# FORM 3 MIDTERM 2 EXAMS

# ALL SUBJECTS

***Compilation of Standard series of Mid-Term 2 Examinations for the Current Class for all High Schools in the Republic of Kenya.***

**SUBJECTS COMPILED;**

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

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## SERIES 1

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***For Marking Schemes / Answers***

***Mr Isaboke 0746-222-000 / 0753-222-000***

# MWALIMU CONSULTANCY

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# CHRISTIAN RELIGIOUS EDUCATION

## PAPER 1

**TIME: 2½ HOURS**

**NAME……. ADM NO; ……..**

**CLASS…… DATE……..**

**INSTRUCTIONS**

*Answer All Questions*

**1. (a)** Outline ways in which Christians use the Bible to spread the good news **(6mks)**

**(b)** State **seven** problems which church leaders encounter in their work of evangelization **(7mks)**

**c)** Explain the reasons why the bible was translated from original languages to local languages **(7mks)**

**2. (a)** Outline the differences in the **two** accounts of creation in Genesis 1 and 2 **(7mks)**

**b)** Outline the consequences of breaking taboo in the traditional concept in the African society. **(7mks)**

**c)** Describe **six** ways in which Christians continue with God's work of creation **(6mks)**

**3.a)** Explain ways in which King David promoted the worship of Yahweh in Israel **(7mks)**

**b)** Outline **seven** failures of King Saul as the first King of Israel **(7mks)**

**c)** Outline the duties of Samuel as a prophet of God **(6mks)**

**4.(**a) Give s**even** reasons why Elijah faced danger and hostility in Israel **(7mks)**

**(b)** List **five** forms of corruption in Kenya today **(5mks)**

**(c)** Explain the relevance of Elijah's prophetic mission to Christians today **(8mks)**

**5(a)** Explain four importance of Kinship ties in the traditional African society. **(8 mks)**

**(b)** Identify seven changes that have taken place in the rite of initiation today. **(7 mks)**

**(c)** Give reasons why dowry is losing its meaning in the contemporary Kenya. **(5 marks)**

**6.**a) Highlight the difference between the traditional and Old Testament prophets **(8 mks)**

**b)** Identify various ways through which the Old Testament Prophets communicated their messages to the people **(7 mks)**

**c)** What lessons can a Christian learn from the Old testament Prophets **(5 mks)**

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# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

## CHRISTIAN RELIGIOUS EDUCATION

### PAPER 2

**TIME: 2½ HOURS**

**NAME……. ADM NO; ……..**

**CLASS…… DATE……..**

*Answer All Questions*

**1**a) Explain **six** expectations of the Jews concerning the messiah. **(6marks)**

**b)** Outline the similarities between the annunciation of the birth of John the Baptist and that of Jesus Christ. **(8marks)**

**c)** State **six** New Testament teachings about children. **(6marks)**

**2.**a) Describe the call of the first disciples according to (Luke 5:1-11). **(8marks)**

**b)** Explain the reasons why Jesus chose the 12 disciples. **(7marks)**

c) State **five** ways in which Christians demonstrate true discipleship. **(5marks)**

**3. (a)** Describe what happened to Jesus from the time of his arrest to his death on the cross Luke 22: 47- Luke 23:48 **(8mks)**

**(b)** Give **five** reasons why it was difficult for the disciples to believe that Jesus had resurrected **(5mks)**

**(c)** Outline the importance of resurrection of Jesus to Christians today **(5mks)**

**4.**a) Highlight the message of Peter on the day of Pentecost (Acts 2:14-40). **(8mks)**

**(b)** State **seven** teachings of Jesus on the role of the Holy Spirit. **(7mks)**

**(c)** State **five** problems of spreading the Gospel today. **(5mks)**

**5.**a) State **seven** fruits of the Holy Spirit according to Galatians 5:6-26 **(7mks)**

**b)** Explain **seven** ways in which the gifts of the Holy Spirit is misused in Christians churches today **(7mks)**

**c)** State any **six** characteristics of love according to **1st Corinthians 13** **(6mks)**

**6.**Identify five symbolic expressions used in teaching the unity of believers in the apostolic Church **(5mks)**

Identify factors which cause disunity among the Christians today. **(8mks)**

.Give **five** ways in which Christians show their trust in God. **(7mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# HISTORY AND GOVERNMENT

## PAPER 1

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**SIGN…….. DATE…….**

**INSTRUCTIONS TO CANDIDATES**

1. *This paper consists of THREE sections: A, B & C.*
2. *Answer ALL the Questions in Section A, THREE Questions from Section B & TWO Questions from Section C.*
3. *Answer ALL the Questions in the Answer BOOKLETS provided*

**SECTION A (25MKS)**

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

**1.** Identify two archeological evidences that show Kenya was inhabited by Stone Age people 2 million years ago. **(2mks)**

**2.** State two practices that the Agikuyu borrowed from the Gumbo during the pre-colonial period. **(2mks)**

**4.** Give two reasons why Africans moved to urban centres in Kenya during the colonial period. **(2mks)**

**4.** Name two exports to East Africa from China during the Indian Ocean trade. **(2mks)**

**5.** State two duties of the governor in the colonial Kenya**.** **(2mks)**

**6.** Name the Amani coalition's presidential candidate and his running mate in the just concluded general elections**.** **(2mks)**

**7.** Name the chief executive officer of the Independent Electoral and Boundaries commission. **(1mk)**

**8**. Name the longest serving Kenyan vice-president since independence**.** **(1mk)**

**9**. State two significance of the initiation ceremonies among the Mijikenda during the pre-colonial period. **(2mks)**

**10.** Name two functions of the Wanga king during the pre-colonial period. **(2mks)**

**11.** Name two archeological sites in Kenya. **(2mks)**

**12**. How many counties are there in Kenya under the new constitution? **(1mk)**

**13.** Name the immediate former government spokesperson. **(1mk)**

**14.** Name the levels of government in Kenya**.** **(2mks)**

**15.** Identify two Portuguese officials involved in the Portuguese conquest of the East coast. **(2mks)**

## SECTION B (45MKS)

***Answer any THREE questions.***

**16. (a) What** were the factors that led to the development of urban centres in the colonial Kenya. **(5mks)**

**(b)**Explain the positive effects of **urbanization** during the period of colonial rule in Kenya. **(10mks)**

**17. (a)** What are the causes of food shortage in Kenya. **(3mks)**

(b)Explain the measures that the Kenyan government has taken to solve food shortages. **(12mks)**

**18.** (a) Identify the groups of the Ameru during the pre-colonial period. **(5mks)**

(b)Explain the functions of the NjuriNcheke among the Ameru**.** **(10mks)**

**19.** (a) What were the grievances presented by the coast African Association to the colonial government**?** **(3mks)**

(b)Explain problems faced by early political organizations in Kenya. **(12mks)**

## SECTION C (30MKS)

***Answer any TWO questions.***

**20.(**a) What are the limitations to freedom of movement in Kenya? **(3mks)**

**(b)**Discuss the social duties of a Kenyan citizen. **(12mks)**

**21**. (a) Give hierarchy of courts in the current court system in Kenya. **(5mks)**

(b)Discuss the challenges faced by the Kenyan judiciary. **(10mks)**

**22.** (a) State the economic issues that cause conflict. **(5mks)**

(b)Describe the various methods of conflict resolution. **(10mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# HISTORY AND GOVERNMENT

## PAPER 2

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**SECTION A: (25mks)**

*Answer all questions in this section*

1. Identify one specific tool invented by Homo Sapiens that greatly improved his way of life **(1mk)**
2. Identify the term used to refer to animal and plant remains found by Charles Darwin **(1mk)**
3. Identify two sub species of the Homo **Sapiens** **(2mks)**
4. Why is the period of early man referred to as Stone Age**?** **(1mk)**
5. Name the famous building in Athens built in honour of the goddess A**thena** **(1mk)**
6. Who discovered **penicillin?** **(1mk)**
7. State two advantages of using bicycles as a mode of **transport** **(2mks)**
8. State two factors responsible for the decline of Merowe as an urban **centre** **(2mks)**
9. Identify the title given to the state kings in the Asante **Kingdom** **(1mk)**
10. Give the main advantage of the cell **phone** **(1mk)**
11. Identify two treaties that Lewanika of the Lozi signed with the **British** **(2mks)**
12. Which European leader was responsible for convening of the Berlin conference 1884 – 1885? **(1mk)**
13. Give two strategies employed by Samori Toure in his war of resistance against the French **(2mks)**
14. Apart from river Congo, name the river that was declared free to all Europeans for navigation at the Berlin conference **(1mk)**

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

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

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

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

## SECTION B (45mks)

***Answer any three questions***

**19.** a) What factors led to the development of early agriculture in Mesopotamia? **(5mks)**

b) Explain five factors that have led to shortage of food in Third World countries **(10mks)**

**20. a)** Give three stages of evolution of man **(3mks)**

**b)** Describe six ways in which the discovery of fire improved man's way of **life** **(12mks)**

**21. a**) Identify three ways in which water was used in industries during the 18th century **(3mks)**

**b)** Explain six social results of the Industrial revolution in Europe during the 18th century **(12mks)**

**22. a)** Identify five causes of Maji maji rebellion in **1905 – 1907** **(5mks)**

**b)** Why were the African communities defeated by the Germans during maji maji rebellion? **(10mks)**

## SECTION C (30mks)

**Answer any two questions**

**23. a**) Identify 3 European powers that acquired colonies in Africa. (3mks)

**b)** Explain six reasons why the Lozi collaborated with the British during colonization **(12mks)**

**24. a)** Give three economic activities of the Baganda in the pre-colonial period **(3mks)**

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

**25. a)** Outline five reasons why Samori Toure's second empire was not suitable **(5mks)**

b) Explain five factors that led to the defeat of Samori Toure by the French **(10mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# GEOGRAPHY

## PAPER 1

**TIME: 2¾ HOURS**

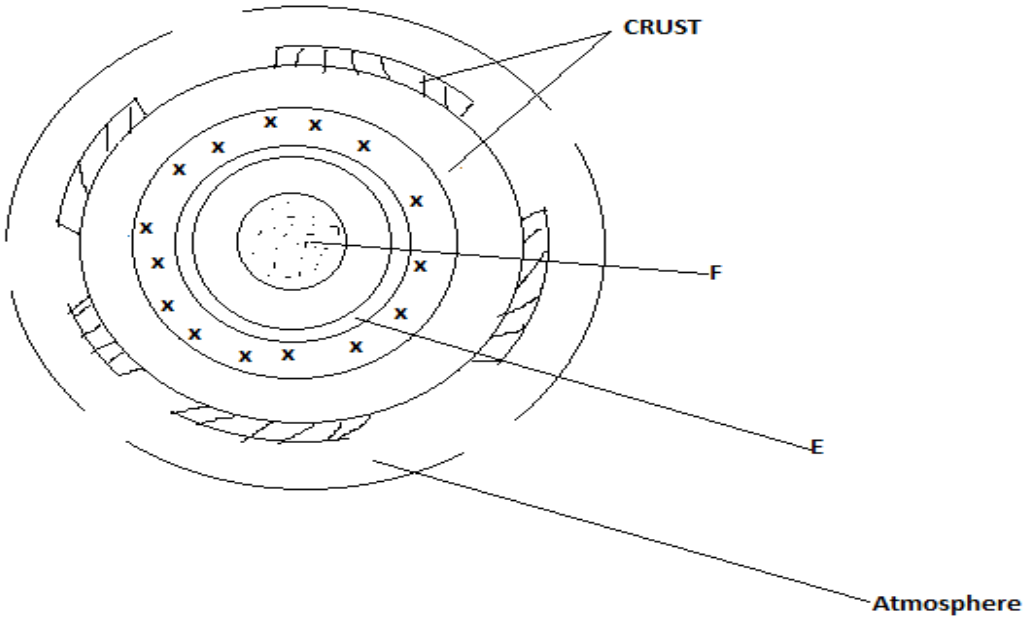
**NAME..... ADM NO; .....**

**CLASS..... DATE.....**

## SECTION A

*Answer All Questions*

**1.** The diagram below shows the structure of the earth. use it to answer (a)




**(a)** Name the parts marked E and F **(2mks)**

**(b)** State three characteristics of the atmosphere **(3mks)**

**2** (a) Identify two forms of rock metamorphism **(2mks)**

(b) State the exclusive equivalent of the following intrusive igneous rocks

(i) Granite **(1mk)**

(ii) Diorite **(1mk)**

(iii) Gabbro **(1mk)**

**3** (a) What is a seismic wave? **(2mks)**

(b) State three ways in which earth quakes affect human activities. **(3mks)**

**4. (a)** Differentiate between illuviation and salinization. **(2mks)**

(b) State three importance of water as a soil property. **(3mks)**

**5** (a) Identify two types of deltas. **(2mks)**

(b) State three conditions ideal for the formation of a delta **(3mks)**

## SECTION B:

***Question 6 Is Compulsory And Any Other Two:***

**6.** Study the data in the following table and answer questions (a) and (b). Kenyas leading imports by value (Ksh Million)

| Crop/year | Wheat | Maize | Rice | Coca |
|---|---|---|---|---|
| 2006 | 5400 | 4700 | 2000 | 700 |
| 2007 | 7200 | 3800 | 2600 | 420 |
| 2008 | 6400 | 1400 | 1900 | 580 |
| 2009 | 6800 | 4600 | 2400 | 800 |

**(a)** Calculate the percentage increase in expenditure on importation of wheat in the year 2006 and 2007 **(2mks)**

**(b) (i)** Draw a compound bar graph to represent the Kenya's leading import crops by value between 2006 and 2009 **(8mks)**

**(ii)** State two advantages of using compound bar graphs to represent data **(2mks)**

**(c)** State four reasons why Kenya imports maize, wheat and rice and she still produces them? **(4m)**

**c)(i)**State physical conditions favouring wheat growing in Kenya **(3mks)**

**(ii)** Explain three reasons why Canada produces more wheat than Kenya **(6mks)**

**7** Differentiate between fissure and vent eruption **(2mks)**

(b) Describe how the following features are formed

(i) Batholiths **(6mks)**

(ii) Volcanic plug **(5mks)**

**(c)** Explain three negative effects of volcanicity on human activities **(6mks)**

**(d)** You are planning to carry out a field study on features formed by volcanicity on the landscape

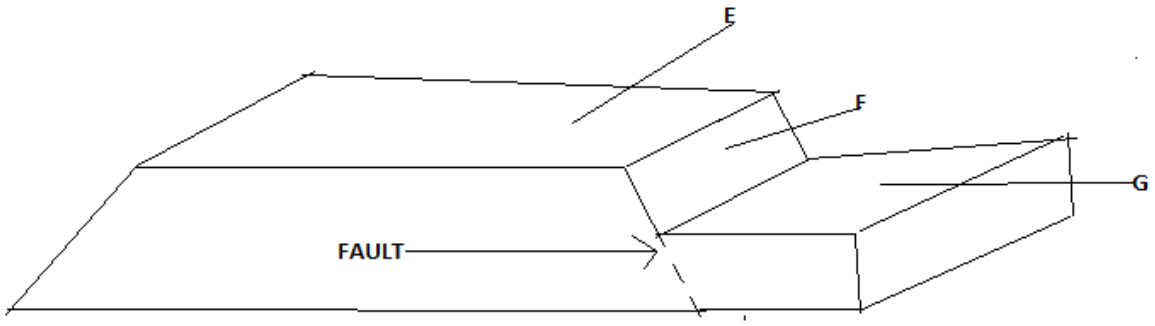
(i) Formulate two null hypotheses for the study **(2mks)**

(ii) Name two drainage features you are likely to study **(2mks)**

(iii) State two methods you would use to record information during the study. **(2mks)**

**8**. (i) What is reverse fault? **(2mks)**

(ii) The diagram bellow represents an area affected by faulting Name the parts marked E,F and G **(3mks)**




**b** Describe the processes involved in the formation of the following features

**(i)** Fault steps **(5mks)**

**(ii)** Rift valley by anticlinal arching **(5mks)**

**c** Explain four ways in which block mountains influence climate **(10 mks)**

**9.** Name two mountains in East Africa where congelifraction is common **(2mks)**

(b) Describe the following types of weathering

(i) Pressure release **(5mks)**

(ii) Hydration **(4mks)**

(iii) Oxidation **(4mks)**

(c) Explain three ways in which plants cause weatherings **(6mks)**

(d) What is an avalanche? **(1mk)**

(ii) State three effects of avalanche **(3mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# GEOGRAPHY

## PAPER 2

**TIME: 2¾ HOURS**

**NAME..... ADM NO; .....**

**CLASS..... DATE.....**

**Answer All Questions**

**1.** Name three patterns of human settlements. **(3mks)**

**2.** i) List any two products from Jua kali industry in Kenya exported to other countries. **(2mks)**

ii) Name two renewable sources of energy used in Kenyan industries. **(2mks)**

**3.** a) Name three surfaces that are reclaimed in Kenya. **(3mks)**

b) Identify the method of reclamation used in each surface mentioned in 3(a) **(3mks)**

**4.** Explain how the following practices help in soil conservation

i) Mulching **(2mks)**

ii) Terracing **(2mks)**

**5.** a) Describe how deep-shaft mining takes place. **(5mks)**

b) Name three products from an oil refinery other than petrol. **(3mks)**

**SECTION B**

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

**6.**The table below shows milk yield in kilograms per dialy cow in Denmark between 1990 and 1995.

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 |
|---|---|---|---|---|---|---|
| Yields in kg | 5243 | 6693 | 7398 | 7610 | 7792 | 7946 |

**(a) (i)** Draw a divided circle of radius 3-5cm to represent the milk yield in Denmrk, Show all your calculations **(2mks)**

**(ii)** State two advantages of using the divided circle to represent data **(2mks)**

**(iii)** Name two other methods, apart from the divided circle, that could be used to represent the above data. **(2mks)**

**(b) (i)** Explain three physical factors that have favoured farming in Denmark **(6mks)**

**(ii)** State three problems facing dairy Farmers in Kenya **(3mks)**

**(c)** Explain two reasons why beef farming is more developed in Argentina than in Kenya. **(4mks)**

**7** (a) (i) State any two forms in which minerals occur **(2mks)**

(ii) Name any three places where limestone is mined in Kenya **(3mks)**

(b) Explain how the following factors influence the exploitation of a mineral

(i) Market **(2mks)**

(ii) The quality of ore **(2mks)**

(iii) Technology **(2mks)**

(c) (i) Name two provinces in south Africa where gold is mined **(2mks)**

(ii) Explain three problems facing gold mining in south Africa **(6mks)**

(d) Describe the processing of diamond in south Africa.

