

7) Give two strategic reasons that led to occupation of Kenya by the British **(2mks)**

8) Name one colonial governor who encouraged settlers farming in Kenya **(1mk)**

9) What was the main recommendations of Fraser commission of 1908 **(1mk)**

10) Give the main reason that that led tom formation of early political parties in Kenya up to 1939. **(1mk)**

11) Identify the main feature of Kenyans first independent parliament **(1mk)**

12) What was the main reason for convening the 2nd Lancaster conference in 1962 **(1mk)**

13) Define the term **democracy** **(1mk)**

14) Give two social causes of disunity in **Kenya today** **(2mks)**

15) Identify the most significant aspect of the Nandi social organization **(1mk)**

16) Give two reasons that may lead to deprivation of freedom of expression to a Kenyan citizen **(2mks)**

17) Explain two recommendations of Littleton constitution of 195**4(2mks)**

SECTION B (45MKS)

Answer any three questions from this section

18)a) Identify three main economic activities of the Luo during the precolonial Kenya **(3mks)**

Describe the political organization of the akamba in 19th century **(12mks)**

19)a) Give the characteristic of early political organization in Kenya **(3mks)**

b) Explain six factors which promoted African political organization in Kenya after **1945** **(12mks)**

20a) Outline the terms of Devonshire white paper **(5mks)**

b) Describe the method used by the colonial government to acquire labour for settlers in Kenya **(10mks)**

21a) Identify five merits of democracy **(5mks)**

b) Explain five principles of democracy **(10mks)**

SECTION C (30MARKS)

Answer any two questions

22a) identify the factors that should be considered while drafting the constitution of a country **(5mks)**

b) Describe the stages of constitution making process in Kenya **(12mks)**

23a) give three ways in which education promotes national unity in Kenya **(3mks)**

b) Discuss the procedures followed while solving conflicts through the mediation method **(12mks0**

24a) what were the main objectives of local native council in Kenya during the colonial period **(3mks)**

b) Describe the structure of central government in colonial Kenya **(12mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

HISTORY &GOVERNMENT

TIME: 2 HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

SECTION A

Answer ALL the questions

1. Give one reason why History is referred to as a science. **(1mk)**
2. Outline two classes of Monarchial government **(2mks)**
3. Give one advantage of Oral traditions as a source of information on History and government. **(1mk)**
4. Outline two characteristics of the Homo habilis**.** **(2mks)**
5. Give one disadvantage of hunting in groups during the Stone Age period. **(1mk)**
6. Definition of Agrarian Revolution **(1mk)**
7. One criteria that used to classify trade. **(1mks)**
8. Name one type of sailing ship invented by the Portuguese**.** **(1mk)**
9. Two reasons for space exploration.
10. Identify two early forms of communication used by early man. **(2mks)**
11. Two factors that facilitated the spread of Iron working in Africa. **(2mks)**
12. Two political effects of the Industrial Revolution in Europe**.** **(2mks)**
13. State two roles played by missionaries in the process of colonization. **(2mks)**
14. First president of the FRELIMO Movement. **(1mk)**
15. Name one method of administration used for to ruler Kenya during the colonial period. **(1mks)**
16. Give one function of Athens as an urban center. .
17. Name two Cities that developed along East African cost**.** **(2mks).**

SECTION B (45mks) Answer any three Questions from this section.

18. a) Identify five advantages of the Enclosure System in Britain during the Agrarian Revolution. **(5mks)**

b) Explain five factors that facilitated the Science Revolution in Europe. **(10mks)**

19.

(a) Outline five factors that facilitated the development of the Trans – Saharan trade**. (3mks)**

(b) Explain five reasons for the decline of the Trans – Atlantic trade. **(10mks)**

20. (a) give three reasons why attainment of independence by Mozambique tool long**? (3mks)**

(b) Factors for the emergence of African Nationalism in South Africa**. (12mks)**

21. (a) Reasons why Lewanika collaborated . **(3mks)**

(b) Factors that enable SamoriToure to resist the French for long. **(12mks)**

SECTION C (30mks) Answer any two questions in this section.