**8** (a) (i) Apart from oil, name **two** sources of non-renewable energy. **(2 mks)**

(ii) List **three** advantages of solar energy. **(3 mks)**

(b) Explain **four** problems encountered in mineral exploitation in Kenya. **(8 mks)**

(c) Explain the effects of over-relience on oil as a source of energy. **(8 mks)**

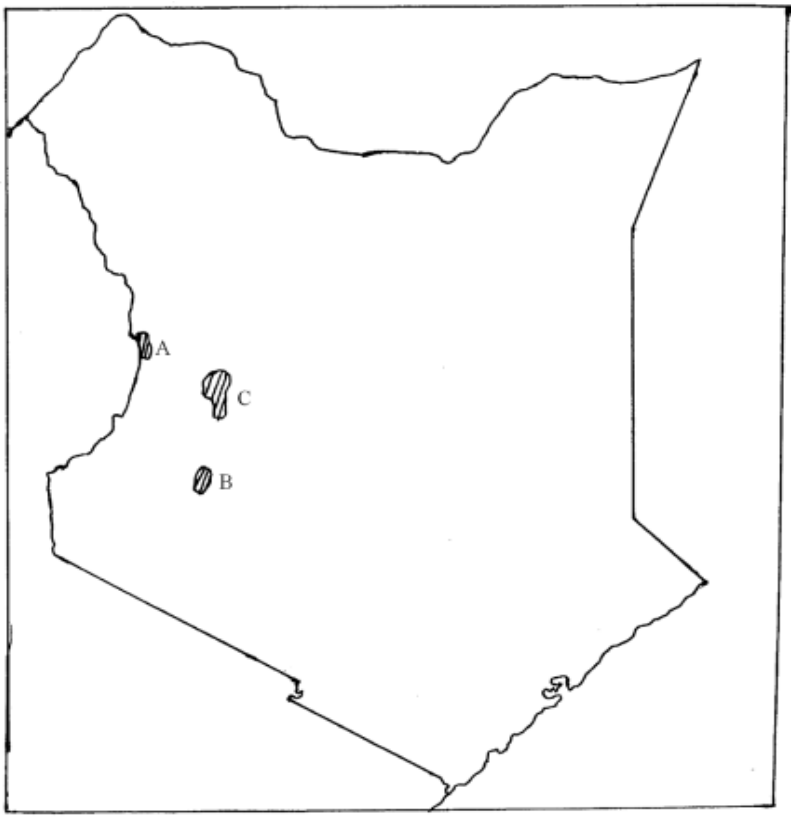
(d) State **four** methods the Government of Kenya uses to manage and conserve her energy resources. **(4 mks)**

**9** a) i) define the term forestry. **(1 mark)**

ii) Give three differences between natural forest and planted forests**.** **(3 marks)**

b) Explain FOUR causes of forest depletion in Kenya today. **(8 marks)**

c) i) From the map below, give the names of the forests marked A, B ad C




**ii)**State FOUR measures that are being undertaken by the Kenya Government to conserve forests.

**(4 marks)**

**d) Explain** THREE factors favouring the exploitation of softwoods in Canada **(6mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# AGRICULTURE

## PAPER 1

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**SECTION A (30MKS)**

**1** State **four** factors which determines the farming systems adapted by farmers **(2mks)**

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**2.** Give **four** reasons for sub in maize field **(2mk)**

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**3.** Name two types of inventories in the farm **(1mk)**

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**4.** State four negative of HIV/AIDS to agriculture **(2mks)**

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**5.** State **four** effect of soil erosion **(2mks)**

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**6.** State **four** deficiency symptoms of nitrogen in plants **(2mks)**

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**7.** Highlight two effects of land title deed to farm **(1mk)**

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**8.** State two methods of controlling headsmat in maize **(1mk)**

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**9.** Give two forms of large scale farming practiced in Kenya **(1mk)**

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**10.** State two ways in which parent rode influences soil characteristics **(1mk)**

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**11.** Give four farming practices carried out to achieve minimum tillage **(2mks)**

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**12.** State two characteristics of plantation farming **(1mk)**

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**13.** Give three classes of weeds under growth cycle **(1 ½ mks)**

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**14.** State four post-harvesting practices on crops **(2mks)**

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**15**. List four advantages of mulching in Agriculture line **(2mks)**

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**16.** State three benefits of using certified seeds **(2mks)**

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**17.** State four importance of air in soil **(2mks)**

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**18.** State four factors used in classification of inorganic fertilizer **(2mks)**

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**19.** State one cause of hard pan in soil

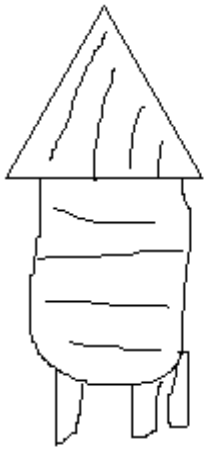
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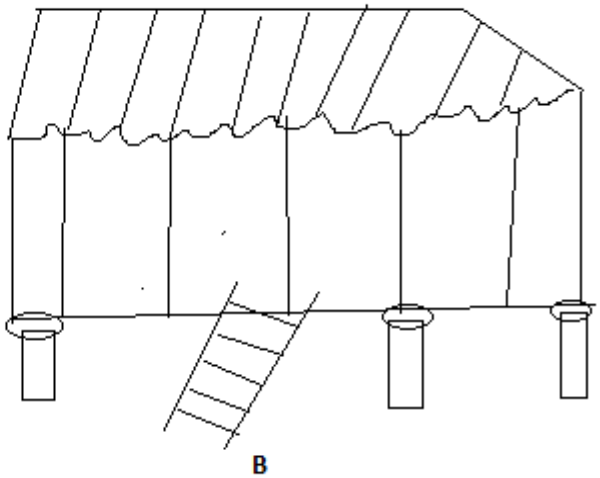
## SECTION B (20MKS)

**Answer All questions**

**20.** The diagram labeled A and B illustrate storage structures study the diagram carefully and answer the question that follows.



A



B

**(a)** Identify the structures **(2mks)**

**A**

**B**

**(b)** State four structural differences between **(A and B)**

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**(c)** State four maintenance practices carried out on stradine **(2mks)**

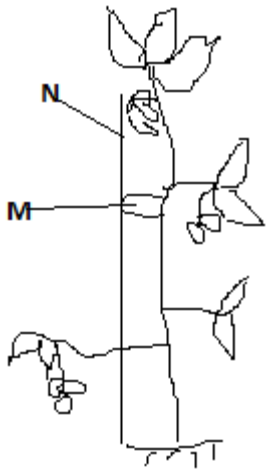
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**21. (a)** Identify the practice illustrated **(1mk)**




**(b)** Name material used in N and M and then uses **(2mks)**

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**(c)** List down four problems faced by a farmer who does not carry out the practice **(4mks)**

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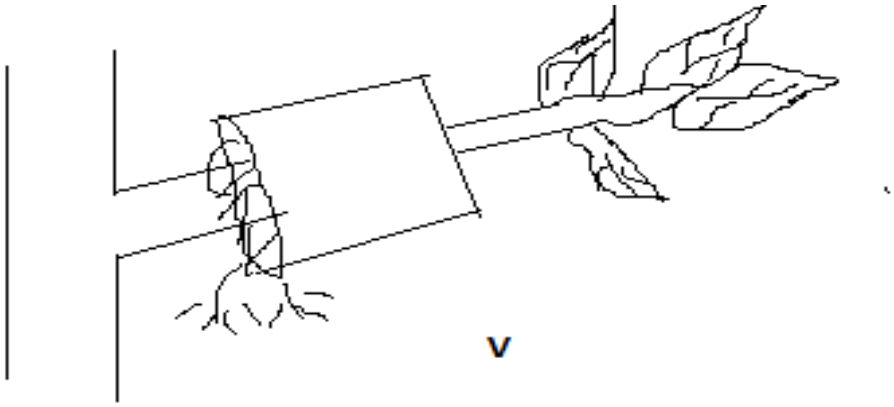
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**22.** The diagram below illustrates a method of propagating some of the common field crop. Study the diagram and answer the questions that follows




**(a)** Identify the method illustrated **(1mk)**

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**(b)** Name two field crop which can be propagated using above method **(2mks)**

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**(c)** State two conditions to be ensured at point V to ensure full rooting **(2mks)**

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## SECTION C 40MKS

**23.** Discuss the production of bean under the following sub-headings **(20mks)**

(a) Land preparation **(4mks)**

(b) Selecting and treatment of planting materials **(4mks)**

(c) Planting **(4mks)**

(d) Field management practices **(4mks)**

(e) Harvesting of bean **(4mks)**

**24.** State five advantages and disadvantages of overhead irrigation **(10mks)**

(b) State factors used in choosing irrigation methods **(5mks)**

(c) What are the uses of water in livestock farm **(5mks)**

**25.** What factors determine the number of secondary cultivation during land preparation **(5mks)**

(b) Give reasons why minimum tillage may be carried out **(6mks)**

(c) Explain the activities carried out in tertiary cultivation **(6mks)**

(d) What are the factors that determine the depth of ploughing **(3mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# AGRICULTURE

## PAPER 2

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**QUESTIONS**

**1.** State four preparation practices carried out in a store before crop produce is brought in for storage **(2mks)**

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**2** Give problems associated with mineral deficiency imbalance in livestock **(2mks)**

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**3.** State four factors that lowers the performance of an animal **(2mks)**

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**4.** State one use of the following farm tools **(2mks)**

**(a)** Pipe wrench

**(b)** Sickle

**(c)** Slasher

**(d)** Tin snip

**5.** Explain briefly four factors that affect maintenance ration requirement of an animal **(2mks)**

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**6.** Give four factors considered when selecting dairy goat **(2mks)**

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**7.** State four features for inbreeding **(2mks)**

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**8.** Define cross breeding in livestock production

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**9.** Name four meat breeds of rabbit **(2mks)**

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**10.** State the gestation period of the following animals **(1mk)**

Saw-

Cattle -

**11.** Outline four characteristics that enable camels to survive in desert **(2mks)**

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**12.** Name two commercial feeds fed to layers **(1mk)**

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**13. (a)** What organic causes Newcastle disease in birds **(2mks)**

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(b) State four specific symptoms of Newcastle disease **(2mks)**

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**(c)** Give 2 methods of controlling the disease **(1mk)**

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**14. Give two** feeding characteristics of goats which make them less vulnerable to internal Parasite **(2mks)**

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**15. Give two** characteristics of roughages **(1mk)**

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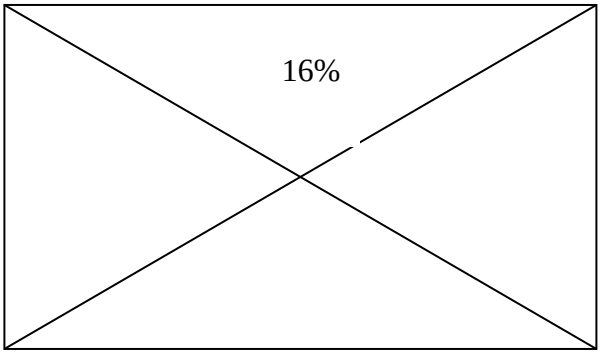
**16. Mention two** methods of preventing rusting in farm tools **(2mks)**

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## SECTION B 20 MARKS

**17.** The diagram below represents a method of ration computation. Study and answer the questions that follows




**(a)** Identify the method above **(1mk)**

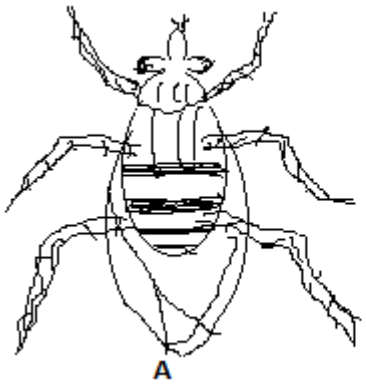
**(b)** In a practical lesson form three student of agriculture were supplied with the following specimens

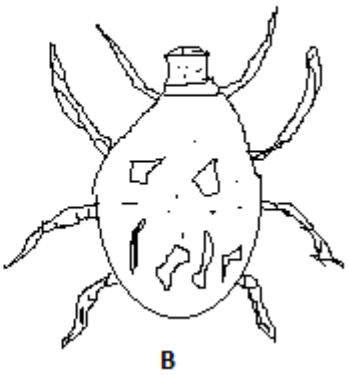
(i) crushed marshed labeled I

(ii) Bloodmeal labeled J

Calculate the quantity of the specimen I (8% DCP) and J 28% DCP) that can be mixed to make 150 kg of feed containing 16% DCP **(4mks)**

**18.** The diagram below illustrate external parasite study the diagram and answer the question that follow




**(a)** Identify the two parasite labeled AB **(2mks)**

A

B

**(b)** Name one disease tramsimitted by A and B **(2mks)**

A

B

**(c)** Name the class of chemicals used to spray and control parasite Aand **B** **(2mks)**

A

B

**(d)** Mention two harmful effect of parasites A and B in livestock production apart from disease transmission **(2mks)**

**A**

**B**

## SECTION C

**19. (a)** Describe the desirable features of a grain store **(10mks)**

**(b)** Describe the importance of keeping healthy animal **(10mks)**

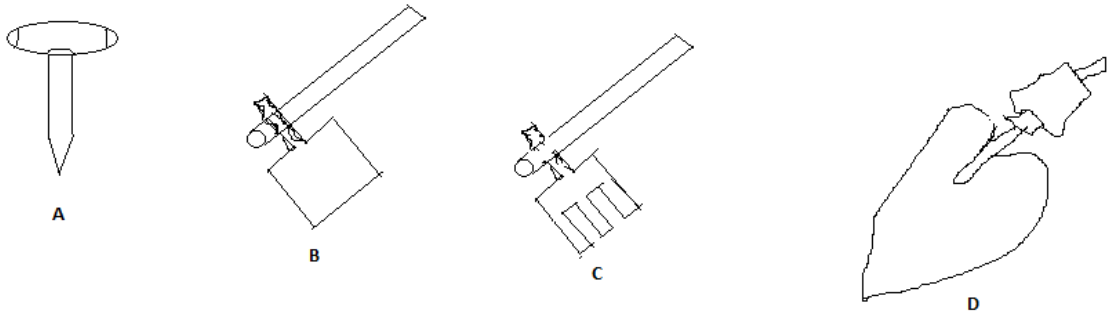
**20.** Describe the process of egg formation in poultry production with an aid of a diagram **(20mks)**

**21. (a)** Define parasite as it applies in livestock management stating animals mostly affected **(4mks)**

(b) What economic importance are parasite to livestock **(10mks)**

(c) Give 3 examples of internal and external parasite **(6mks)**

**22.** Diagram A, B, C, and D illustrate some farm tools and equipments




**(i)** Give their names **(2mks)**

**A**

**B**

**C**

**D**

**(ii)** Give one function of each tools **(2mks)**

**A**

**B**

**C**

D

**(iii)** Classify each tools in appropriate category **(2mks)**

**A**

**B**

**C**

**D**

**(iv)** State one appropriate maintenance that can be done on tool A **(1mk)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# BUSINESS STUDIES

## PAPER 1

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**1. State** four factors that determine the period which documents should be stored **(4mks)**

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**2**. In the table below identify the type of utility for each circumstance (4mks)

| | |
|---|---|
| Processing and packing of sugarcane in a sugarcane in a sugarcane factory | |
| Selling shoes in a market | |
| Transporting milk from Kiambu to Thika | |
| Storing goods in a warehouse | |

**3.** Highlight four limitations of using consumer initiated methods in consumer protection **(4mks)**

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**4.** Highlight five ways in which consumer benefits from warehousing **(5)mks)**

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**5.** Identify four situations when differed payments would be used **(4mks)**

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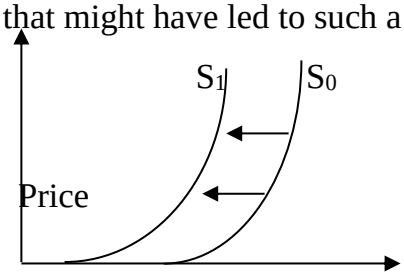
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**6**.The figure below shows a shift in supply.

State four possible causes that might have led to such a situation **(4mks)**




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**7.** Identify four factors that affect the circular flow of **income** **(4mks)**

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**8.** A resource is something used by the business to achieve an objective. Identify four resources found in a business **(4mks)**

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**9.** Outline four features of monopoly structure of market **(4mks)**

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**10.** Outline four features of an insurable **risk** **(4mks)**

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**11.** Outline four measures that an employer can take to improve his/ her human resource **(4mks)**

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**12.** Highlight four benefits experienced by a holder of a credit card **(4mks)**

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**13.** Identify four reasons why one would prefer to use air transport to transport goods from one place to another **(4mks)**

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**14.** Outline four features that constitutes a market **(4mks)**

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**15.** Give four reasons why one would prefer to buy food first before buying a television **(4mks)**

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**16.** State four contents of a cover note **(4mks)**

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**17**.Identify the type of advertisement described **below** **(4mks)**

| | |
|---|---|
| Any mention of a person/ firm or media | |
| Any paid form of impersonal presentation of a product made through mass communication media. | |
| Presentation of a commodity to prospective buyers, face to face by a sales person with an aim of making sales | |
| Process of information with a view of creating, promoting or maintaining good and favorable image of a firm | |

**18.** Identify four gaps in a market that may bring a business opportunity in a market **(4mks)**

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**19.** Identify four factors that may determine location of an office **(4mks)**

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**20.** State five reasons why a firm may decide to remain small in an economy dominated by large firms **(4mks)**

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**21.** Outline four measures an office may take to safeguard the organizations **property** **(4mks)**

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**22.** Outline four circumstances under which per capital income statistics would be a good indicator of the welfare of the citizen of a **country** **(4mks)**

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**23.** Outline four factors that may constitute an efficient transport system **(4mks)**

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**24.** Outline four factors that may account for predominant direct production in a **country (4mks)**

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**25.** In the space provided, indicate with a tick whether the information relates to preference shares or ordinary shares **(3mks)**

| Statement | Preference | Ordinary |
|---|---|---|
| Represent real owners of company | | |
| Rate of dividend is fixed | | |
| Has voting right | | |
| Redeemable | | |
| May be cumulative | | |
| Considered last in liquidation | | |

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# BUSINESS STUDIES

## PAPER 2

**TIME: 2½ HOURS**

**NAME..... ADM NO; .....**

**CLASS..... DATE.....**

*Answer any FIVE questions.*

**1.** a) Explain **five** benefits that would accrue to a businessman who uses a Liner rather than Tramps Steamers. **(10mks)**

b) Using a diagram, describe the effects of outward shift in supply curve on equilibrium price and quantity. **(10mks)**

**2.** a) Explain ***four*** measures that may be taken by the government to promote her export.**(8mks)**

b) The following Trial Balance was extracted from the books of Kisumu Auto spares as at 31st Oct 2022

**Kisumu Auto Spares**
**Trial Balance**
**As at 31st Oct 2022**

| | DR | CR |
|---|---|---|
| Capital | | 653,560 |
| Motor vehicle | 603,000 | |
| Equipment | 200,600 | |
| Furniture | 94,400 | |
| Debtors | 75,900 | |
| Creditors | | 74,300 |
| Carriage on sales | 14,400 | |
| Discount Received | | 26,400 |
| Salaries | 12,400 | |
| Rent Income | | 12,600 |
| Sales | | 319,400 |
| Purchases | 300,000 | |
| Advertising | 22,200 | |

| | | |
|---|---|---|
| Rates | 9,400 | |
| Stock 1-11-2021 | 61,500 | |
| Bank | | 412,600 |
| Cash | 105,060 | |
| **TOTAL** | **1,498,860** | **1,498,860** |

Stock on 31st October 2022 was sh. 80,200

**Required,**

(i) Prepare Trading ,Profit and Loss account for the year ended 31st Oct 2022

(ii) Prepare Balance sheet as at 31st October 2022 **(12mks)**

**3.** a) Explain **Five** circumstances under which a manufacturer would find it advisable to distribute his goods through wholesalers. **(10mks)**

b) Explain ***five*** functions of the central bank of Kenya in the Economy. **(10mks)**

**4.** a) Distinguish between shares and debenture as a source of finance. **(10mks)**

b) Outline five circumstances under which a firm will be located near the market for its products. **(10mks)**

**5.** a) The following information relates to Bizna Distributor Company for the year ended 31st Dec 2009

| | **shs** |
|---|---|
| Gross profit | 600,000 |
| Opening stock | 285,000 |
| Sales | 2,400,000 |
| Purchases | 1,830,000 |
| Expenses | 360,000 |
| Closing stock | 315,000 |
| Fixed assets | 400,000 |
| Debtors | 900,000 |
| Bank | 35,000 |
| Current liabilities | 438,000 |

**Required calculate**

i) Margin **(2 ½ mks)**

ii) Rate of stock turnover **(2 ½ mks)**

iii) Return on capital employed **(2 ½ mks)**

iv) Current ratio **(2 ½ mks)**

b) Explain **five** ways in which the Entrepreneur contributes to the production of goods.**(10mks)**

**6.** a) Describe **five** means of payment that a trader may use to settle business debts. **(10mks)**

b) Explain **five** indicators of under development in Kenya. **(10mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# ENGLISH

## PAPER 1

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**1. FUNCTIONAL WRITING**

Imagine that you are organizing secretary of Ruth Kerubo's Graduation Party.Ruth has just graduated with a First Class Honor's from Kenyatta University.

(a)Design an invitation card to be sent to the guests . **(10mks)**

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b) Write a congratulatory note to Ruth to be presented that day **(10mks)**

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## 2. CLOZE TEST (10mks)

***Read the passage below and fill in each blank space with the most appropriate word .***

Passing National Examination in Kenya has become a matter of life and 1_____ .This is primarily because, more often than not,examination 2_____ the future of the student. From our collective experience this is very clear. A standard eight pupil must 3_____ well to secure a place in a good 4_____ school. Similarly, a form four candidate must not just pass, but must also be among the students who join public 5 _____ .The reverse often has painful consequences for the student , 6_____ means falling by the wayside and in a country with limited employment 7 _____ , chances of a decent livelihood become severely compromised .It is precisely because of those stark realities that students find 8_____ under seething pressure to pass 9_____ . On the other hand , parents who know all too well that failing to score good grades could mean that the end of the road of their children's 10_____ are willing to cut all corners to ensure the children pass their exams.

## 3. ORALSKILLS (30mks)

(a) Read the narrative below and answer the questions that follow.

**The cock and the kite**

(The setting of the story is in Kibiro , Uganda in the Western Rift Valley near Lake Albert)

A long time ago, there lived cock and his family as well as kite and his family .The former was hard working while the latter was lazy .It happened that the place was hit by a famine .People from far used to travel a long way to go to Kibiro to barter food for salt .It also happened that both families ran out of salt. Cock's wife informed her husband that they had ran out of salt and asked him to take some finger millet to Kibiro .He agreed , went to Kibiro , obtained salt and set upon the return journey .

The other family got wind of this .Mrs.Kite also asked her husband her husband to go to Kibiro and try to get salt since the lazy family did not have anything to take to Kibiro .On the way , he met the cock resting on his way home with the salt behind him .He was standing on one leg having hidden one of his leg in his wing , as cocks do many times when resting .Kite asked cock how he managed to get the salt , where upon cock told kite that the salt miners ad cut off one of his legs in exchange for the salt .Kite accepted the lie and proceeded towards Kibiro ready to do the same .Cock continued on his journey and got home safely .

On arrival at Kibiro, Kite offered his leg for a bundle of salt which the miners readily accepted .His leg was consequently amputated , rendering him immobile , even unable to carry home salt .poor kite flew back home, where he was received by his family in much grief , especially when he narrated to them the ordeal he went through . Later, kite's family was to receive the traumatizing news that cock had actually ill-advanced Kite, leading to loss of his leg.

Hence forward, great enmity ensued between the two families with Kite's family swearing to retaliate by hunting Cock's family down and eat them. This goes -+on to date.

**(i)**The narrator notices signs of inattentiveness among the audience during the story telling session what could be the proble**m?** **(3mks)**

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**(ii) Explain** how you would make the narration of the first two paragraphs effectiv**e. (2mks)**

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**(iii)**Mention two ways in which you would know that your audience in this story is fully participating in the **performance.** **(3mks)**

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……

**(b)Underline the silent letter in the words below (4mks)**

Pseudo

Subtle

Deign

Damn

(c)Explain the meaning brought out by stressing the underlined word in each of the following sentences**.** **(3mks)**

(i) Muriithi spoke to Gatwiriyesterday.

……

……

(ii) Muriithispoke to Gatwiriyesterday.

……

……

(iii)Muriithi spoke to Gatwiriyesterday.

……

……

**(d)Read the following conversation and answer the questions that follow. (7mks)**

MBAIRE:hiMr.Katana , long time no see.
MR .KATANA: hello Mbaire , how have you been for so long ?
MBAIRE:I'm fit as you can see .
MR.KATANA :What a surprise to see you here!Do you live around this area?
MBAIRE:Zi , just popped in to have a glimpse of some associates of mine .And you ?
MR.KATANA : Well , I came to visit a colleague who has been ailing for some time .You rememberMr.Kwach ?
MBAIRE:Yes , the leopard !Who can forget him ? He used to …..
MR.KATANA:Well , I must be going .Goodbye.
MBAIRE:See you.

(i)Identify one short coming in Mbaire's responses**.** **(2mks)**

……

……

(ii)Give three aspects of speech that Mbaire needs to consider so as to communicate effectively and in an appropriate manner. **(3mks)**

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(iii)Give two possible reasons for Mr .Katana's exit before Mbaire finishes speaking. **(2mks)**

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……

……

Outline four shortcomings that one can face when undertaking field work

……

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……

(e)Write another word pronounced the same way as the word given below. **(2mks)**

Call-

Awe-

(f)In the words given below .Underline the part that should be stressed**.** **(2mks)**

(i)Excuse

(ii)Reject

(noun)

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# ENGLISH

## PAPER 2

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**QUESTION 1.COMPEREHENSION PASSAGE(20 MARKS)**

***Read the following passage and answer the questions that follow***

You may think that expecting food to change your life is too much to ask. But have you considered that eating the right food at the right time will increase your energy, help you manage weight and ward off major illness?

Researchers have found that eating a meal with plenty of protein leaves you feeling more satisfied for longer when compared to a meal loaded with low-quality carbohydrates. your body takes longer to digest protein, leading to a gradual increase in blood sugar. The high protein breakfast will therefore carry you through the morning and ,more importantly ,through your tea break. Many high-carbohydrate meals are absorbed quickly and send blood sugar on a roller coaster ride, taking your appetite with it and depleting your energy.

Many foods contain antioxidants neutralize molecules known as free radicals before they damage arteries and body cells. This protects you from heart diseases, high blood pressure, cancer and diabetes; you can now see why antioxidant foods should be consumed in generous portions. Actually, forget pills-antioxidants work best when consumed in foods. In fact, nutritionists recommend that we eat five portions of fruit and vegetables a day. Its less daunting than it sounds: a portion equals a piece of fruit, three tablespoons of cooked vegetables or a glass of flesh juice.

And do you desire to relieve yourself of some baggage? calcium is the latest weight –loss star to appear on the scene. Scientists stumbled on its magic by accident. From a study that measured the blood pressure of obese people, it was discovered that those who took one large tub of yoghurt a day in their diet lost an average of eleven pounds of body fat in one year, even though they did not eat less.

A follow-up study found that people high-calcium diet lost more weight and fat than did people on a low calcium diet- and again, both consumed the same number of calories.

Researcher*believe calcium encourages fat cells to stop "getting fatter". Instead, the cells burn extra fat without you having to go anywhere near a gymnasium.

It probably sounds strange to say that you can eat more in order to lose weight .Obviously, the question you should ask immediately is, "Eat more of what?"We are talking about foods rich in fibre . They have what is refer to as low energy density; that translates to few calories relative to weight. This means that you can down a mountain without fear of calorie overload.

Fibre also aids weight loss because its filling. Most high fibre foods take a lot of chewing triggering your bodies fullness sensors. Moreover, you absorb the food more slowly so you feel full longer. Will the wonders of food ever cease? Not if researchers in nutrition keep up their pace. Let them keep the good news flowing-such as the fact we don't have to starve ourselves to lose weight and keep disease at bay.

**Questions**

**a.** From the information given in the first paragraph, how can you improve your life?**(2 marks)**

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**b.** In not more than 35 words, summarize the effects of eating **carbohydrates.** **(4 marks)**

……

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**c.** Explain how free radicals contribute to the occurrence of high blood pressure and cancer.

**(2 marks)**

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**d.** In what two forms can antioxidants- be consumed? **(2 marks)**

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……

**e.** "In fact nutritionists recommend that we eat five portions of fruits and vegetables a day."

Rewrite the sentence above as a question without changing the meaning, beginning:

Don't…….. **(1 mark)**

……

**f.** What is the attitude of the author towards calcium calcium as a weight –cutting measure?

**(2 marks)**

……

……

**g.** According to the passage, how can you use up excess fat? **(2 marks)**

……

……

**h.** Identify an instance of irony in the passage. **(2 marks)**

……

……

**i.** Explain the meaning of the following words as used in the passage. **(3 marks)**

i. Daunting-

ii. Baggage-

iii. Down a mountain-

**QUESTION 2**

***Read the excerpt below and answer the questions that follow. (25 marks)***

First, there was a loud crash. Some moving object had hit another moving object. A trailerhooked to a truck negotiating a turn at a roundabout had broken free, spun outward, and ended up on top of a minibus in an adjacent lane. The drivers of both vehicles had then runaway. They had done so to avoid mob justice.

Now the passengers in the unlucky minibus were struggling to get out, except for one—a woman trapped in a seat. A man had seen her on his way out. He tried to go back in and get her out, but all doors had jammed. He pulled a mobile phone out of his pocket and called themystical number — 999 — to report distress and request help. The hour was ten in the morning.

Onlookers started arriving. First, they only gawked, fascinated by the spectacle of a trailer sitting on top of a minibus. Goodness, how did it get there! Later, their attention moved downto the woman trapped inside the minibus. "Look," said one onlooker. A beautiful girl was trapped in her seat. She was still conscious. "She is fine, then," said another onlooker. "Comeon," said the first onlooker. "A heavy trailer is sitting on her minibus, so how can she be fine?" When the onlookers became a crowd, they tried to push the trailer off the minibus.

They failed. Then a big van appeared...

## QUESTIONS

**a)** Put this extract in its immediate context. **(4 marks)**

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**b)** Give the character traits of the following:

**i)** The man

**ii)** The onlookers

**iii)** The drivers **(6 marks)**

**c)** From elsewhere in the novel, how does conflict arise between Kimani and Asiya overthe death of their daughter? **(4 marks)**

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**d)** How is dialogue significant in this excerpt**?** **(4 marks)**

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**e)** Explain one stylistic device used in the extract. **(2 marks)**

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**f)** "The hour was ten in the morning." Rewrite this statement beginning with **(1 mark)**

**g)** Explain the meanings of the following words as used in the excerpt. **(3 marks)**

**i)** Gawked

**ii)** Fascinated

**iii)** Conscious

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

**A TAXI DRIVER ON HIS DEATH BED (By Timothy Wangusa)**

When with prophetic eye I peer into the future
I see that I shall perish upon this road
Driving men that I do not know
This metallic monster that I now dictate,
This docile elaborate horse,
That in silence, seems to simmer and strain
Shall surely revolt some tempting day.
Thus I shall die: not that I care
For any man's journey,
Nor for the proprietor's gain.

Nor yet the love of my own.
Not for these do I attempt the forbidden limits.
For these defy the traffic man and the cold cell,
Risking everything for the little, little more.

They shall say, I know, who pick up my bones,
"Poor chap, another victim to the ruthless machine"
Concealing my blood under the metal.

## Questions

**a)** What is the poem about? **(3mks)**

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**b)** What is the attitude of the persona towards his fate? **(2mks)**

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**c)** With illustrations, identify the persona in the poem **(2mks)**

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**d)** What is the irony in the poem? **(2mks)**

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**e)** With illustrations, identify and comment on any other two stylistic devices used in the poem **(6mks)**

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**f)** Comment on the following line **(2mks)**

"Poor chap, another victim to the ruthless machine"

……

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**g)** How will the persona's death come about? **(2mks)**

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**h)** Give the poem another title (**1mk)**

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**QUESTION 4**

**a.** After each of the following words, write a word that is gender sensitive. **(3 marks)**

**i.** Spokesman-

**ii.** Airhostess-

**iii.** Cleaning lady-

**b.** Use the correct form of the word in brackets to complete each of the following sentences. **(3 marks)**

**i.** Owino did not know that a tree had…….(strike) his house

**ii.** Nobody expected the company to make ……..(lose)

**iii.** The three……..(passer-by)were arrested.

**c. <u>Fill in the blank spaces below with the correct form of the verb in brackets.(3 marks)</u>**

**i.** The team was……..…... for coming late.(qualify)

**ii.** They were……..…..……attacked by the gangsters.(vicious)

**iii.** The ……..of the matter brought the president to their county.(grave)

**d. <u>Fill each blank space in the following sentences with the correct preposition.(6 marks)</u>**

**i.** Sometimes it is quicker to go……..……..foot than……..bus.

**ii.** Sign your name…….…the dotted line……...the bottom of the page.

**iii.** There is something exciting……...…football.

Throughout Kenya, football matches are played……..…..capacity crowds.

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# ENGLISH

## PAPER 3

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**1. IMAGINATIVE COMPOSITION**

*Either*

a) Write a story starting with:

As I said goodbye to her, little did I know that would be the last time I would be seeing her…

(**20 Marks)**

***Or***

b) Write a composition to illustrate the following proverb:

"Beauty lies in the eyes of the beholder." (**20 Marks)**

**2. THE NOVEL (COMPULSORY)**

**FATHERS OF NATIONS**

Discuss the relevance of the Title '**Fathers of Nations** 'by **Paul B. Vitta** **(20marks)**

**OR**

**3.THE PLAY (COMPULSORY)**

**THE SAMARITAN(20marks**)

"Conflict in the society is inevitable." Using John's Lara's play, *The Samaritan,* for examples, write an essay to validate this assertion. **(20 marks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# KISWAHILI

## PAPER 1

**TIME: 1¾ HOURS**

**NAME..... ADM NO; .....**

**CLASS..... DATE.....**

**MAAGIZO**

1. *Andika Insha m**bili***
2. *Swali la **kwanza** ni la **lazima***
3. *Chagua insha nyingine kutoka hizo tatu zilizobaki*
4. *Kila insha isipungue maneno **400***
5. *Kila insha ina alama **20***

**MASWALI**

1. Halmashauri ya utunzi wa mitihani nchini imewatahadharisha watahiniwa dhidi ya udanganyifu katika mitihani ya kitaifa. Andika tahadhari hiyo na hatua zitakazochukuliwa dhidi ya watakaozikiuka.
2. Katiba mpya imewapa vijana uhuru wa kujitegemea na kujiendeleza kimaisha. Thibitisha
3. Pilipili usiyoila yakuashiani?
4. Andika hadithi itakayomalizikia kwa:
   ……kisa hiki kilinifundisha kwamba kuzaliwa masikini si hoja.

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# KISWAHILI

## PAPER 2

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**MAAGIZO KWA MTAHINIWA**

- *Jibu maswali yote.*
- *Majibu yote yaandikwe katika nafasi zilizoachwa katika kijitabu hiki cha maswali.*
- *Tumia hati safi.*

***KWA MATUMIZI YA MTAHINI PEKEE***

| **Swali** | **Jumla** | **Tuzo** |
|---|---|---|
| 1 | 15 | |
| 2 | 15 | |
| 3 | 40 | |
| 4 | 10 | |
| **JUMLA** | 80 | |

**1. UFAHAMU (Alama 15)**

***Soma makala yafuatayo kasha ujibu maswali***

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

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

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

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

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

Tukitoka katika muktadha wa kifamilia na kumulika ulimwengu wa kazi iwe ni katika afisi za kiserikali au kwenye makampuni binafsi, ukweli ni kwamba kiongozi yeyote yule aliyefaulu katika usimamizi wake mara nyingi huwa na mke nyumbani ambaye wanashauriana kila uchao kuhusu kazi anayofanya hata kama mke hafanyi kazi mahali pale. Hisia na mawaidha anayotoa mke kwa mume wake ni tunu na huenda asiyapate kwingineko kokote hata katika vitabu vya kupigiwa mifano. Hii ni mojawapo ya sababu ambayo huwafanya viongozi wa nchi mbalimbali kupenda sana kuwatambulisha wake na familia zao waziwazi kwa vile wanajua kuwa jamii inathamini sana msingi wa jamii. Kiongozi ambaye hana mke au familia au yule ambaye mke wake hatambuliki, hutiwa mashaka na jamii hata kama ni kiongozi aliye na azma ya kushikilia kazi ngumu ya kuongoza umma.

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

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

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

## MASWALI

**(a)** Ina maana gani kusema kuwa wanaume hawana budi "kutembea na majira?" **(alama2)**

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

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

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

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

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

Kushamiri……

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Hulka……

……

Azma……

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## MUKHTASARI (Alama 15)

*Soma taarifa ifuatayo kasha ujibu maswali yatakayofuata.*

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

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

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

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

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

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

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

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

## MASWALI

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

***Nakala chafu:***

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***Nakala safi:***

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

***Nakala chafu.***

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**Nakala Safi.**

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## MATUMIZI YA LUGHA (Alama 40)

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

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**b.** Andika sentensi ifuatayo ukitumia kinyume cha neno lililoandikwa kwa herufi ya mlazo:

**(alama 1)**

Binadamu hawezi *kumuumba* mwenzake.

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……

**c.** Andika sentensi ifuatayo upya ukizingatia kisawe cha neno lililopigwa mstari: **(alama 1)**

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

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**d.** Andika kwa usemi halisi: **(alama 3)**

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

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

Pinde……

……

**f.** Sahihisha sentensi zifuatazo :

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

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

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

**(i)**

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**(ii)**

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**h.** Akifisha: **(alama 2)**

Mtume asimame nusura aingie kwenye shimo la taka

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

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

Watu wanne walipeperushwa juu kwa juu na upepo mkali.

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

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

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

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

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

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**o.** Andika umoja wa sentensi: **(alama 1)**

Kwato za wanyama hutufaidi.

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**p.** Andika kwa wingi **:** **(alama 4)**

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

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

Kuku hawa wamemsumbua Sabina kwa muda mrefu.

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**r.** Tumia sentensi moja moja kubainisha tofauti kati ya sentensi **sahili** na sentensi **ambatano**

**(alama 2)**

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

Mwanasiasa aliyewapuuza wanaeneo bunge lake amekomelewa. **(alama 4)**

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

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

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

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

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## ISIMUJAMII (Alama 10)

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

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

**(alama 8)**

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# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# KISWAHILI

## PAPER 3

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

*Jibu maswali yote*

**SEHEMU YA A: FASIHI SIMULIZI.**

**1.** a) Eleza umuhimu wa nyimbo katika usimulizi wa hadithi. **(al.4)**

b) i)Eleza maana ya misimu. **(al.2)**

ii) Taja mifano yoyote miwili ya misimu**.** **(al.2)**

c) Taja sifa tatu za vitanza ndimi. **(al.3)**

d) Taja sifa tatu za vitendawili**.** **(al.3)**

e) Fafanua umuhimu wa vitendawili. **(al.6)**

**2. SEHEMU YA B: USHAIRI.**

*Soma shairi lifuatalo kisha ujibu maswali yote.*

Akosaye shukurani, zako juhudi hajali,
Hata mfanyie nini, haoni huyo hajali,
Hata mpe milioni, matusi ndio stahili,
Aona huna akili, ni yeye ndiye mshindi.

Patia kila la shani, bure unajisumbua,
Takuona kama nyani, tena atakunyambua,
Akuona punguani, chochote hutaambua,
Usingoje shukurani, tenda wema wende zako.

Utafute kwa juhudi, bila kukata tamaa,
Mpe apate faidi, wala asipate njaa,
Hatachoka kukaidi, atakuletea baa,
Na mawazo yakujaa, maishayo hafikiri.

Mpe vyote vya haluwa,wenzako wamtamani,
Hatakupa ya muruwa, juhudi haioni,
Ataka kuzidishiwa, asubuhi na jioni,
Ufanyacho hathamini, aongeze ya karaha.

Si ndugu wala si mwana, si rafiki si jirani,
Shukrani kiwa hana, jua uko hatarini,
Hadharani tatukana, aulize ndiwe nani,
Ambe kama hajaona, kinyangarika kamawe.
Hebu yeye msaili, amepata toa nini?
Haweziye kukubali, kukupa hata thamani,
Ni bure wake ukali, akutia mashakani,
Yake wala hayaoni, mwovu hana shukurani.

Mfadhili watengaje, jana alikuopoa,
Mwaema wambwekeaje, mabaya wayachokoa,
Mzazi wadharauje, mbali alishakutoa,
Sasa jaribu kupoa, ujifunze shukurani.

**Maswali**

**1.** Lipe shairi hili anwani mwafaka. **(al.1)**
**2.** Hili ni shairi la aina gani? Thibitisha. **(al.2)**
**3.** Eleza dhamira ya mshairi katika shairi hili**.** **(al. 2)**
**4.** Bainisha mifano mitatu ya uhuru wa mshairi katika shairi hili. **(al.6)**
5. Andika ubeti wan ne kwa lugha nathari. **(al. 4)**
6. Taja na utolee mfano tamathali zozote mbili za usemi katika shairi. **(al.4)**
7. Eleza maana ya neno hili kama lilivyotumika katika shairi hili. **(al1)**

Shani

**3. TAMTHILIA: BEMBEA YA MAISHA- TIMOTHY AREGE**

Elimu ni mafundisho muhimu yanayotolewa katika jamii. Jadili kwa kurejelea tamthilia ya Bembea ya maisha. **Alama 20**

**4. HADITHI FUPI**
**MAPAMBAZUKO YA MACHWEO NA HADITHI NYINGINE**

Jadili ufaafu wa anwani Mapambazuko ya Machweo **(alama 20)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# BIOLOGY

## PAPER 1 (THEORY)

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

*Answer **All** the questions*

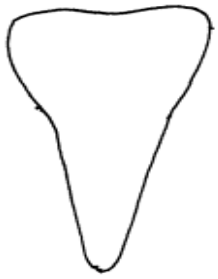
**1**. The scientific name of the cat is *FelisCatus* classify the cat into; **(3mks)**

**i)** Kingdom……

**ii)** Genus……

**iii)** Species……

**2.** The figure below shows a structure of a tooth:



**(a)** Identify the tooth: - **(1 mk)**

……

**(b)** State how the tooth named in (a) is modified to perform its function:- **(1 mk)**

……

……

**3. a)** Name the hormone secreted in the human body when one takes in a large amount of water:- **(1 mk)**

……

**(b)** Which disease results from inadequate production of the hormone named in (a) above? **(1mk)**

……

**4.** Give two structural features that can be used to separate a housefly, a millipede, and a tick into their respective classes. **(2mks)**

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**5.** State three main functions of the stomach in human beings:- **(3 mks)**

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**6.** It was found that during germination of bean seeds, 9.2 $cm^3$ of carbon IV Oxide was produced while 9.0 $cm^3$ of oxygen was used up.