22. (a) Name any three early urban center that developed in North Africa. **(3mks)**

b) Explain the factors that facilitated the growth of Athens as an early urban center **(12mks)**

23. (a) State five factord that led to the decline of Asante Kingdom. **(5mks)**

b) How was the Asante Empire Organized politically in the 19thcentury. **(10mks)**

24. (a) State five reasons why the British employed direct rule in Zimbabwe. **(5mks)**

b) Explain the effects of direct rule in Zimbabwe**. (10mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

PHYSICS

TIME: 2 HOURS

PAPER 1

NAME…… ADM NO……

SIGN…… DATE;……

INSTRUCTIONS TO THE CANDIDATES

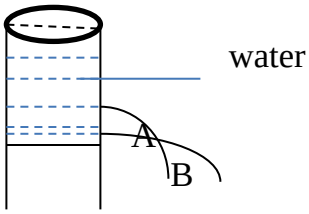
1. ***Write your name, Adm number and dates on the spaces provided above clearly***
2. ***The papers consist of section and b as follows. Section a = 25mks, section b 75mks***
3. ***All questions must be answered on the spaces left/provided after each.***
4. ***All working must be clearly shown and numerical answers given in correct SI units.***
5. ***Mathematical tables and silent electronic calculators may be used.***

SECTION A (25 MARKS)

1) State any two forces that acts between two objects not in contact. **(2mks)**

2) State two physical characteristics that change when a metal cube is heated. **(2mks)**

3) The diagram below shows jets from two holes at the side of a tank filled with water. Explain why Jet A is longer than B **(2mks)**



4) State the law of conservation of linear momentum **(1mk)**

5) State physical quantities whose SI units are shown below. **(2mks)**

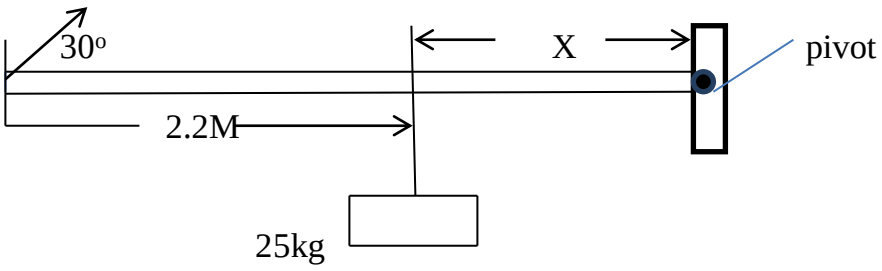
NM

Kgm/s

M^3/s

J/kg K

6) The system below was used to balance a mass of 25kg fixed at a distance of Xm from the pivot. Find the value of X to 2.d.p. **(3mks)**

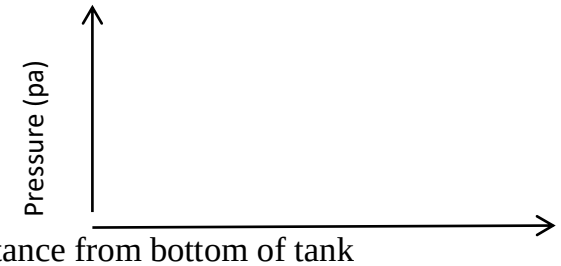


7) State two circumstances under which an object floats on a liquid. **(2mks)**

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8) In the graph below sketch the graph of pressure experienced by a ball moving from the bottom of a tank of water towards the surface**. (3mks)**



9) Two springs A and B. have the same length and same diameter. When the same object was suspended from the bottom of each spring separately, there was a difference in their extensions. State two factors that may have caused the difference extensions **(2mks)**

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10)A road surface offers friction of 32,000N, to a vehicle of mass 2500kg running on it. Find the coefficient of kinetic friction of the road. Explain if the value obtained will change when it rain. **(3mks)**

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11) In a laboratory experiment, it was realized that two different gases of equal volume diffused across a chamber at different rates. What may have caused the difference? **(2mks)**

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12) State one physical change that affects the speed of sound in air. **1mks**

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SECTION B. (55MKS)

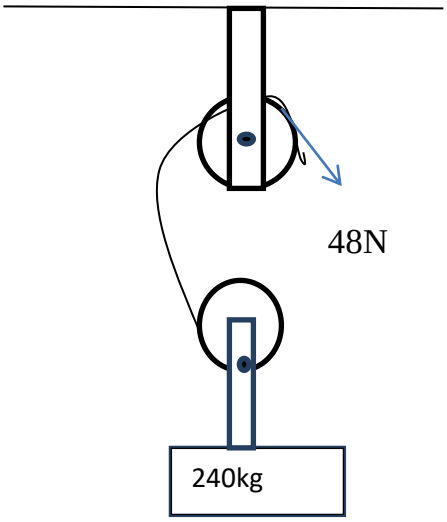
13)(a) Outline the order of energy transformations when lighting a match box **(3mks)**

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(b) The system below was used to lift a load of mass 240kg in a warehouse using a force of 48N.