**(a)(i)** Calculate the respiratory quotient of the reaction:- **(2 mks)**

……

……

……

**(ii)** Identify the substrate being met abolished:- **(1 mk)**

……

**(b)** In which part of the cell does glycolysis occur? **(1 mk)**

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**7.** State three functions of the mammalian blood other than transport **(3mks)**

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**8.** Other than sexual intercourse name the other ways by which HIV/AIDS is spread **(3mks)**

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**9.** State three characteristics features of an efficient respiratory surface **(3mks)**

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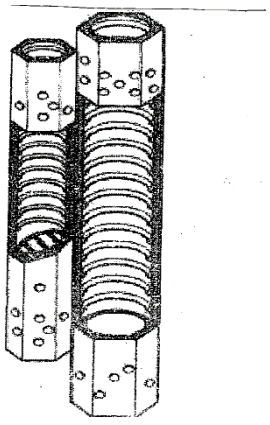
**10.** State three environmental factors that affect the rate of stomatal transpiration **(3mks)**

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**11.** The cells shown below are adapted for transport in flowering plants.



**(a)** Name the tissue in which these cells are found. **(1 mk)**

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**(b)** Identify and explain **<u>two</u>** observable features of these cells that adapt them to their role in transport. **(2mks)**

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**12.** Name two areas in human body where active transport takes place. **(2mks)**

……

……

**13.** State the functions of the following cell organelles: **(2mks)**

(a) Nucleolus.

(b) Plasma membrane

**14**.Distinguish between guttation and transpiration **(2mks)**

……

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……

**15.** What are the functions of the following parts of a light microscope? **(3mks)**

**(a)** Eye piece lens

**(b)** Condenser

**(c)** Diaphragm

**16.** (a) What is peristalsis? **(1mks)**

……

……

**(b)** Explain how the process above is brought about. **(2mks)**

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……

……

**17.** (a) State **three** structural differences between arteries and veins in mammals **(3mks)**

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**(b)** Name a disease that causes thickening and hardening of arteries **(1mk)**

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**18.** Identify **two** forces that help in upward movement of water in plants **(2mks)**

……

……

**19.** State **two** reasons why lipids are rarely used as a respiratory substrate compound to Carbohydrates. **(2mks)**

……

……

**20**. The equation below represents a metabolic process that occurs in the mammalian liver:**(2mks)**

Amino acids organic compound + urea

**(a)** Name the process **----------**

**(b)** What is the importance of the process to the mammals?

……

……

**21. (a) Define** the term balanced diet. **(2mks)**

……

……

**(b) State** the importance of roughage in a diet. **(1mark)**

……

……

**22. (a) How** do the following factors affect the rate of diffusion? **(3marks)**

**(i)** Surface area to volume ratio

……

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**(ii)** Diffusion gradient

……

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**(iii)**Temperature

……

……

**23.** Name any three specialized plant cells. **(3marks)**

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**24.** Name **three** sites where gaseous exchange takes place in terrestrial plants. **(3 marks)**

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**25.** A student in form three caught an organism which had the following characteristics

i) Body divided into two parts.

ii) Simple eyes.

iii) Eight legs.

Classify the organism up to the class level. **(3 marks)**

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**26.** (a) Distinguish between the counter flow and parallel flow system in gaseous **exchange(1mk)**

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**(b)** Which of the two systems mentioned in (a) above is efficient? Give a reason **(2mks)**

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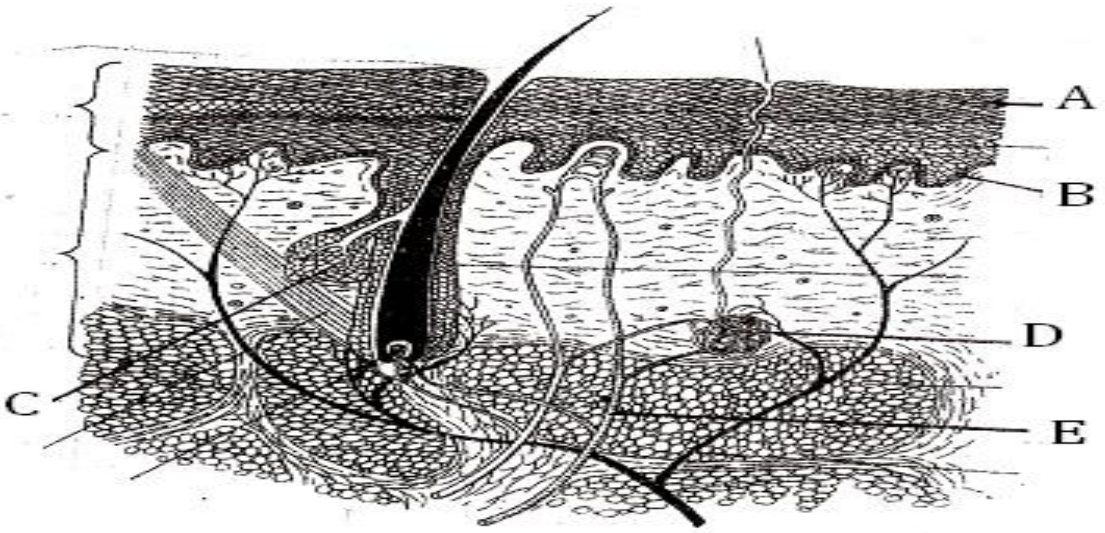
**27.** Name the enzyme, the vitamin and the metallic ions required in the clotting of blood. **(3mks)**

(i) Enzyme

ii) Vitamin

iii) Metallic ion

**28**.The figure below is a photomicrograph of a section of mammalian skin. Study it and answer the questions that follow.




**(i)** State two functions of the secretion from the gland labeled C **(2marks)**

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**(ii)** Explain the behaviour of structure E when environmental temperature falls to $10^0$c.

**(2marks)**

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**29.** Astronauts from the outer space brought a material to earth. Explain how you would establish if the material is living or non-living. **(2marks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# BIOLOGY

## PAPER 2 (THEORY)

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**SECTION A (40 MARKS)**

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

**1. a)** Distinguish between natural and acquired immunity **(l mark)**

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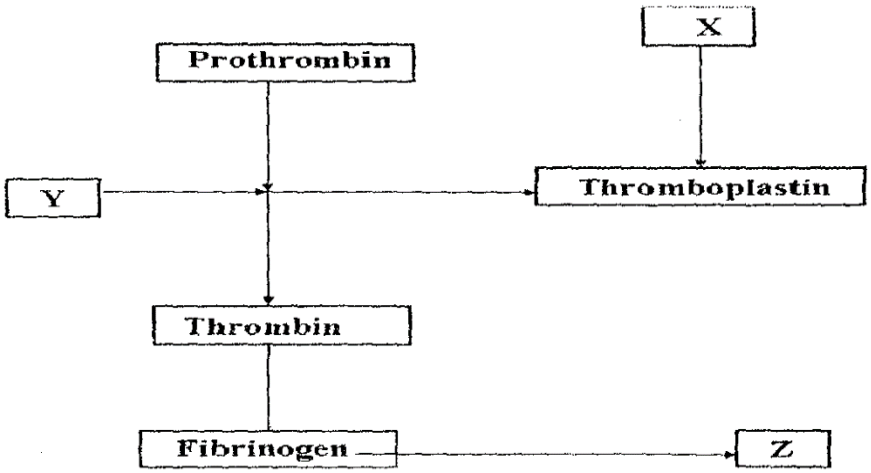
……

**b)** Define the term allergy **(l mark)**

……

……

**c)** The chart below shows the blood clotting mechanism



**i)** Name the blood cells represented by X **(1mark)**

……

**ii)** The end product of the mechanism represented by Z **(1 mark)**

……

**d)** Explain how the following environmental factors increase the rate of transpiration.

**i)** Temperature **(2 marks)**

……

……

……

**ii)** Humidity **(1 mark)**

……

……

**iii)** Atmospheric pressure **(1 mark)**

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……

**2.** A student wanted to observe human red blood cells under a light microscope. He put l0ml of solution X,Y and Z in three boiling test tubes. The solutions were of different concentration .In each of the test tubes he put three drops of blood sample. The experiment was left to stand for 30 minutes. He placed one drop of solution X on glass slide and observed under the microscope. The same procedure was repeated for solutions Y and Z.

He made the following observation.

| **Solution** | **Observation** |
|---|---|
| X | Normal Cells |
| Y | Wrinkled Cells |
| Z | No cells observed |

(**a**) What was the physiological process observed. **(1mk)**

……

**(b)** Explain why red blood cells observed in solution Y were wrinkled. **(3mks)**

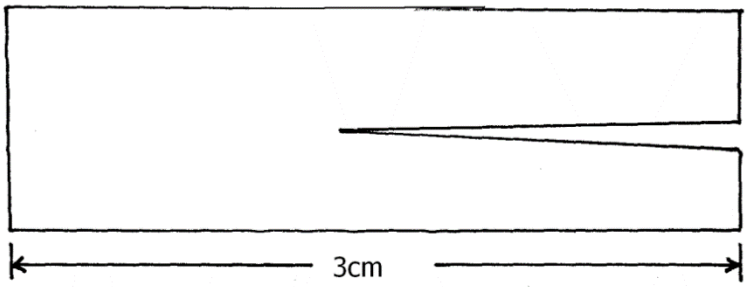
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**(c)** A 3cm long piece of kale (sukuma wiki) stem was cut halfway along its length as shown below.




**(i)** If the piece was placed in solution Z for 30 minutes, its shape changed . Using a pencil draw a diagram in the space provided to show the expected change. **(1mk)**

**(ii)** Explain the results obtained in C(i) above. **(3mks)**

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

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

……

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**(b)** What are the limitations of this method in sampling animal populations. **(4mks)**

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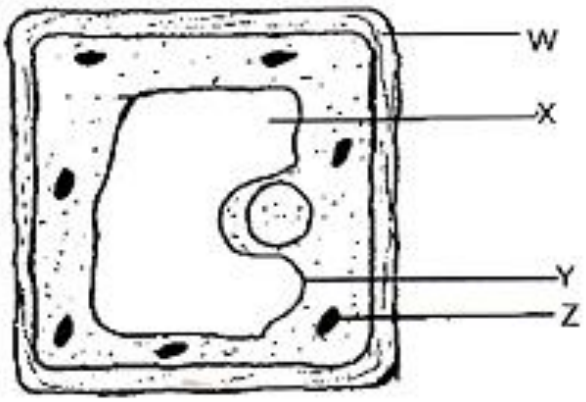
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**(c)** State two other methods which could be used to determine the population. **(1mk)**

……

……

**4.** Examine the diagram below carefully and use it to answer the questions that follow.




**(a)** Name the parts labeled X, Y, and Z **(3marks)**

**X:**

……

**Y:**

……

**Z:**

……

**(b)** State the substance by which the part labeled W is made up of **(1mark)**

……

**(c)** Name the process by which mineral salts move into the structure labeled X **(1mark)**

……

**(d)** Explain what happens to a red blood cell when placed in distilled water. **3marks)**

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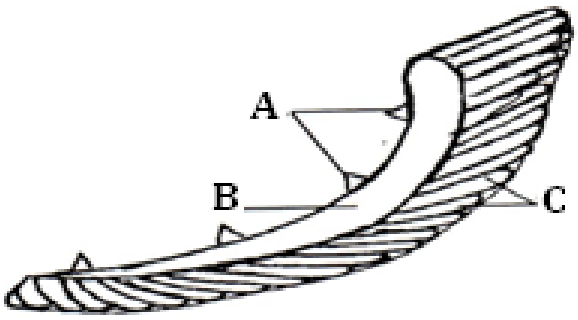
……

**5.a)Name** two sites where gaseous exchange takes place in an aquatic plant. **(2marks)**

……

……

The diagram below represents the gills of a bony fish. Study it and answer the questions that follow.




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

A:……

B:……

C:……

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

……

……

**(iii)** Explain how the part labeled C is adapted to perform its functions **(2marks)**

……

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……

**Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8**

**Question 6**

Two individuals A and B drunk volumes of concentrated solution of glucose. The amount of glucose in their blood was determined at intervals. The results are shown in the table below.

| Time (minutes) | Glucose level in blood mg / 100cm$^3$ | |
|---|---|---|
| | A | B |
| 0 | 87 | 84 |
| 15 | 110 | 123 |
| 30 | 135 | 170 |
| 45 | 115 | 188 |
| 60 | 100 | 208 |
| 90 | 95 | 202 |
| 120 | 90 | 144 |
| 150 | 88 | 123 |

**a)** On the grid provided, plot graph of glucose level in blood against time on the same axis.

**(6marks)**

**b)** What is the concentration of glucose in the blood of A and B at the 20$^{th}$ minute? **(1mark)**

……

……

……

**c)** Explain why the glucose level in person A stopped rising after 30minutes while it continued to rise in person B. **(2marks)**

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……

……

**d)** Account for the decrease in the glucose level in person A after 30minutes and person B after 60minutes. **(4marks)**

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**e)** Name the compound that stores energy released during oxidation of glucose. **(1mark)**

……

**f)** State five factors that determine energy requirements in human **(5marks)**

……

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**g)** Name the organ in which control of blood sugar level mainly takes place. **(1mark)**

……

**7. (a)** State four characteristics of gaseous exchange surfaces. **(4mks)**

**(b)** Describe the mechanism of gaseous exchange in a mammal. **(l6mks)**

**8. (a)** What is meant by the term digestion? **(2mks)**

**(b)** Explain the role of bile in the digestion of food. **(4mks)**

**(c)** Describe the digestion of protein in the human body. **(l4mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# BIOLOGY

## PAPER 3 (PRACTICAL)

**TIME: 1¾ HOURS**

**CLASS…… DATE……**

**CONFIDENTIAL**

**BIOLOGY PAPER 3**

***Solution G*** is prepared by adding albumen from 1 egg in 500cm$^3$ of water then added 20g of sucrose and stir the mixture thoroughly.

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# BIOLOGY

## PAPER 3 (PRACTICAL)

**TIME: 1¾ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**NAME……. ADM NO; …….**

**CLASS…… DATE…….**

**INSTRUCTIONS TO CANDIDATES:**

**1.** You are provided with food substance labeled solution G. The reagent provided are Iodine solution, Benedicts solution, 2M HCl acid, 10% Sodium hydroxide solution Copper (II) sulphate and 10-% Sodium hydroxide solution.

(a) Perform food tests and fill in the table below. **(12 mks)**

| Food substance | Procedure | Observation | Conclusion |
|---|---|---|---|
| | | | |

| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**(b) (i)** Name the enzyme responsible for digestion of food substance present in G in two named regions of the human alimentary canal. **(2 mks)**

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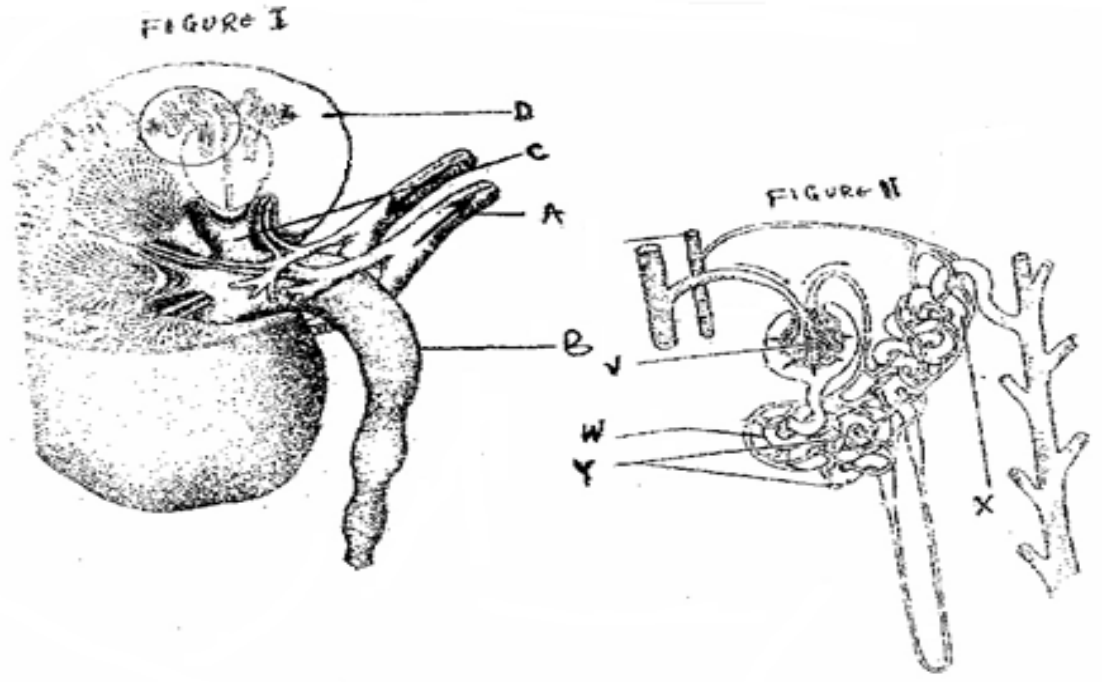
**(ii)** Name three deficiency diseases in children that may result from lack of one of the food substances in G. **(1 mk)**

……

……

……

**2.** Study the kidney diagrams below.




**(a) (i)** Name the parts labeled **A**, **B**, **C** and **D** in figure **1**. **(4 marks)**

……

……

……

……

**(ii)** Name the processes that take place in the parts labeled. **V and W** **(2 marks)**

……

……

**(b)** State **two** adaptations of the part labeled **W**. **(2 marks)**

……

……

……

**(c)** On the diagram name the part where counter current flow occurs. **(1 mark)**

**(d)** State **two** homeostatic functions of the diagram above. **(2 marks)**

……

……

**(e) Explain** what will happen to the process of urine formation in absence of vasopressin hormone. **(4 marks)**

……

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**3.** The photographs on the leaf attached are of animals belonging to the same taxonomic unit (class).







**a) i)** Name the class to which the organisms in the photographs belong. **(1mk)**

**ii)** State three reasons for your answer in a) (i) above. **(3mks)**

……

……

……

**b)** State three economic importance of organisms in this class. **(3mks)**

……

……

……

**c)** Use the following characteristics to prepare a two step dichotomous key of the animals in the photographs. **(4mks)**

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# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# CHEMISTRY

## PAPER 1 (THEORY)

**TIME: 2 HOURS**

**NAME..... ADM NO; .....**

**CLASS..... DATE.....**

**1. a)** Distinguish between ionization energy and electron affinity. **(2mks)**

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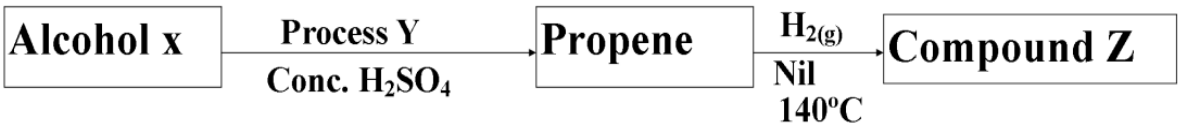
.....

**b)** The atomic number of A and B are 9 and 17 respectively. Compare the electron affinity of A and B. Explain . **(1mk)**

.....

.....

**2.** Use the reaction scheme below to answer the questions that follow.



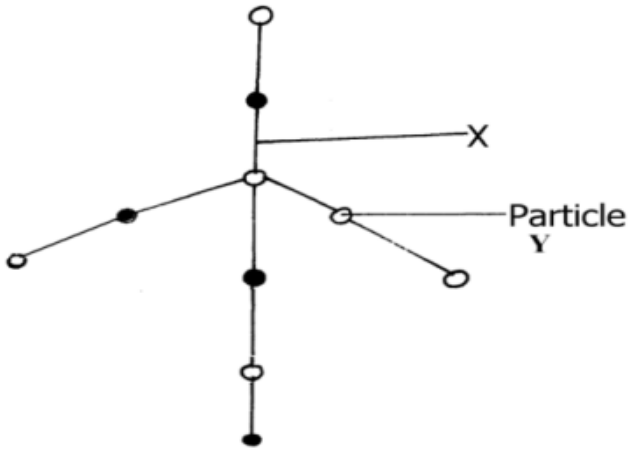

**i)** Draw the structure of alcohol X. **(1mk)**

**ii)** Name process Y. **(1mk)**

……

**iii)** Write the molecular formula of the $5^{th}$ member in which propene belong. **(1mk)**

**3**. Silicon (IV) oxide has a structure similar to that of diamond. Part of the structure is shown below.




**a)** What does x represent? **(1mk)**

……

**b)** What type of structure is shown by the diagram? **(1mk)**

……

**c)** Predict one physical property of silicon (IV) oxide and explain how it is related to its structure. **(1mk)**

……

**4.**Describe how a dry solid sample of lead (II) chloride can be prepared using the following reagents dilute nitric (V) acid dilute hydrochloric acid and lead (II) carbonate. **(3mks)**

……

……

……

……

……

**5a)** State Graham's law of diffusion. **(1mk)**

……

……

**b)Ammonia** gas diffuses 1.41 times faster than gas $XH_3$.Determine the relative atomic mass of element X.( H = 1 , N = 14) **(2mks)**

**6.** An ore of iron was found to contain 7g of iron and 3g. of oxygen.( fe = 56 O =16)

a) Workout its empirical formula. **(2mks)**

……

……

……

……

**b)** Write a balanced equation for reaction of the oxide in (a) with hot carbon. **(1mk)**

……

**7.** Carbon (iv) Oxide can undergo the changes below.

$$CO_{2(s)} \underset{B}{\overset{A}{\rightleftharpoons}} CO_{2\,(g)}$$

**a)** What are process A and B?

**A.....( 1mk)**

**B.....(1mk)**

b)Suggest one use of carbon (iv) oxide that utilizes process A and B. **(1 mk)**

……

……

**8.** The table sows the PH values of solutions A to E

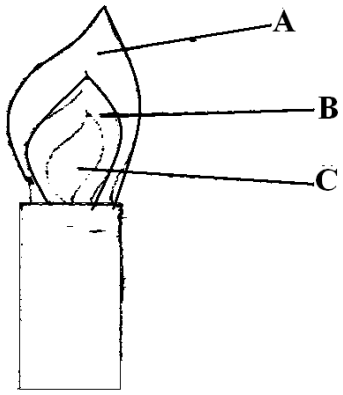
| Solution | A | B | C | D | E |
|---|---|---|---|---|---|
| PH | 6 | 13 | 2 | 10 | 7 |

**a)** What is meant by the term PH? **(1mk)**

**b)** Which of the solutions contains the largest number for hydroxide ions **(1mk)**

**c)** What will be the PH value of the mixture of D and E. **(1mk)**

**9.** The diagram below shows a Bunsen Burner when in use.




Which of the labeled parts is used for heating? Give a reason. **(2mks)**

……

……

**10.** The table below shows the atomic numbers of elements T, U, V and W. Study it and answer the questions that follow. The letters are not the actual symbols of the elements.

| Element | T | U | V | W |
|---|---|---|---|---|
| Atomic number | 13 | 16 | 17 | 20 |

**(a)** What type of bond would be formed between:-

(i) elements U and W **(1mk)**

……

(ii) elements V and U **(1mk)**

……

**(b)** Which of the elements are metals. **(1mk)**

……

**11.** Oxygen gas can be prepared in the laboratory by catalytic decomposition of hydrogen peroxide.

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

……

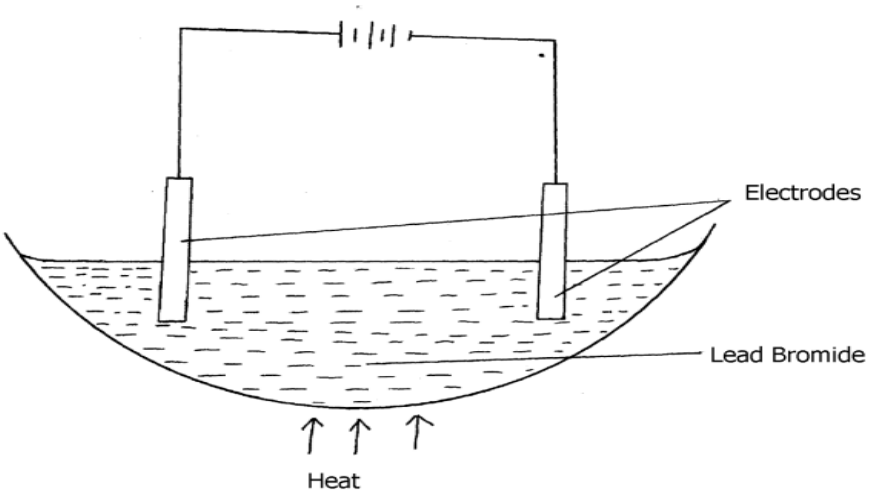
**(b)** State the Name of the suitable catalyst used. **(1mk)**

……

**(c)** Give one industrial use of oxygen **(1mk)**

……

**12. The** d diagram below shows electrolysis of lead bromide




**a)** Label the anode. **(1mk)**

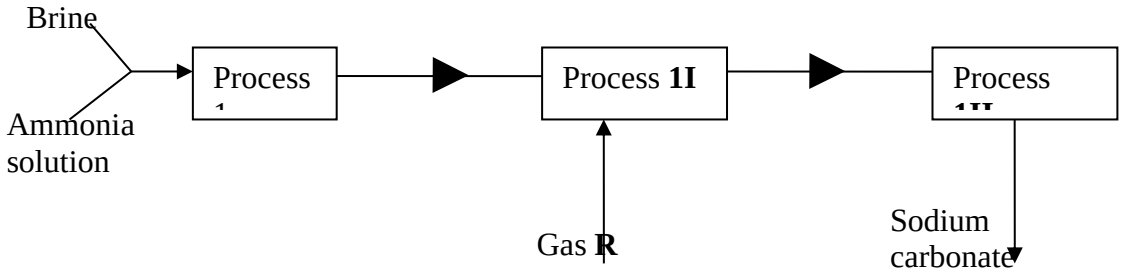
**b)** Write half equations to shows reactions at cathode. **(1mk)**

**c)** State one application of electrolysis. **(1mk)**

……

……

**13.** Below is a simplified scheme of Solvay process. Study it and answer the questions that follow:




**(a)** Identify gas **R**…….. **(1mk)**

(b) Write an equation for process **III** **(1mk)**

……

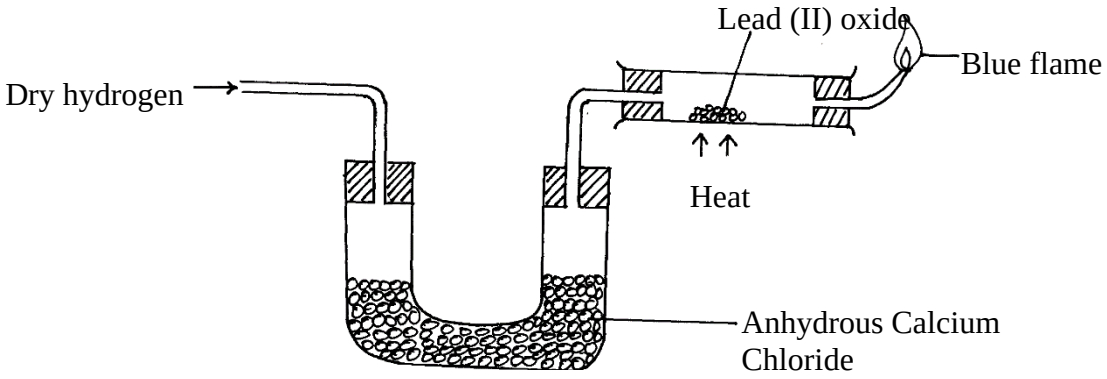
……

Give **one** use of sodium carbonate **(1mk)**

……

……

**14.** The set-up below was used to investigate the properties of hydrogen




**(i)** State the observations that was made in the combustion tube as the reaction progressed to completion **(2mks)**

……

……

……

**(ii)** Write equations for the reactions ;

**I)** In the combustion tube **(1mk)**

……

……

**II)** At the jet of the delivery tube **(1mk)**

……

……

**III**) State the properties of hydrogen that were investigated **(2mks)**

……

……

……

**15.**Classify the process below as chemical or physical changes **(2mks**

| **Process** | **Physical or chemical change** |
|---|---|
| (a) Fractional distillation | |
| (b) Displacement reaction | |
| (c) Sublimation | |
| (d) Neutralization | |

**16.** Iron reacts with oxygen in the presence of moisture to form hydrated iron (III) oxide.

$Fe_2O_3.2H_2O$

**(a)** What name is given to the process that produces hydrated iron (III) oxide? **(1 mk)**

**(b)** What does the term 'hydrated' mean? **(1 mk)**

**(c)** Name one method used to prevent corrosion of iron. **(1 mk)**

**17.** The table **below** gives elements represented by letters which are not the actual symbols.

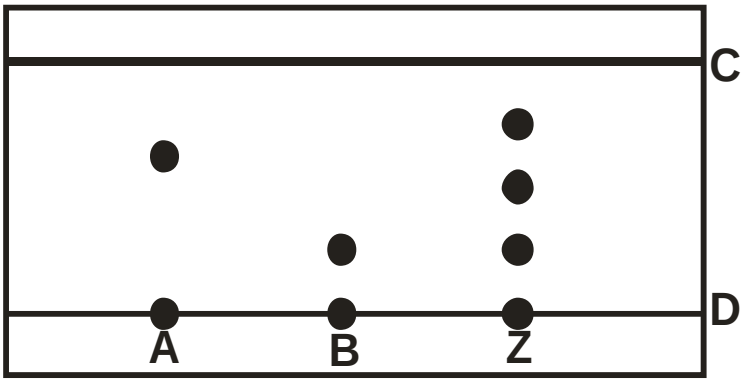
| Element | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|
| Atomic No. | 8 | 12 | 13 | 15 | 17 | 20 |

**(i)** Select an element that can form divalent anion. **(1 mark)**

**(ii)** What is the structure of the oxide of **W**? **(1 mark)**

**(iii)** Compare the atomic radius of **W** and **X**. **(1 mark)**

**18.** Spots of three pure pigments A,B and mixture Z were placed on a filter paper and allowed to dry. The paper was then dipped in a solvent. The results obtained were as on the paper chromatogram.




**i)** Identify;

**a)** Baseline. **(1mark)**

……

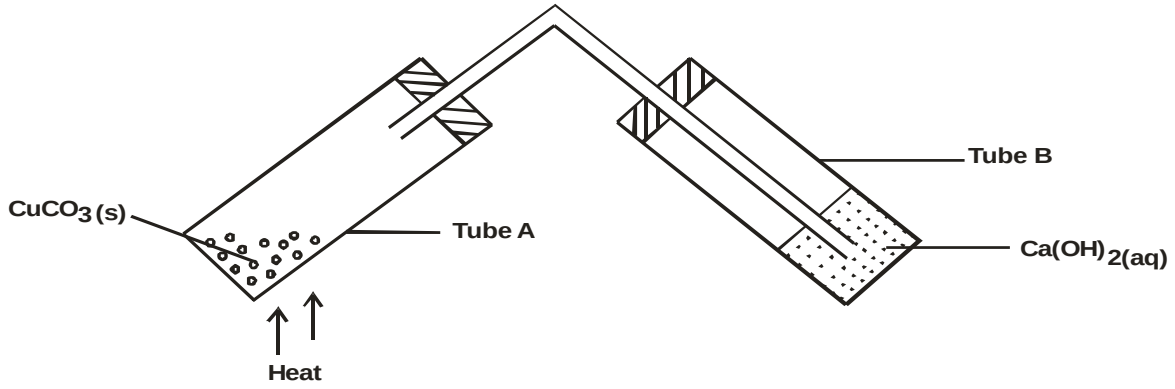
**b)** Solvent front. **(1mark)**

……

**ii)** Which pure pigment was component of Z.? **(1mark)**

……

**19.** The following was used to investigate the effect of heat on a sample of Copper(II) Carbonate.




a) State the observation made in test tube. **(2 marks)**

**A ……**

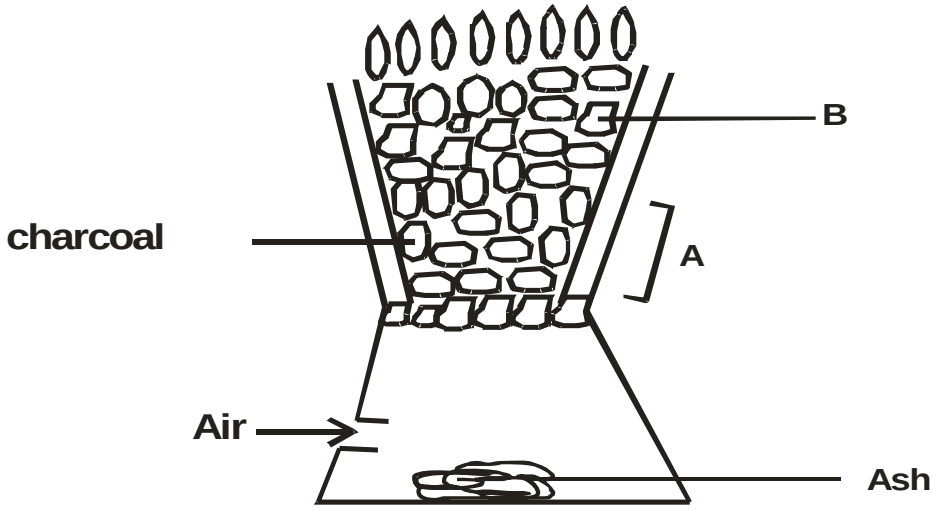
**B……**

b) Write equation for the reaction that occurs in tube A. **(1mark)**

**……**

**20.** Sketch a graph of temperature time for a pure substance A with a melting point of $20^0$C and boiling point of $90^0$C and it is heated from $0^0$C to $100^0$C. **(2marks)**

**21.** The diagram below shows a burning "jiko" in a room which has sufficient supply of oxygen.



**i)** Using chemical equations, explain what happens at A and B. **(2marks)**

……

……

……

……

**ii)** State the main danger of emitting excess carbon (IV) oxide into the atmosphere. **(1mark)**

……

**22**. 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)**

**23.a)**The atomic number of Sulphur hydrogen and oxygen are 16, 1 and 8 respectively. Write the electron arrangement of Sulphur in the following substances.

**(i)** **$H_2S$**…… **(1 mk)**

**(ii)** **$SO_3^{2-}$**…… **(1 mk)**

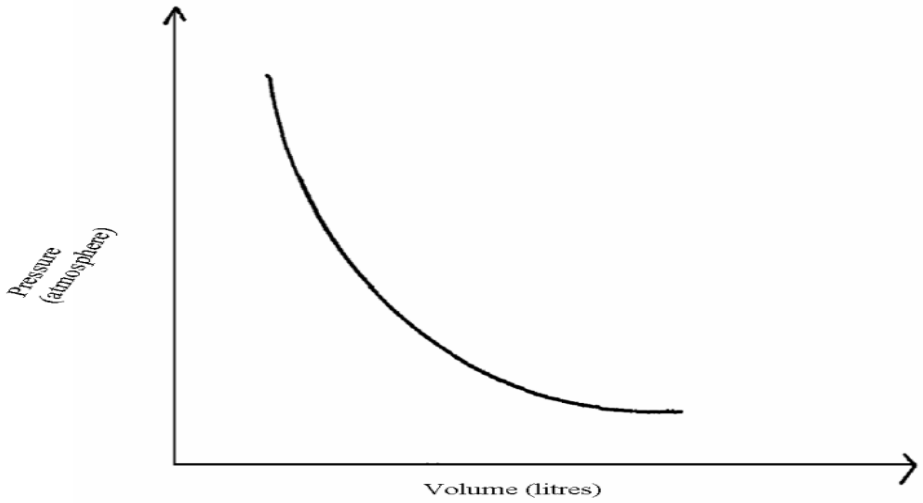
**(b)**State the number of neutrons and electrons in the species of Aluminum shown below:

$^{27}_{13}Al^{3+}$

**Neutrons ……..( 1mk)**

**Electrons …….( 1 mk)**

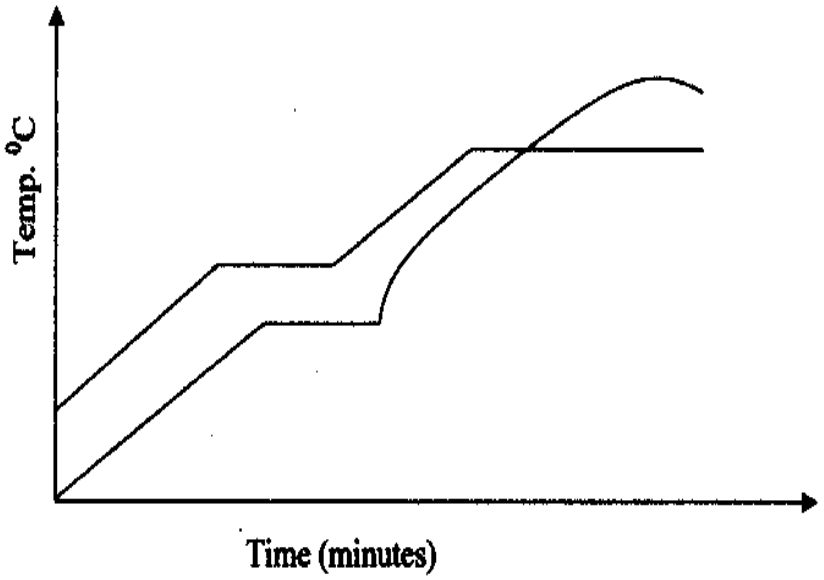
**24.**The graph below shows the behaviour of a fixed mass of a gas at constant temperature.



**(i)** What is the relationship between the volume and the pressure of the gas. **(1 mk)**

**(ii)** **12** litres of oxygen gas at one atmosphere pressure were compressed to 2.5 atmospheres pressure at constant temperature. Calculate the volume occupied by the oxygen gas. **(2 mks)**

**25.** Two samples of a similar substance from different containers were investigated. The graph below represents the variation of temperature with time when heated.




**a)** Explain the variation in the curves of:

Sample

**I**……..

**(1mk)**

Sample

**II**……

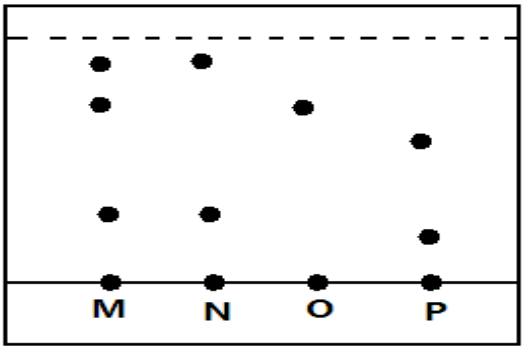
**(1mk)**

**b)** Common salt is sprinkled on roads during winter in temperate countries. Explain.**(1mk**

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**26**.Study the diagram below and answer the questions.

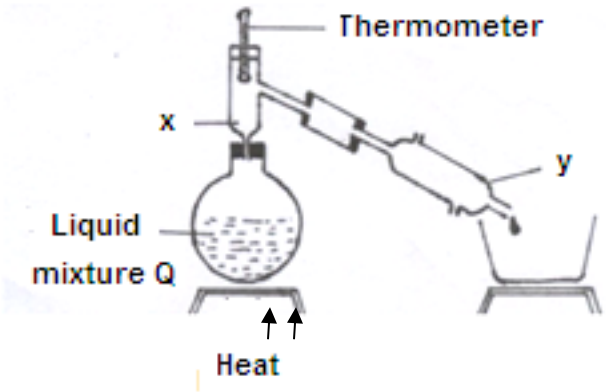



**a)** On the diagram mark the base line. **(1mk)**

**b)** Name the dyes which are in M. **(1mk)**

**c)** Which mixture of dyes has the dye with lowest solubility? Explain. **(1mk)**

**27.** Study the diagram below and answer the questions that follow. The diagram shows the method used to separate components of mixture Q.