Find

V..R **(2mks)**

Efficiency **(3mks)**

14)(a) Explain how unusual expansion of water favours aquatic life. **(4mks)**

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(b) The number of particles per mm^3 of substances A, B and C are given in the table below.

substance	No of particles per mm^3
A	3.0×10^7
B	4.5×10^{28}
C	$6.8.x\ 10^{12}$

(e) Identify the states of matter of the substances **(3mks)**

(f) Explain how the number of particles of B will change when heated. **(3mks)**

(c) State the factors that determine pressure exerted by a wooden block resting on a table surface.

(3mks)

15) (a)A bullet of mass 20g travelling at a velocity of 600m/s hits a suspended wooden block of mass 400g. The bullet gets stuck inside the wooden block and the two bodies move together in one direction. If the string holding the wooden block is not cut; Find

The common velocity of the bullet and wooden block. **(3mks)**

Maximum height the two bodies reach **(3mks)**

The time taken by the two bodies to reach maximum height **(3mks)**

16)(a) (i) State two characteristics of turbulent flow. **(3mks)**

Give three examples of Bernoulli's effect in air. **(3mks)**

(b)(i) A liquid flows in a pipe of cross sectional area 60cm^2 has a constriction of cross sectional area of 18cm^2 of one point. The velocity of the liquid at the construction is 5m/s^{-1}. Find

(i) The velocity of liquid in the wider section **(3mks)**

(ii) The volume of liquid in litres that passes through the construction in one hour. **(2mks)**

17) A stone is projected vertically upwards from the top of a building at a velocity of 20m/s. If the stone took5.5 seconds to reach the bottom of the building. Find;

After how long did the stone start the down ward journey **(3mks)**

Height of the building. **(3mks)**

Velocity with which the stone hits at the bottom of the building **(3mks)**

18)a) An oil drop of volume 0.4mm^3 was placed on a clean water surface. It spread to form a monoatomic circular patch of area 2000mm^2. Use this data to calculate the diameter of a molecule of oil**. (3mks)**

b) Name **two** applications of Pascal's Principle. **(2mks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

PHYSICS

TIME: 2 HOURS

PAPER 2

NAME…… ADM NO……

SIGN…… DATE;……

SECTION A : (25 MARKS)

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

1) Figure 1 below shows an object infront of plane mirror.

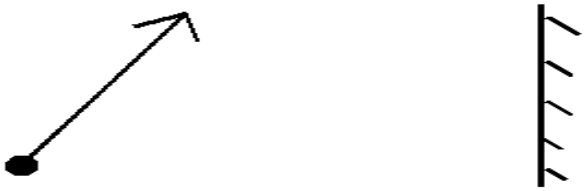


Figure 1

Sketch image of object using mirror shown. **(1mk)**

2) Figure 2 below shows an object infront of concave mirror and it's image.

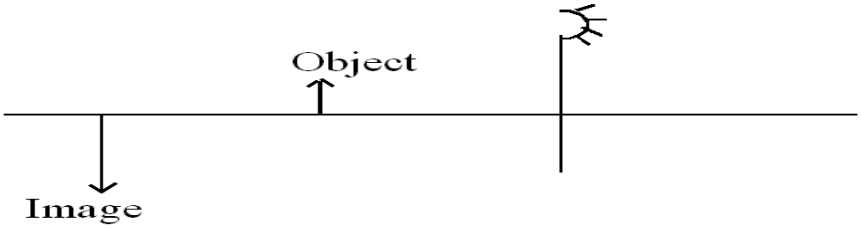


Figure 2

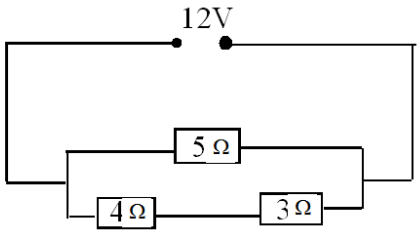
Locate position of its principal focus. **(2mks)**

3. State the use of Manganese (IV) oxide in dry cell. **(1mk)**

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4. Use figure 3 below to answer following questions.



Determine

(a) Total resistance. **(3mks)**

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(b) Potential difference across 4Ω resistor. **(3mks)**

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5. Figure 4 shows conductor carrying current in magnetic field and moves in direction shown.