**a)** Name X and Y. **(1mk)**

**X**……

**Y**……

**b)** What is the purpose of apparatus X? **(1mk)**

……

……

**c)** Show the direction of flow of cold water used for cooling the vapour formed. **(1mk)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# CHEMISTRY

## PAPER 2 (THEORY)

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**1. (a)** Study the following part of periodic table chart and use it to answer the questions that follow. The letters are not the actual symbols of the elements.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | **A** | | |
| | | | | | | | | |
| | **S** | | **C** | | | **D** | **E** | |
| **F** | **G** | | | | | | | |
| | | | | | | | **H** | |
| | | | | | | | | |

**(i)** Which elements form ions with charge of -2?Explain **(2mks)**

……

……

……

**(ii)** If the oxides of B and D are separately dissolved in water, what effect will their aqueous solution have on litmus. **(2mks)**

……

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**(iii)** How would you expect the ionic reactions of C and E to compare? Explain **(2mks)**

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**(iv)** Write the formula of the compounds formed between elements G and H **(1mk)**

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**(v)** In terms of structure and bonding, explain why the oxide of D has a lower melting point than the oxides of B. **(2mks)**

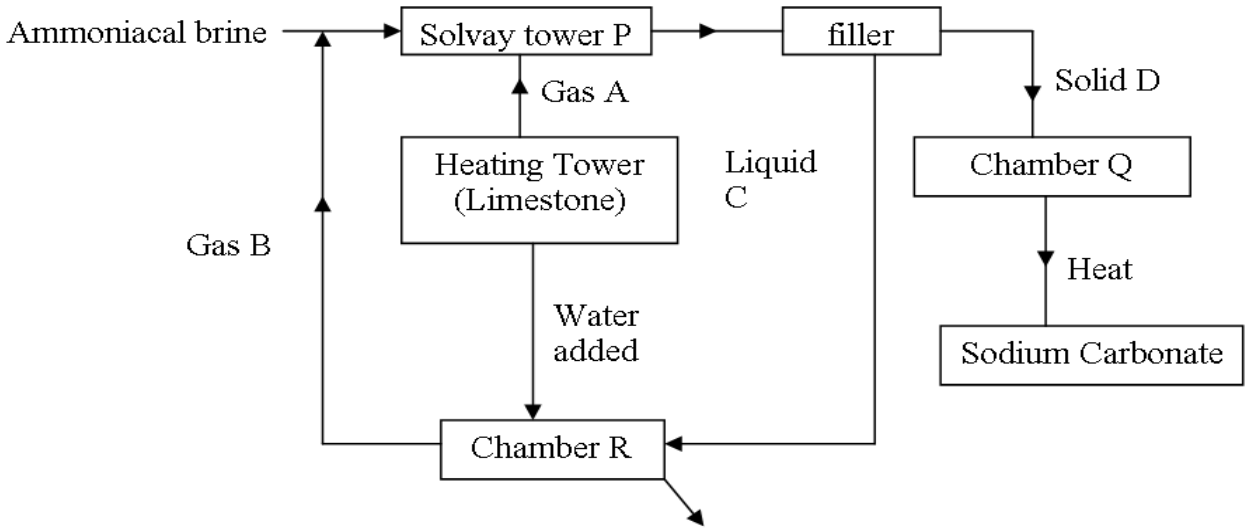
**(vi)** Write an equation to show the action of heat on the carbonates with element G **(1mk)**

……

……

(b) When 1.5litres of chlorine gas were completely reacted with element B 5.937g of the product were formed. Determine the relative atomic mass of element B. (Atomic mass of chlorine = 35.5 Molar gas volume = 24litres) **(3mks)**

**2.** The scheme below shows the manufacture of sodium carbonate by the Solvay process. Study it and use it to answer the questions that follow.




**(a)** Name (i) gases A and B **(1mark)**

**(b)** Name liquid C and Solid D **(1mark)**

**(c)** Write equations for the reactions taking place in tower P and chamber R **(2marks)**

**(d)** Name the product formed in chamber at chamber R and give one of its uses **(2marks)**

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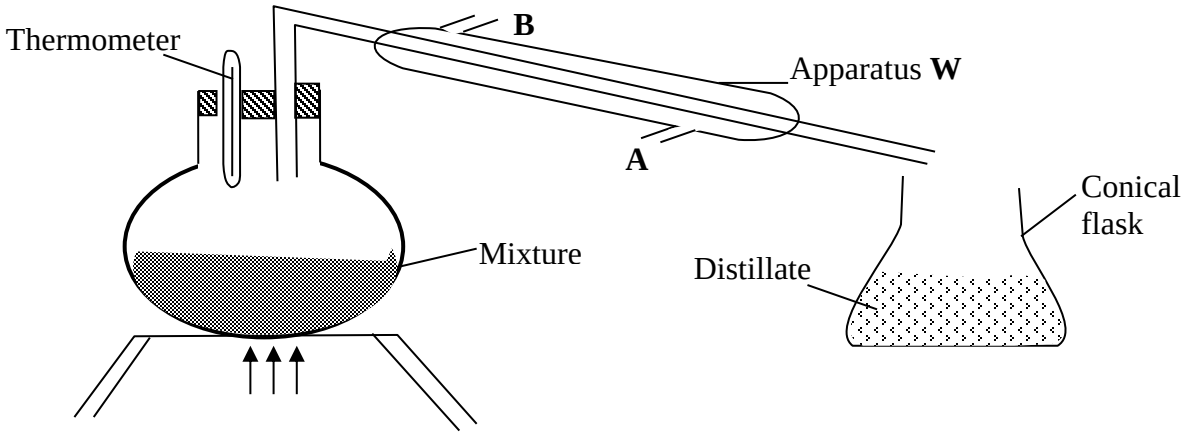
**(c)** State two uses of sodium carbonate **(1mark)**

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**3.** A student left some crushed fruit mixture with water for some days. He found the mixture had fermented. He concluded that the mixture was contaminated with water and ethanol with boiling point of 100$^{o}$C and 78$^{o}$C respectively. The set-up of apparatus below are used to separate the mixture.




**(i)** Name the piece of apparatus labelled **W** **(1mk)**

**(ii)** What is the purpose of the thermometer in the set-up? **(1mk)**

**iii)** At which end of the apparatus **W** should tap water be **connected?** **(1mk)**

**(iv)** Which liquid was collected as the first distillate? E**xplain** **(2mk)**

**(v)** What is the name given to the above method of separating mixture? **(1mk)**

**vi)**State **two** applications of the above method of separating **mixtures** **(1mk)**

……

……

**(vi)** What properties of the mixture make it possible for the component to be separated by the above methods**?** **(2mk)**

……

……

**4.** In an experiment, a piece of magnesium ribbon was cleaned with steel wool. 2.4g of the clean magnesium ribbon was placed in a crucible and completely burnt in oxygen. After cooling the product weighed 4.0g

**a)** Explain why it is necessary to clean magnesium ribbon **(1mks)**

**b)** What observation was made in the crucible after burning magnesium **ribbon? (1mk)**

**c)** Why was there an increase **in mass? (1mk)**

**d)** Write an equation for the major chemical reaction which took place in the crucible(1mk)

**e)** The product in the crucible was shaken with water and filtered. State and explain the Observation which was made when red and blue litmus paper were dropped into the filtrate **(3mks)**

II.Below is a list of oxides.

MgO, $N_2O$, $K_2O$, CaO and $Al_2O_3$

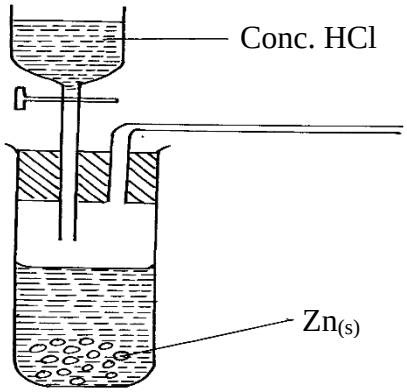
Select:-

**a)** A neutral oxide. **(1mk)**

**b)** A highly water soluble basic oxide. **(1mk)**

**c)** An oxide which can react with both sodium hydroxide solution and dilute hydrochloric acid. **(1mk)**

**5. a)**The set-up below was used by a form three student to prepare a dry sample of gas **M**. Study it and use it to answer the questions that follow:-




**(i) Complete** the diagram to show how a dry sample of gas **M** can be collected **(3mks)**

**(ii)** State the identity of gas **M** **(1mk)**

**iii)** state two industrial uses of gas **M.** **(2mks)**

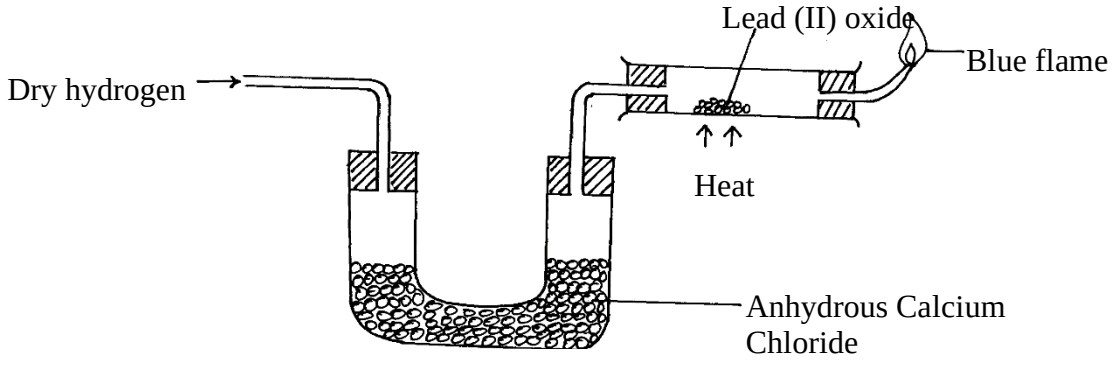
……

……

**b)** What property of concentrated sulphuric acid is being employed in the above preparation?

**(1mk)**

The set-up below was used to investigate the properties of hydrogen




**(i)** State the observations that was made in the combustion tube as the reaction progressed to completion **(2mks)**

……

……

……

**(ii)** Write equations for the reactions ;

I) In the combustion tube **(1mk)**

II) At the jet of the delivery tube **(1mk)**

Naturally occurring boron exists as two isotopes, boron-10 B with a relative abundance of 20% and boron-11 B with a relative abundance of 80%.

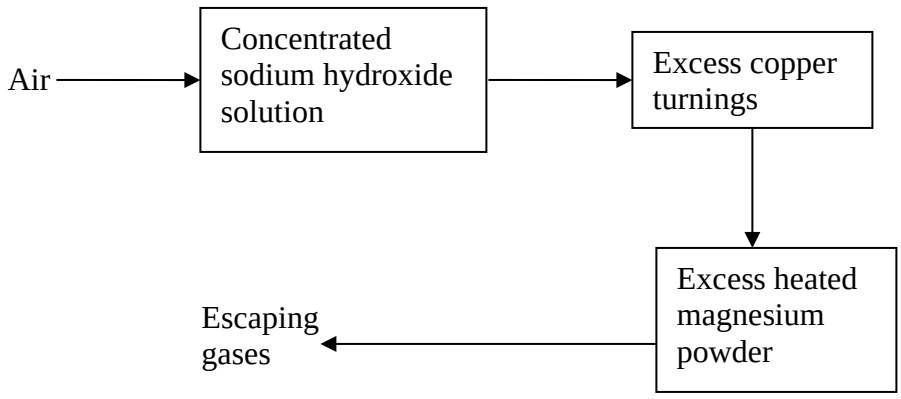
**(a)** How many electrons does each atom of boron contain? **(1mk)**

**(b)** How many neutrons does each atom of the most abundant isotope contain? **(1mk)**

**(c)** Calculate the relative atomic mass of boron. **(2mks)**

**(d)** Make a diagrammatic representation of an atom of the least abundant isotope of boron showing the distribution of electrons and composition of the nucleus. **(2mks)**

II.Air was passed through several reagents as shown below:



**(a)** Write an equation for the reaction which takes place in the chamber containing Magnesium **powder** **(1mk)**

**(b)** Name **one** gas which escapes from the chamber containing magnesium powder. Give a reason for your **answer** **(1mk)**

**(c)** State two industrial uses of hydrogen gas **(1mk)**

**6.** In the preparation of magnesium carbonate, magnesium was burnt in air and the product collected. Dilute sulphuric acid was then added and the mixture filtered and cooled. Sodium carbonate was added to the filtrate and the contents filtered. The residue was then washed and dried to give a white powder.

**(a)** Give the name of the product **(1mk)**

**(b)** Write the chemical equation for the formation of the **product** **(1mk)**

**(c) (**i) Name the filtrate collected after sodium carbonate was **added.** **(1mk)**

(ii) Write down the chemical formula of the white po**wder** **(1mk)**

**(d)** Write a chemical equation for the reaction between product in **(a)** and the acid **(1mk)**

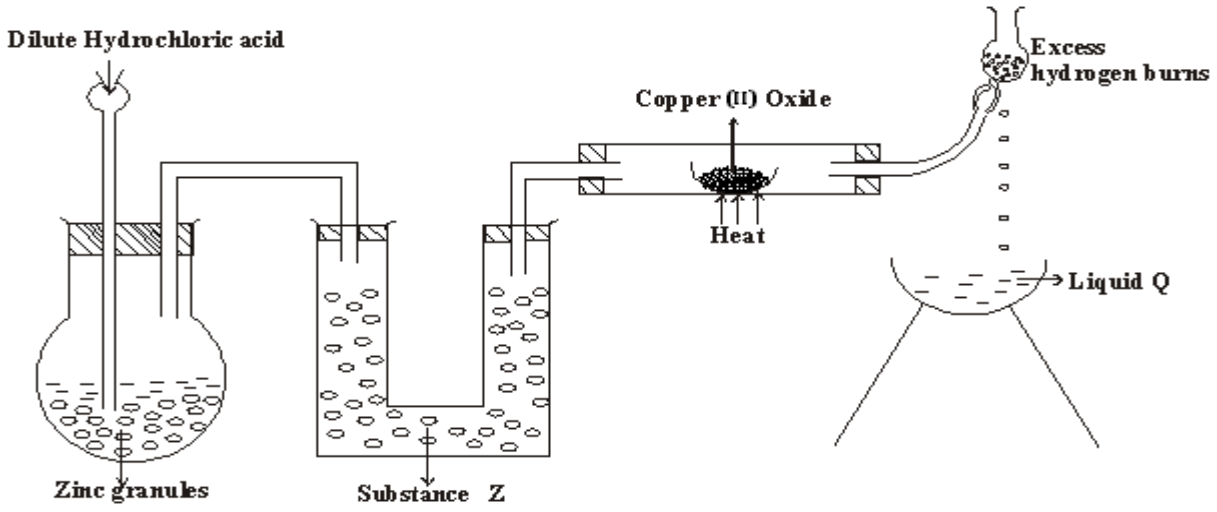
**(e)** Write an ionic equation to show the formation of the white **powder** **(1mk).**

**(f)** Write an equation to show what happens when the white powder is strongly **heated.(1mk)**

**(g)** Identify the ions present in the filtrate after addition of sodium carbonate. **(1mk)**

**(h)** What is the name given to the reaction that takes place when sodium carbonate was added to the filtrate? **(1mks)**

**7.(a)** In an experiment to investigate the properties of hydrogen, a student set up as follows.




**(i)** Name substances **(2 marks)**

**Z**……

**Q**……..

**(ii)** State two properties of hydrogen that were being investigated. **(2marks)**

……

……

**(iii)** Give two precautions that should be taken towards the end of the experiment. **(2marks)**

……

……

**(iv)** State two reasons why it is not suitable to use dilute nitric (V) acid in the preparation of hydrogen with zinc. **(2marks)**

……

……

**b)** Water molecule ($H_2O$) combines with $H^+$ to form hydroxonium ion. ($H_3O^+$) explain. **(2marks)**

……

……

**c)** Give TWO reason why hydrogen is used to fill meteorological balloons. **(2mark)**

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# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# CHEMISTRY

## PAPER 3 (PRACTICAL)

**TIME: 2 HOURS**

**CLASS…… DATE……**

**CONFIDENTIAL**

**In addition to ordinary apparatus**

- *Boiling tube*
- *6 test tubes*
- *Solid T (mixture of $CuCo_3$ and zinc sulphate)*
- *$50cm^3$ solution B 0.5MHCL*
- *$100cm^3$ solution C 0.5MNaoH*
- *Burette*
- *Pipette*
- *One conical flask*

**Access**

- *2MNaoH*
- *2M Ammonium solution*
- *Barium chloride*
- *Dilute Hcl*
- *Dilute Nitric acid*
- *Acidified potassium dichromate.*

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# CHEMISTRY

## PAPER 3 (PRACTICAL)

**TIME: 2¼ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

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

**1.** PROCEDURE.

- Pipette 25cm$^3$ of solution C into a 250ml flask.
- Add 2-3 drops of phenolphthalein indicator.
- Fill the burette with solution B 0.5MHcl then titrate.
- Repeat this procedure two more times.
- Record your result in the table.

| ***Titration*** | ***I*** | ***II*** | ***III*** |
|---|---|---|---|
| Final burette reading | | | |
| Initial burette reading | | | |
| Volume of solution B used | | | |

Calculate:

**i.** The average volume of solution B used. **(2mks)**

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**ii.** Calculate the number of moles of sodium hydroxide solution C pipetted. **(3mks)**

……

……

……

**iii.** Calculate the number of moles of hydrochloric acid solution B that reacted with sodium hydroxide in (II) above. **(3mks)**

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**iv.**Calculate the molarity of hydrochloric acid solution B. **(3mks)**

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……

**2.** You are provided with solid T. Carry out the experiment in the table and record the results in the spaces provided.

**i.** Put all of T in boiling tube. Add $20cm^3$ of distilled water and stir gently, filter the product and divide the filtrate into three portion. Retain the residue.

| **Observation (1mk)** | **Inference (1mk)** |
|---|---|
| | |

**ii.** To the first portion add a few drops of 2M NaOH solution and then in excess.

| ***Observation (2mks)*** | ***Inferences (2mks)*** |
|---|---|
| | |

**iii.** To the second portion add few drops of 2M ammonia solution and then in excess.

| **Observations (2mks)** | **Inferences (2mks)** |
|---|---|
| | |

**iv.** To the third portion add a few drops of barium chloride solution followed by dilute hydrochloric acid.

| **Observations (2mks)** | **Inferences (1mk)** |
|---|---|
| | |

**3.** Add 2$cm^3$ of dilute hydrochloric acid to the residue. Ensure some residue remains undissolved. Decant to get a solution. Divide the solution into two portion. Carry out the following experiments.

**i.** To the first portion add a few drops of sodium hydroxide solution and then in excess.

| **Observation (2mks)** | **Inferences (1mk)** |
|---|---|
| | |

**ii.** To the second portion add a few drops of ammonia solution and then in excess.

| **Observation (2mk)** | **Inferences (1mk)** |
|---|---|
| | |

Divide the residue into two portions. Carry out the following experiment.