Figure 4

Identify polarities X and Y. **(2mks)**

6. A man standing between two parallel walls fires a gun. He hears an echo after 1.5 seconds and another one after 2.5 seconds and yet another one after 4 seconds. Determine the separation of the walls. (Take velocity of sound 340 m/s)

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7. A student shouts and hears an echo after 0.6 seconds. If the velocity of sound is 330m/s. Calculate the distance between student and reflecting surface. **(3mks)**

8. Figure 6 shows water waves moving towards barrier. Show the emergence of the reflected waves

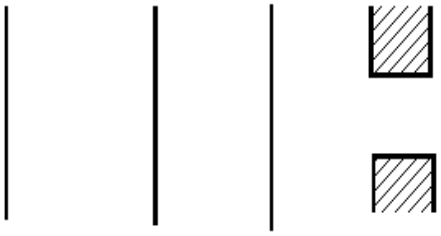


Figure 6

9. (a) Define refractive index. **(1mk)**

(b) The critical angle of a material is 43.2^0. Determine the refractive index of that material. **(2mks)**

(b) A battery of emf E drives a current of 0.25A when connected to 5.5W resistor. When the 5.5W resistor is replaced with 2.5W resistor, the current flowing becomes 0.5A. Find the emf E and the internal resistance r of the battery. **(3 marks)**

10.Define the term sulphation as applied to lead acid cells. **(1 mark)**

SECTION: B(55MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION

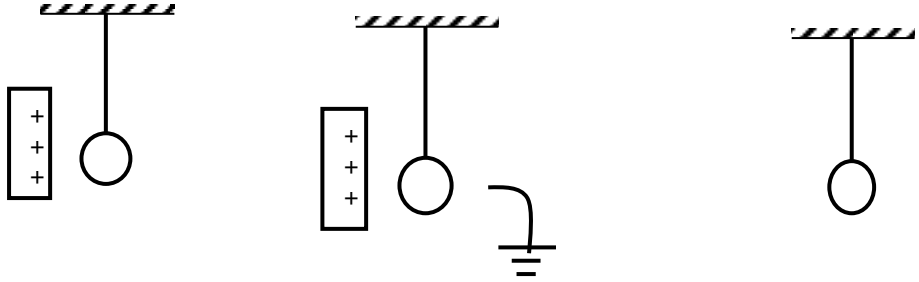
11. (a) An uncharged metal rod brought close but not touching the cap of a charged electroscope causes a decrease in the divergence of the leaf. Explain the observation. **(1mark)**

(b) In experiment to investigate factors affecting capacitance of a capacitor, a student increased the area of the plates and decreased the separation of the plates. Explain the effect on the capacitance when

(i) the area of plates increased **(1 mark)**

(ii) the distance of the separation of the plates decreased **(1 mark)**

(c) Figure 7 illustrates a method of charging a metal sphere.

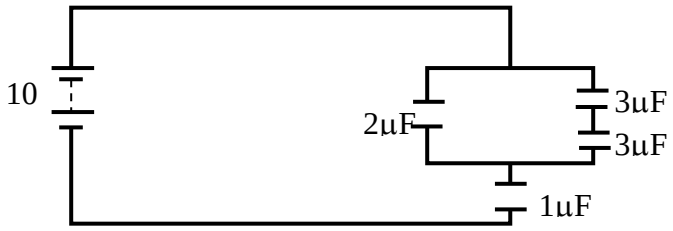


(i) (ii) (iii)

Fig. 7.

21. Name the method of charging shown in fig 8.(1mar(ii) Indicate the final charge on the sphere in fig 8. (1 mark)

(d) Figure 9 shows an arrangement of capacitors connected to a 10V d.c supply.



Determine

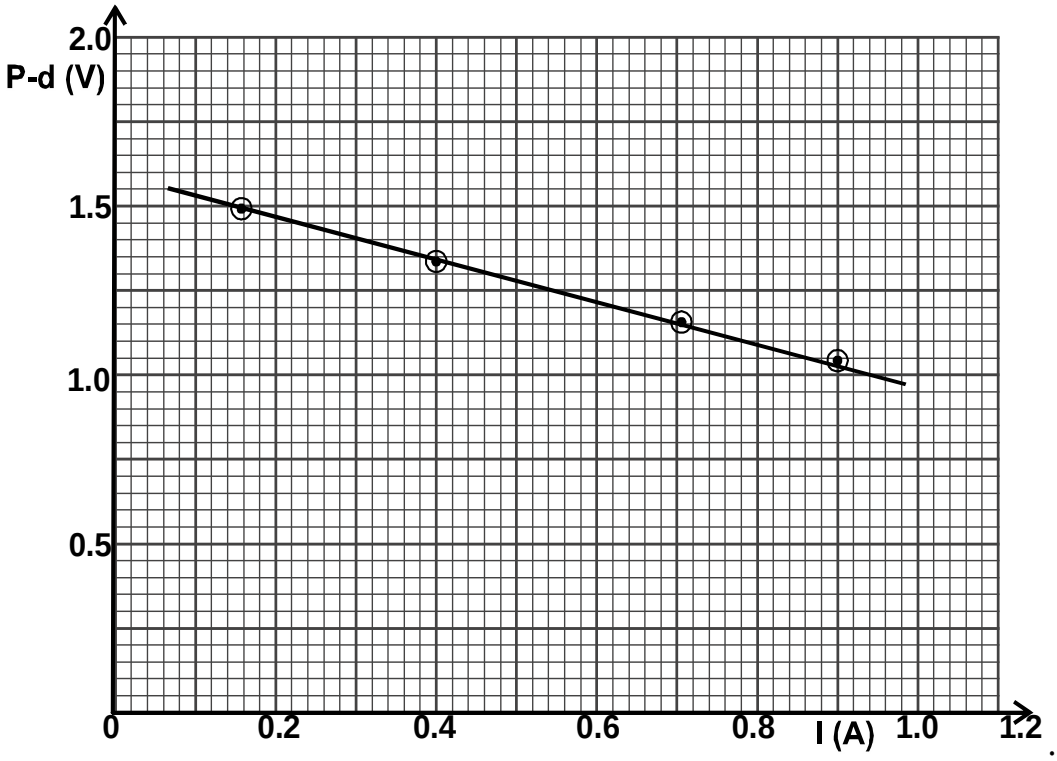
(i) the combined capacitance **(2 marks)**