**i.** To the first portion add a few drops of dilute nitric (IV) acid.

| **Observation (1mk)** | **Inferences (2mks)** |
|---|---|
| | |

**ii.** To the second portion, add acidified potassium dichromate (IV).

| **Observation (1mk)** | **Inference (1mk)** |
|---|---|
| | |

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# PHYSICS

## PAPER 1 (THEORY)

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**INSTRUCTIONS TO CANDIDATES**

- *Write your name and index number in the spaces provided above*
- *Sign and write the date of the examination in the spaces provided*
- *Attempt **ALL** questions in sections A and B.*
- *All your answers must be written in the spaces provided in this question paper.*
- *All working must be clearly shown*
- *Non programmable silent electronic calculators and KNEC mathematics table may be used except where stated otherwise*

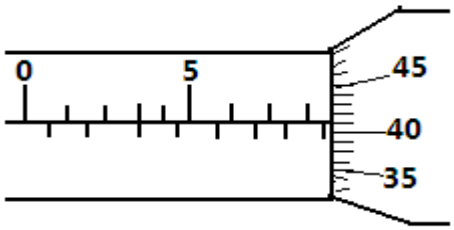
**FOR EXAMINER'S USE ONLY**

| Section | Question | Maximum Score | Candidates' Score |
|---|---|---|---|
| A | Q1 – Q13 | 25 | |
| B | Q16 | 12 | |
| | Q17 | 13 | |
| | Q18 | 16 | |
| | Q19 | 14 | |
| | | 80 | |

## SECTION A (25 MARKS)

***(Answer ALL the questions in the spaces provided)***

**1.** What is the reading on the micrometer screw gauge shown below with an error of +0.5mm? **(1mk)**




……

**2.** In a ball and ring experiment, the ball goes through the rings at room temperature. When it is heated it does not go through the ring, but when left on the ring for some time, it goes through. Explain this **observation** **(2mks)**

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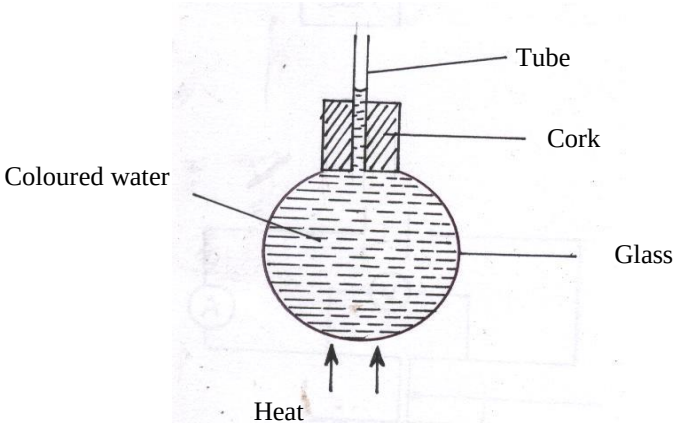
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**3.** In the study of free fall, it is assumed that the force F acting on a given body of mass, m, is gravitational, given by F = ma. State **two** other forces that act on the same body **(1mk)**

……

……

**4.** In the set up shown below, it is observed that the level of the water initially drops before starting to rise. Explain this observation **(2mks)**



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……

**5.** Distinguish between **speed** and **velocity.** **(2mks)**

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**6.** State how the pressure in a moving fluid varies with speed of the fluid. **(1mk)**

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……

**7.** A piece of metal weighs 3N in air and 2N when totally immersed in water. Calculate the volume of the metal **(3mks)**

**8.** Explain how a person is able to drink a soda using a drinking straw. **(2mks)**

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**9.** Give a reason why air is not commonly used as the fluid in a hydraulic lift. (**1mk)**

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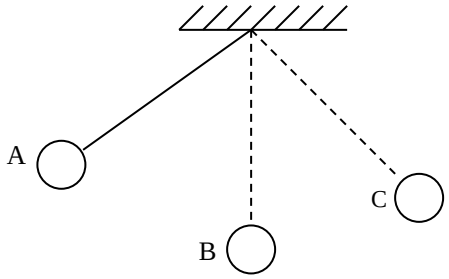
……

**10.** State **one** assumption made when estimating the size of an oil molecule in the oil drop experiment. **(1mk)**

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……

**11.** The figure below shows a swinging pendulum.




State the energy conservation taking place as the pendulum moves from A to B and B to C

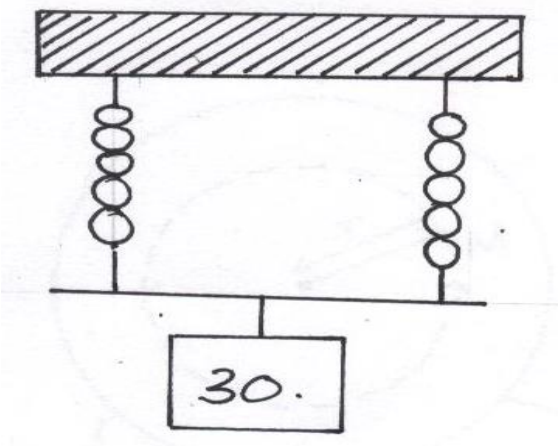
**(2mks)**

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……

**12.** The identical springs of spring constant 3N/cm are used to support a load of 30N as shown.




Determine the extension on each spring **(3mks)**

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**13.** In a vacuum flask, the walls enclosing the vacuum are silvered on the inside. State the reason for this. **(1mk)**

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……

**14.** State the features that govern the strength of a spiral spring of a given material. **(2mks)**

……

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……

**15.** Sketch velocity-time graph of a body moving down a viscous fluid. **(1mk)**

## SECTION B (55 MARKS)

***(Answer ALL the questions in the spaces provided)***

**16.** (a) State the principle of conservation of linear momentum. **(1mk)**

……

……

(b) Calculate the recoil velocity of a gun of mass 0.4kg which fires a bullet of mass 0.0045kg at a velocity of $400ms^{-1}$ **(3mks)**

(i) State **two** factors which affect frictional force of a body **(2mks)**

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(ii) Suggest **three** ways in which friction can be minimized **(3mks)**

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(iii) State **three** advantages of friction **(3mks)**

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**17.**

**a)** Fig. 8 shows a cylindrical can filled with a liquid of density 0.8 $gcm^{-3}$. A hole of diameter 2.0 cm is drilled at a depth of 2.8 m from the top of the can.

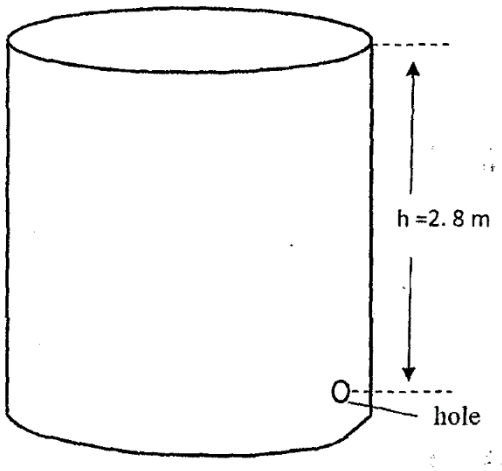



Fig. 8

Determine:

**i.** The cross-sectional area of the hole. **(2mks)**

**ii.** The maximum pressure exerted by the liquid at the hole. **(2mks)**

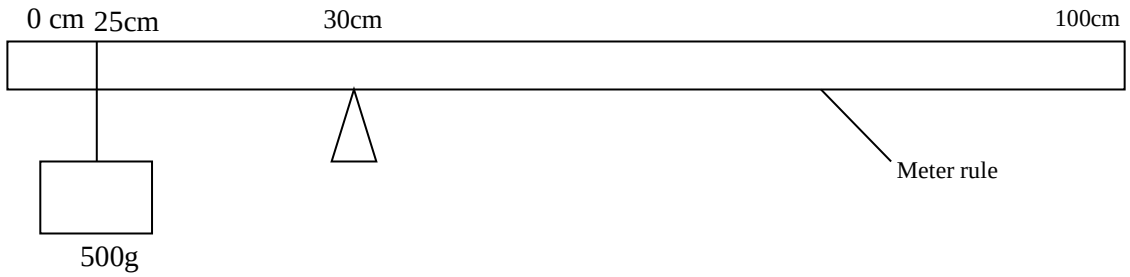
**iii.** The maximum force exerted on a jet of liquid through the hole. **(2mks)**

**b)** State the principle of moments **(1mk)**

……

……

**c)** A metre rule whose centre of gravity is at the 50cm mark balances at the 35cm mark when a mass of 500g is placed at the 25cm mark as shown in the figure 8 below




**i.** Determine the mass of the meter rule **(3 mks)**

**ii.** With the metre rule remaining on the knife-edge at the 30 cm mark, a mass of 125g is suspended from the 70 cm mark. The mass of 500g is moved until the rule is balanced. Determine the new position of the 500g **mass** **(3 mks)**

**18.**

**a)** For a body moving with a constant acceleration, a , show that:

**i.** V = u + at where v and u are the final and initial velocities respectively while t is the time taken **(2mks)**

**ii.** $S = ut + \frac{1}{2}at^2$ where S is the distance covered **(2mks)**

**iii.** A car of mass 1200kg moving at 90km/h is brought to rest over a distance of 20m. Calculate the breaking force **(3mks)**

**b)** An object is projected vertically upwards with a velocity of 200m/s. Calculate:

**i.** Its velocity after 5 seconds **(2mks)**

**ii.** The distance covered in the first 8 seconds **(2mks)**

**iii.** The maximum height reached **(2mks)**

**c)** The figure below shows a uniform cardboard in the shape of a parallelogram.



Locate the centre of gravity of the cardboard**.** **(1 mk)**

**d)** Two samples of bromine vapour are allowed to diffuse separately under different conditions, one in a vacuum and the other in air. State with reasons the conditions in which bromine diffuse slower. **(2 mks)**

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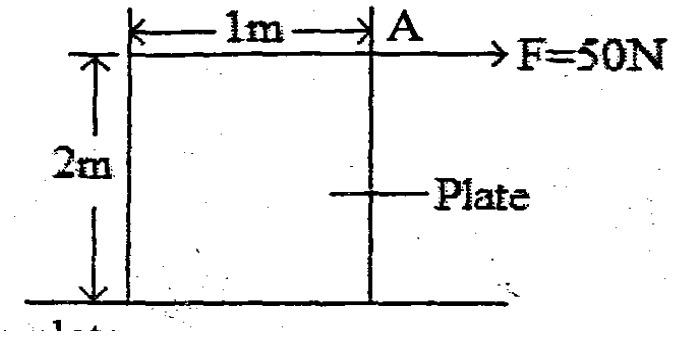
**19.**

**a)** State **two** factors affecting stability of body **(2mks)**

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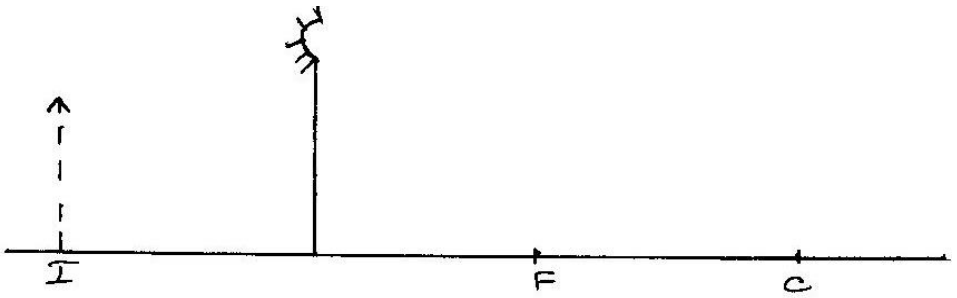
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**b)** The figure below shows a metal plate 2 m long, 1M wide and negligible thickness. A horizontal force of 50 N applied at point 'A' Just makes the plate tilt.

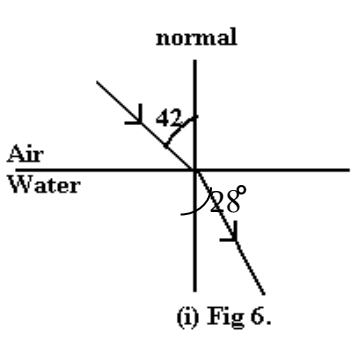


Calculate the weight of the plate. **(3mks)**

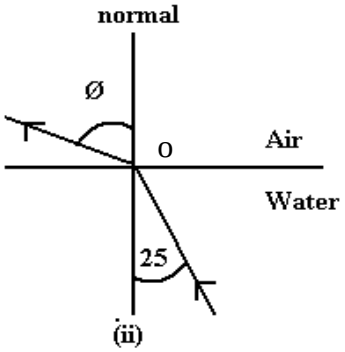
**c)** Fig 4 shows an image I formed by an object placed in front of a convex mirror. C is the centre of curvature of the mirror. Using ray diagram, <u>locate</u> the object position. **(3mks)**




**d)** Fig 6 (i) and (ii) show refraction of light at air-water interface. <u>Determine</u> angle Ø in figure 6(ii**)** **(3mks)**

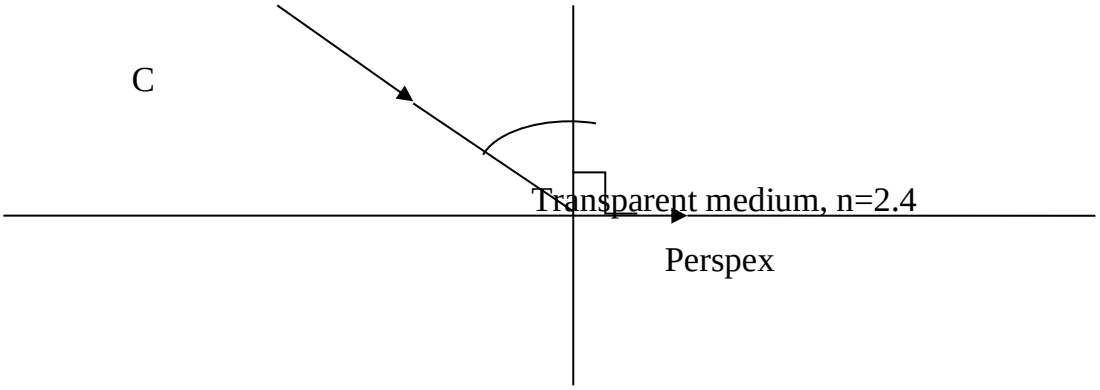


(i) Fig 6.



(ii)

**e)** A ray of light now travels through a transparent medium into the Perspex as shown in the figure below:




Calculate the critical angle **(3mks)**

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# PHYSICS

## PAPER 2 (THEORY)

**TIME: 2 HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**INSTRUCTIONS TO CANDIDATES**

*1. Write your name and index number in the spaces provided at the top of this page.*
*2. Sign and write the date of examination in the spaces provided above.*
*3. This paper consists of TWO sections: A and B*
*4. Answer ALL the questions in the sections A and B in the spaces provided.*
*5. ALL working MUST be clearly shown.*
*6. Non-programmable silent electronic calculators and KNEC mathematical tables may be used.*

**FOR EXAMINERS USE ONLY.**

| SECTION | QUESTIONS | MAXIMUM SCORE | CANDIDATE'S SCORE |
|---|---|---|---|
| A | 1 – 13 | 25 | |
| B | 14 | 12 | |
| | 15 | 11 | |
| | 16 | 12 | |
| | 17 | 08 | |
| | 19 | 11 | |
| **Total Score** | | **80** | |

## SECTION A (25 MARKS)

**1.** Give one difference between luminous and non-luminous sources of light. **(1mk)**

……

……

**2.** When a negatively charged rod is brought near the cap of a leaf electroscope, the leaf rises. Explain this observation, **(2mks)**

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**3.** **Figure 2** represents a displacement-time graph for a wave.

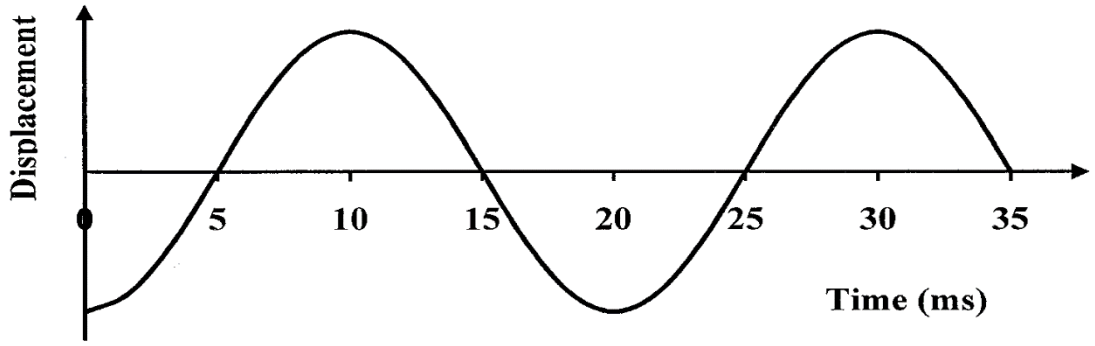



Figure 2

Determine the frequency of the wave. **(2mks)**

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**4.** ***State*** the conditions necessary for a wave incident on a slit to be diffracted. **(2mrks)**

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**5.** In an experiment to determine the focal length of a concave mirror, magnification M was determined for various image distances v. Figure 3 shows a graph of magnification M against image distance v for the results from the experiment.

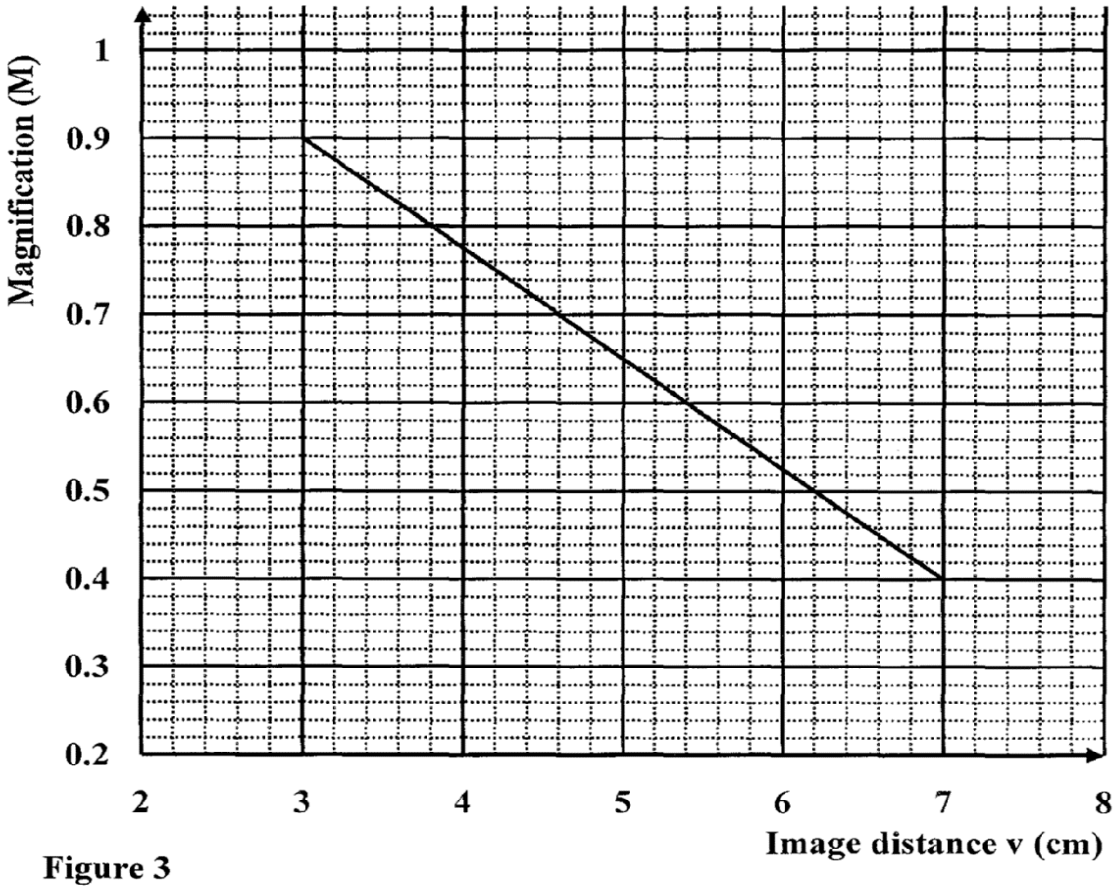



**Figure 3**

Given that M = 1 $\frac{v}{f}$, determine the focal length f of the mirror. **(3mks)**

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**6.** A hair dryer is rated 2500W, 240V. Determine its resistance. **(2mks)**

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**7. Figure 4** shows the magnetic field pattern round a current-carrying conductor. Indicate on the conductor the direction of the current. **(1mk)**