(ii) the total charge in the circuit **(1 mark)**

(iii) the total energy stored in the circuit. **(2marks)**

(i) (a) Distinguish between e.mf. and terminal voltage of a battery. **(2 marks)**

(b) The graph in figure 8 shows the variation of potential difference V against current I for a cell when current is drawn from it.



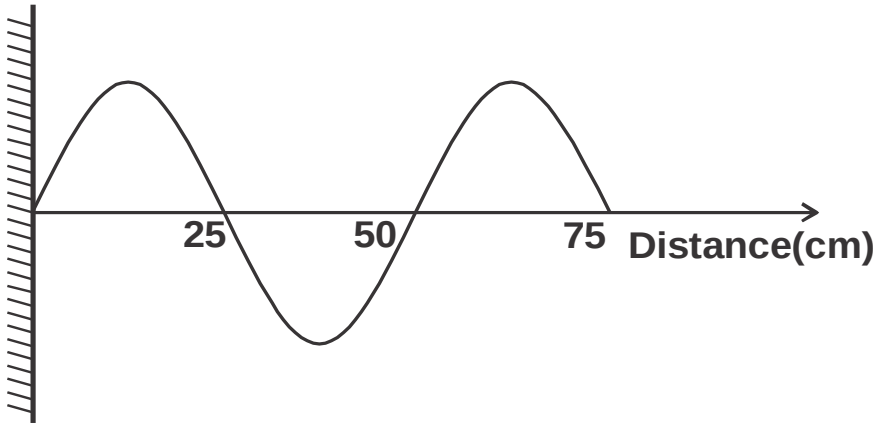
(i) From the graph determine

(a)The e.m.f of the cell. **(2 marks)**

(b)The internal resistance of the cell. **(4marks)**

(c)on the space provided below, draw a circuit that could be used to obtain the results represented by the graph. **(2 marks)**

13.(a) Figure 9 is an illustration of a wave pattern.

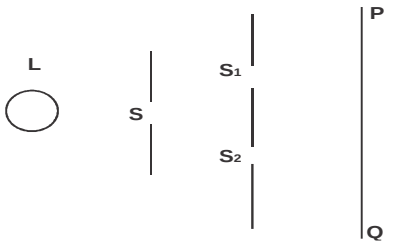


i) State with reason the type of wave shown. **(2 marks)**

ii)Determine the wavelength of the wave. **(1 mark)**

iii)Calculate the frequency of the wave given that the speed of the wave is 9m/s. **(3 marks)**

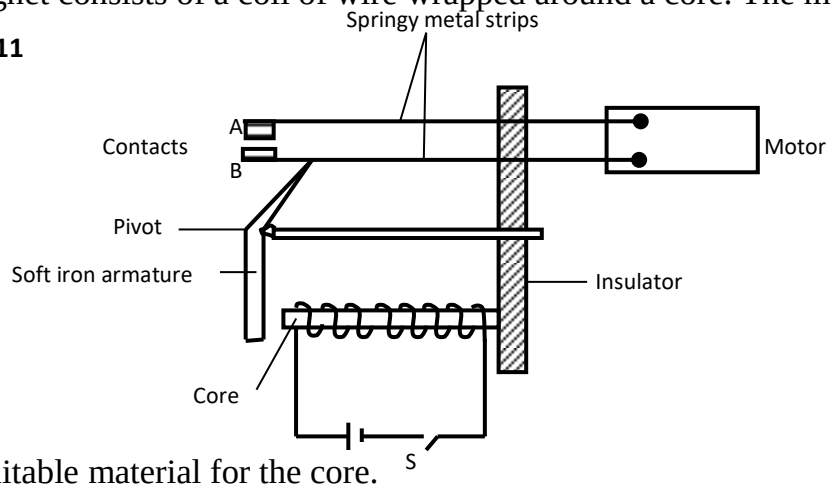
b) Figure 10 show s monochromatic source of light L behind a barrier with a single slit S placedbehind another barrier with two identical slits S_1 and S_2. A screen PQ is placed in position as shown.



i)Explain what is observed on screen PQ. **(2 marks)**

ii)What is the significance of S_1 and S_2 ? **(1 mark)**

14.Figure 11 shows an electromagnetic relay being used to switch an electric motor on and off. The electromagnet consists of a coil of wire wrapped around a core. The motor in figure is switched off. **Figure 11**



- Suggest suitable material for the core. **(1mark)**

(b)What happens to the core when switch S is closed? **(2marks)**

(c)Why do the contacts A and B close when the switch S is closed. **(2marks)**

(d)When the switch S is opened, what will happen to;

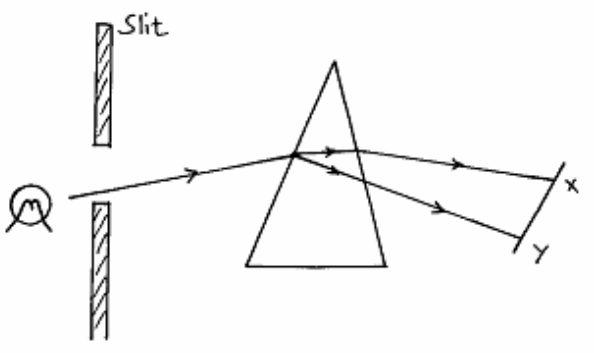
(e) The core **(1mark)**

(f) Soft iron armature. **(1mark**)

- Give **one** other application of an electromagnet. **(1mark)**

- State **two** ways in which an electromagnet could be made more powerful. **(2marks)**

15.Figure 12 below shows a narrow beam of white light onto a glass prism.



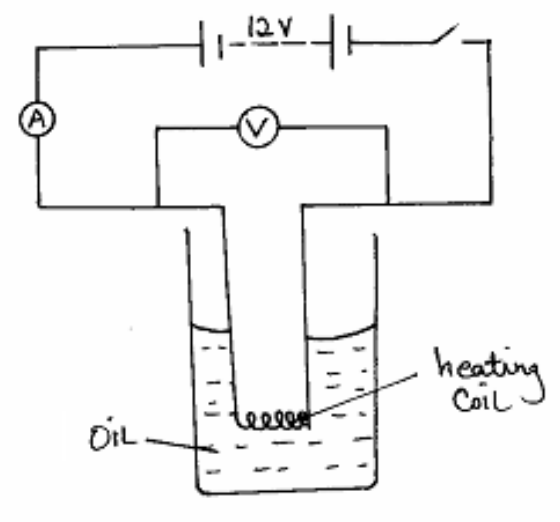
(i) What is the name of the phenomenon represented in the diagram? **(1mk)**

(g) Name the colour at **X** and **Y**. Give a reason. **(3mks)**

(iii) What is the purpose of the slit? **(1mk)**

16. The figure 4 shows a circuit with a coil used to warm oil in a beaker.

Figure 4



(a) State the Ohm's Law. **(1mk)**

(b) (i). Explain how heat is produced in the coil. **(2mks)**

(ii)Given that the reading of the ammeter is 2.5A, determine the resistance of the coil. **(3mks)**

(iii).How much heat is produced in the coil in a minute? **(3mks)**

(iv). Give **two** changes that can be made in the set-up in order to produce more heat per minute.
(2mks)

(iii)How much heat is produced in the coil in a minute? **(3marks)**

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

PHYSICS

CONFIDENTIAL.

INSTRUCTIONS TO SCHOOL

QUESTION ONE REQUIREMENTS

- Ammeter
- Voltmeter
- Nichrome wire mounted on a millimeter scale (gauge 28)
- Switch
- A new dry cell
- A micrometer screw gauge
- Connecting wires
- A jockey

QUESTION TWO REQUIREMENTS

- A spiral spring (spring diameter =15mm

Length= 70mm, diameter of spring wire=1.8mm, number of turns=88)

- A complete stand
- 7 masses of 20g each
- A stopwatch
- 2 small pieces of wood for clamping
- A glass block
- 4 optical pins
- A soft board
- One plain paper

FORM 3 ENDTERM 3 EXAMS

(SERIES 1)

PHYSICS

TIME: 2 ½ HOURS

PAPER 3

NAME…… ADM NO……

SIGN…… DATE;……

INSTRUCTIONS TO CANDIDATES

1. *Write your name and index number in the spaces provided.*
2. *Mathematical tables and non-programmable calculators may be used.*
3. *This paper consists of section A and section B.*
4. *Attempt all the questions in the spaces provided.*
5. *ALL working MUST be clearly shown.*

For Examiners Use

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1	18	
2	22	
TOTAL	40	

QUESTION 1

You are provided with the following apparatus

(a) Ammeter

(b) A voltmeter

(c) A wire mounted on a millimeter scale

(d) A switch

(e) A new dry cell

(f) A micrometer screw gauge

(g) Connecting wires

(h) A jockey

Proceed as follows

- Measure the diameter d of the mounted wire at three different points

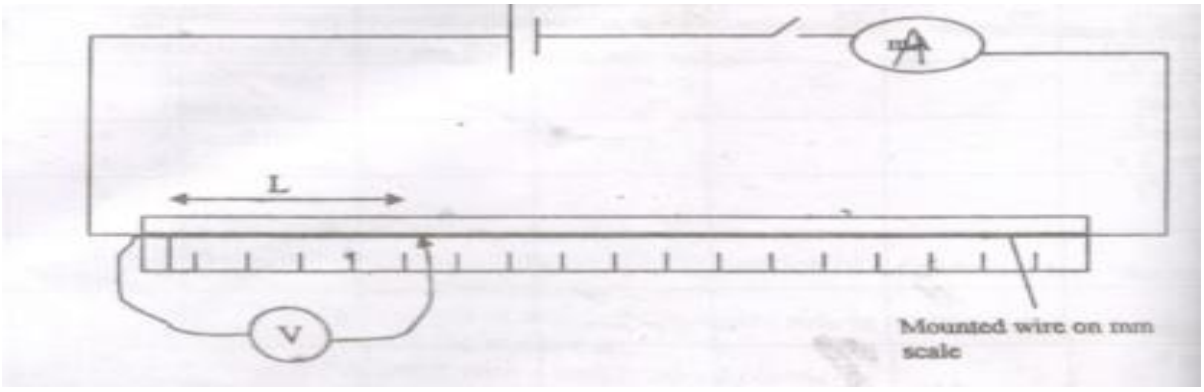
d_1= _____ mm

d_2=_____ mm (½mk)

d_3=_____ mm

Average d = _____ mm (½mk)

- Set up the apparatus as shown in the circuit diagram.



Close the switch and tap the mounted wire with jockey as shown in the circuit. Ensure that both meters show positive deflection, open the switch.

- Tap the wire at L= 20cm, close the switch, read and record in the table the ammeter and voltmeter reading.

- Repeat the procedure in (c) for other values of L shown in the table and complete the table.

L(m)	V(Volts)	I(A)	R=V/I
0.2			
0.3			
0.4			
0.5			
0.6			
0.7			
0.8			

(6mks)

- Plot a graph of R against L (m). **(5mks)**

- Determine the slope of the graph. **(3mks)**

- Given that R= p$\frac{L}{A}$ where A is the cross-sectional area of the wire and p is a constant for the material of the wire, determine the value of the constant p. **(3mks)**

6. QUESTION 2

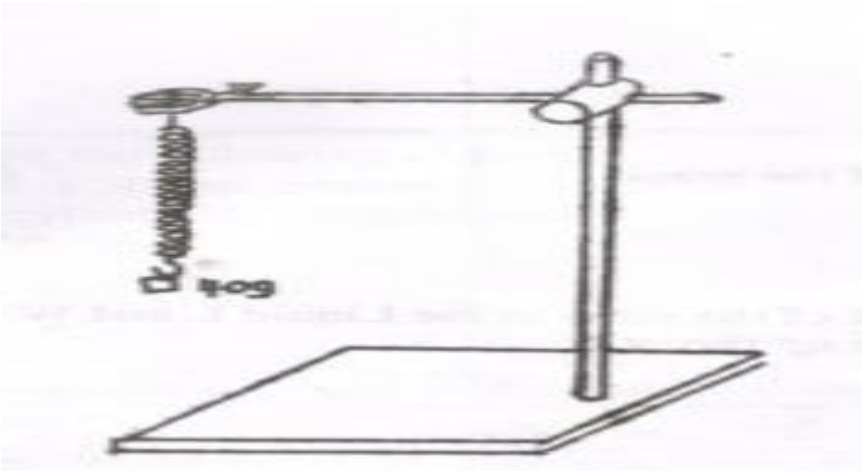
Part 1

You are provided with the following;

A spiral spring
A complete stand
7 masses of 20g each
A stop watch
2 small pieces of wood for clamping

Proceed as follows

Clamp the spiral spring so as to hang from the clamp as shown in the figure below



Hang a 40g mass from the spring and displace the mass slightly downwards so that it executes vertical oscillations as shown.

Measure and record in the table the time for 10 oscillations.

Determine the periodic time T in the table.

Repeat the experiment for other values of mass m shown in the table. Complete the table below.

Mass (m)g	**40**	**60**	**80**	**100**	**120**	**140**
Mass m (kg)						
Time for 10 osc(s)						
Period T(s)						
T^2 (s^2)						

(6mks)

Plot a graph of T^2 (s^2) against mass m(kg). **(5mks)**

Determine the slope of the graph. **(2mks)**

Given that the equation of the graph is $T^2=\frac{4\pi^2 m}{K}$

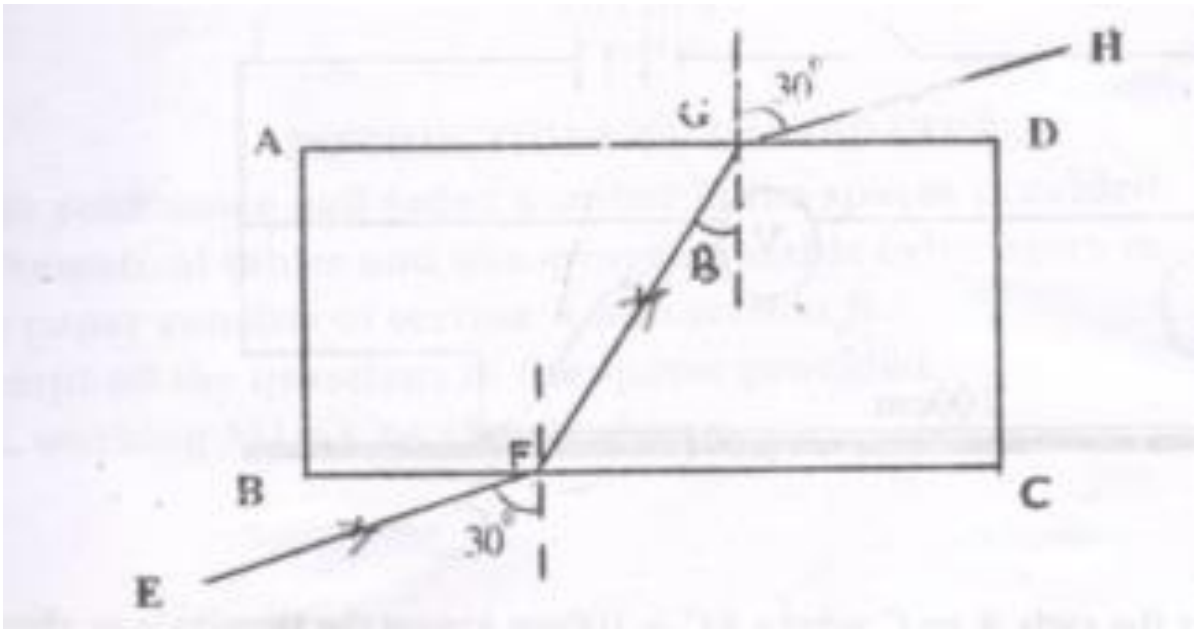
Determine the value of K. **(3mks)**

Part II

You are provided with a glass block, 4 optical pins, a soft board, one plain paper.

(a) Place the rectangular glass block on a sheet of paper fixed on the soft board with one of its longest face uppermost. Mark the outline ABCD as shown in the figure. Remove the glass block and draw a line EF to represent a ray of light making an angle of incidence $i=30^0$ with the longest side BC of the block.

(b) Stand pins p1and p2 on this line as far as possible. Replace the block and mark the emergent ray by looking into the side AD of the block and placing pins p3 and p4 in line with images of p1 and p2 as seen through the glass block. Remove the block and the pins and draw ray EFGH as shown in the figure below.



Draw the normal at G as shown.

Measure angle B **(1mk)**

B = ……

Given that k=$\frac{sin\ 30^0}{\sin B}$

Calculate the value of k. **(2mks)**

The main paper used should be handed over together with this paper (correct use made of the plain paper) **(1mk)**

- ✓ **FOR SIMILAR ENDTERM 3 EAMINATIONS**
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