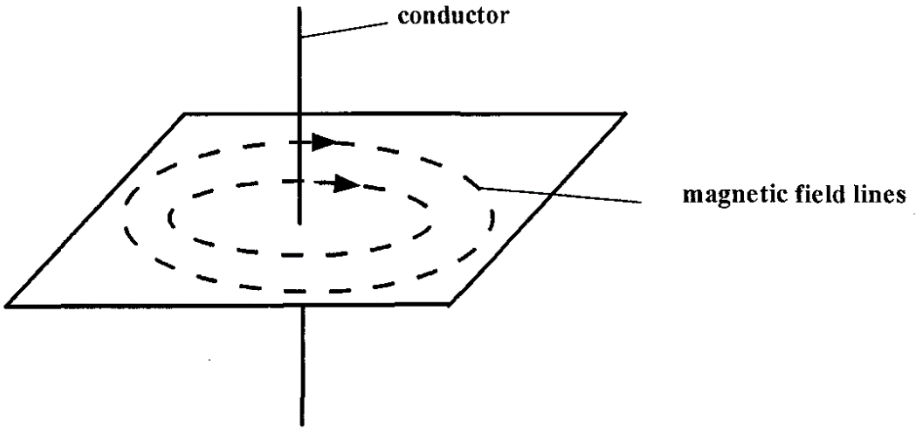



Figure 4

**8.** Why is repulsion the sure test for a magnet? **(1mk)**

……

……

**9. Figure 5** shows a ray of light incident on an air bubble which is inside water,

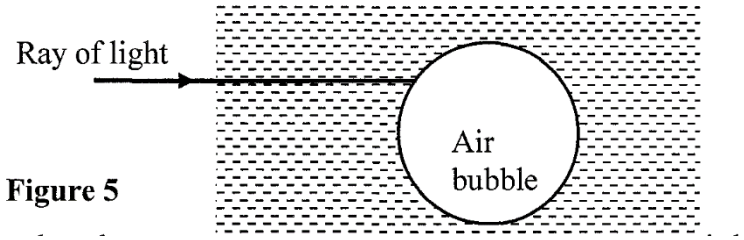



**Figure 5**

Complete the ray to show the path it follows through the air bubble. **(1mk)**

**10.** Explain how polarization of a cell increases the cell's internal resistance. **(2mks)**

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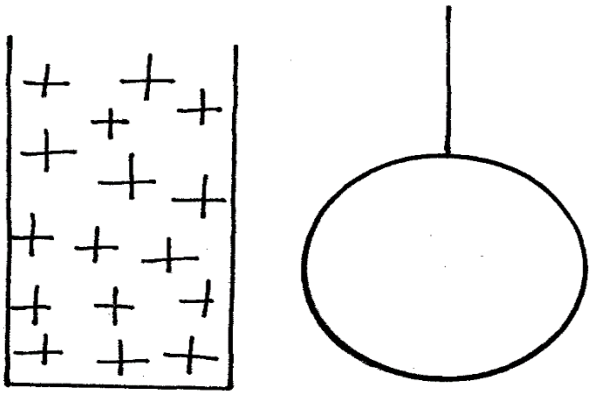
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**11.**

1. A positively charged material was brought close to an insulated metallic ball as shown in Fig 4. State and explain the distribution of charge in the ball **(2mks)**

**Fig. 4**



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**2.** Explain why sound cannot be heard from far when one shouts in a forest **(1mk)**

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**12.** Using the variation of resistance with temperature, differentiate between a conductor and a semiconductor. **(1mk)**

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**13.** A cell of internal resistance $O.5\Omega$ is in a circuit containing a $10\Omega$ resistor. A current of 2A flows in the circuit. Determine the emf of the cell. **(2mks)**

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## SECTION B (55 MARKS)

**14.**(a) (i) State Snell's law of refraction of light **(1mk)**

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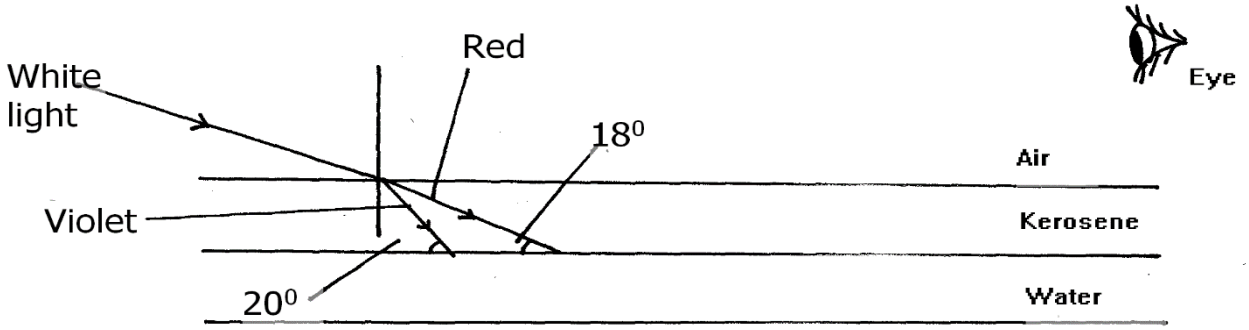
(ii)Give two advantages of totally internally reflecting prisms over plane mirrors. **(2mks)**

……

……

(b) A ray of light is incident on a kerosene water interfaces as shown in figure 7

Fig. 7




Given that the refractive index of water and kerosene are 1.33 and 1.44 respectively, Determine

(i) the refractive index for the kerosene – water interface **(3mks)**

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(ii) determine and show on the figure the path of the rays of light between the Kerosene-water surface **(3mks)**

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**(iii)** Why does the colours of the light separate at the kerosene layer. **(1mk)**

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**(iv)** State and explain the observation that the eye above the two surfaces would see **(2mks)**

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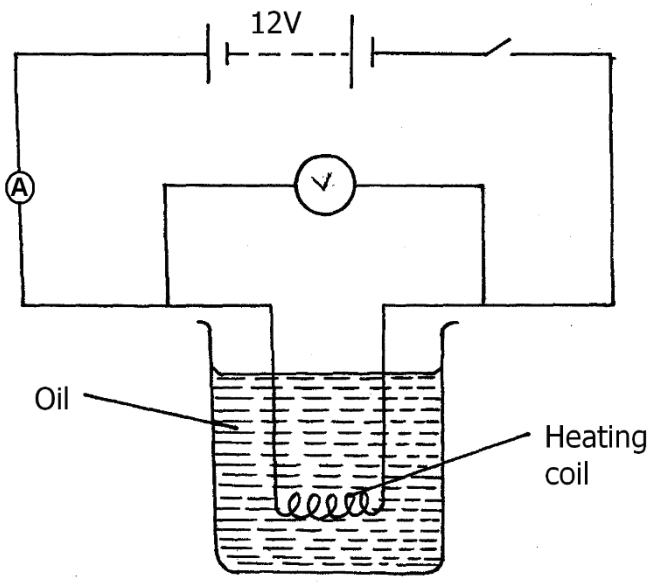
**(a)** State Ohm's law **(1mk)**

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(b) The figure 8 below shows a circuit with a coil used to warm oil in a beaker.

**Fig. 8**




**(i) Explain** how heat is produced in the coil **(2mks)**

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**(ii)** Given that the reading of the ammeter is 2.4A determine the resistance of the coil. **(3mks)**

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**(iii)** How much heat is produced in the coil in a minute? **(3mks)**

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**(iv)**Give two changes that can be made in the set up in order to produce more heat per minute.

**(2mks)**

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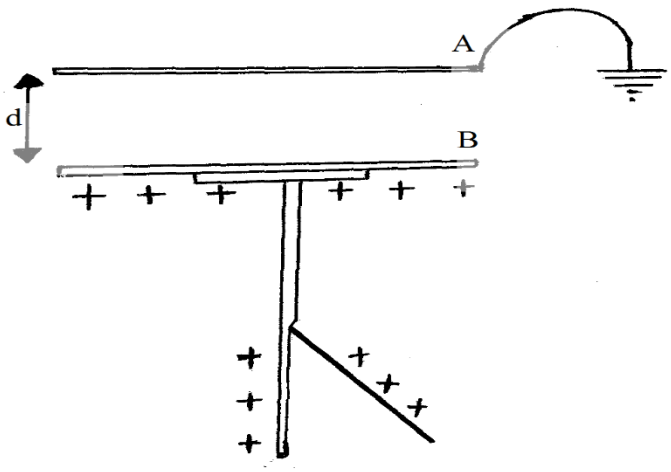
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**15.** (a) Define capacitance of a capacitor **(1mk)**

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The figure below shows a charged electroscope two aluminium plates A and B arranged a shown



State and explain the observations made when:

**(i)** d is reduced **(2mks)**

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**(ii)** the plate A is more horizontally **(2mks)**

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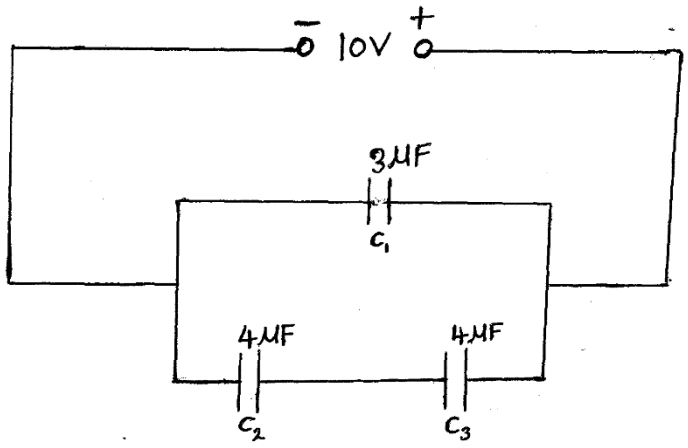
**(iii)** a sheet of polythene is placed between A and B **(2mks)**

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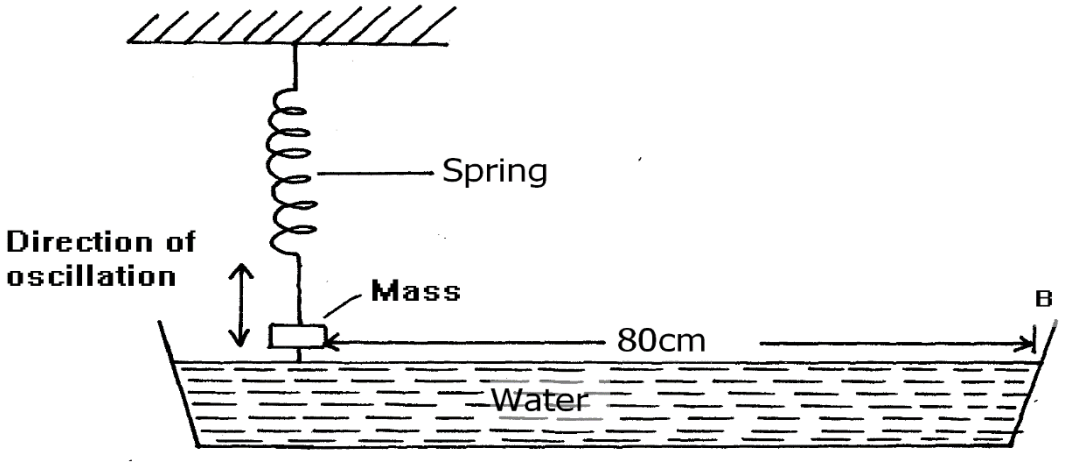
**(b)** Three capacitors are connected to a 10V battery as shown below.




**(i)** Calculate the combined capacitance **(3mks)**

**(ii)** What is the charge on the $3\mu$F capacitor **(3mks)**

**16.** Students set up a mass attached to spring such that when it oscillates it taps on water surface in a wide shallow tank. **Fig. 6**




The students measured time for 20 oscillations and found that the mass takes 36 seconds.

**(i)** Determine the periodic time of the mass **(2mks)**

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**(ii)** Calculate the frequency of the waves produced on the water surface **(3mks)**

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**(iii)** Given that the student counted four ripples between the mass and end B of the tank, Determine the speed of the waves. **(3mks)**

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**17.**

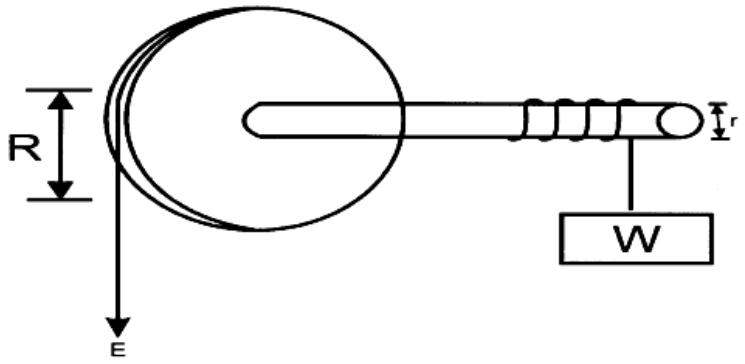
**a.** A machine is a device that enables work to be done more easily and conveniently. State any two ways in which a machine makes work easier. **(2 marks)**

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




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

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

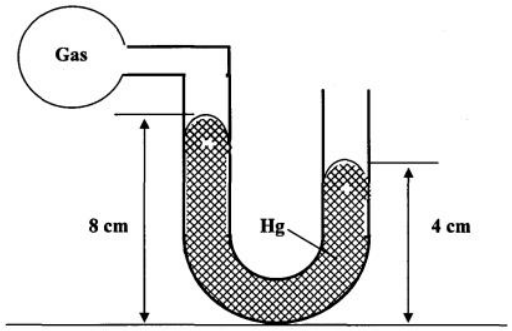
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**c.** An airtight flask containing a gas is connected to a mercury manometer. The levels of mercury in the two limbs of the manometer are as shown in the diagram below.




Calculate the pressure of the gas (Density of mercury = $1.36 \times 10^4$ kg/m$^3$ and atmospheric pressure = $1.0 \times 10^5$ N/m$^2$) **(3mks)**

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**d.** State one way of making the surface tension of a liquid stronger. **(1mk)**

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# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# PHYSICS

## PAPER 3 (PRACTICAL)

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CONFIDENTIAL PHYSICS PRACTICAL**

**QUESTION 1**

- *Two new dry cells and a cell holder*
- *A voltmeter (0-3 Volts)or (0-5 Volts)*
- *An ammeter (0-1 A)*
- *5 Connecting wires (atleast 2 with crocodile clips )*
- *1m longnichrome wire mounted on a millimiter scale(SWG 32)*
- *A switch*

**QUESTION 2**

- *A cotton thread 1m long*
- *Two small pieces of wood*
- *A retort stand and clamp*
- *A metre rule*
- *A stop watch*
- *Some cello tape*
- *Pendulum bob*

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# PHYSICS

## PAPER 3 (PRACTICAL)

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**INSTRUCTIONS TO CANDIDATES**

- *Write your name and Index Number in the spaces provided above.*
- *Sign and write date of examination in the spaces provided above.*
- *Answer all questions in the spaces provided*
- *All working must be clearly shown*
- *Non-programmable silent calculator may be used*

**FOR EXAMINERS USE ONLY**

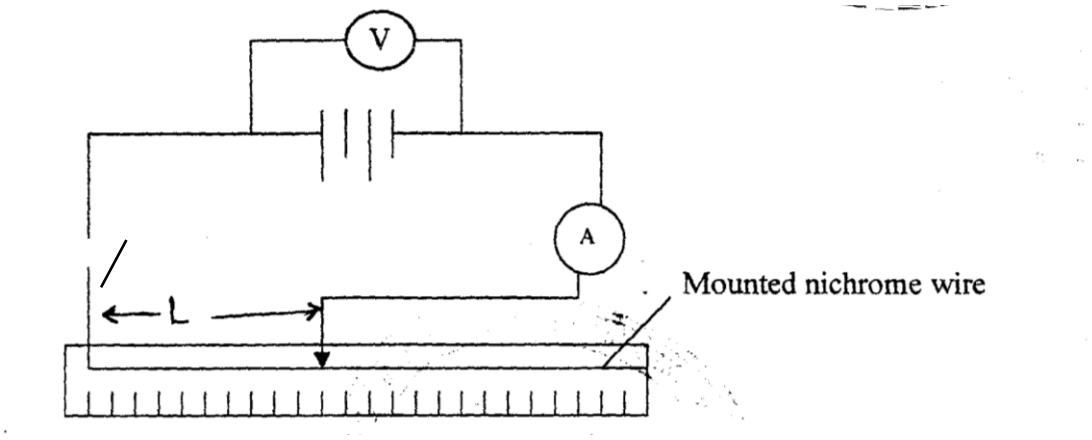
| Question | Maximum | Candidates Score |
|---|---|---|
| 1 | 20mks | |
| 2 | 16mks | |
| ii) | 4mks | |
| Total | | |

**1.**You are provided with the following apparatus

- *Two new dry cells and a cell holder*
- *A voltmeter (0-3v) or (0-5v)*
- *A ammeter(0-1A)*
- *5 connecting wires – at least two with crocodile clips*
- *1m length nichrome wire mounted on a mm scale (SWG 32)*
- *A micrometer screw gauge*
- *A switch*

In this experiment you are required to determine the resistivity of the wire

Connect the apparatus as shown in the diagram below




ii) Slide the wire mounted on the meter rule to give a set of readings for values of I and V respectively for length L ranging from 10cm to 70cm .Record the results in the table below

**(6 marks)**

| LEGTH L(cm) | LEGTH L(m) | Current I(A) | Voltage (V) | R=V/I |
|---|---|---|---|---|
| 0.1 | | | | |
| 0.2 | | | | |
| 0.3 | | | | |
| 0.4 | | | | |
| 0.5 | | | | |
| 0.6 | | | | |
| 0.7 | | | | |

**iii)**from the table what relationship is there between length of the wire and **R.** **(1mk)**

……

……

iv)use the micrometer screw gauge provided to measure the diameter of the wire

**d=……mm d = ……m (1 mk)**

Hence find the cross sectional area A of the wire mounted on the ruler that you use**d.(2mks)**

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……

v)Using the results from your table to plot a graph of R against L. **(4mks)**

***graph paper attached***

vi)From the graph find the value of I when L=0.2 m and V =1.8V. (**2MKS)**

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**(VII)**Calculate the slope of the graph **(2mks)**

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**(viii)**Hence calculate the resistivity of the wire given that **R=**$\frac{pL}{A}$ **(2mks)**

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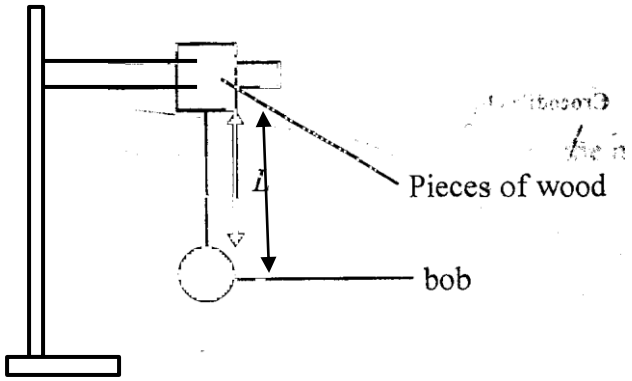
## QUESTION 2

2. You are provided with the following apparatus

- A pendulum bob
- A cotton thread 1m long
- Two small pieces of wood
- A retort stand and clamp
- A metre rule
- A stop watch
- Some cello tape

**Proceed as follows**

(a) Clamp the pendulum as shown starting with L= 80cm




You are required to determine the constant 'b' using a simple pendulum

**(a)** Give the bob a small displacement 0 and record the time't' for 20 oscillations. .Record also the periodic time T, for one complete oscillation

(**b)** Repeat (b) for values of L as shown in the table. Enter your readings in the table. Work out also $T^2$ and enter these values in the table.

| Length L(cm) | Time for 20 oscillations | Period T | $T^2$( $s^2$) |
|---|---|---|---|
| 80 | | | |
| 70 | | | |
| 60 | | | |
| 50 | | | |
| 40 | | | |
| 30 | | | |
| 20 | | | |

**(9 mks)**

**(c)** Plot a graph of $T^2$ against L. **(5 mks)**

**(d)** Determine the slope of the graph and state its units. **(3 mks)**

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(e) The equation for the graph is given by

$$T^2 = \frac{4\pi^2 L}{b} + C$$

Where b and C are constants. Determine the value of b stating its significance. **(3 mks)**

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# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# MATHEMATICS

## PAPER 1

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**INSTRUCTIONS TO CANDIDATES:**

- *Write **your name** and **admission number** in the spaces provided above*
- *This paper contains **two sections;** Section **I** and section **II.***
- *Answer **all** the questions in section **I** and only **five** questions from section **II.***
- *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.*
- *Calculators 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 EXAMINER'S USE ONLY;**

**Section I**

| Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | **TOTAL** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marks | | | | | | | | | | | | | | | | | |

**GRAND TOTAL**

**Section II**

| **Questions** | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | **TOTAL** |
|---|---|---|---|---|---|---|---|---|---|
| **Marks** | | | | | | | | | |

**1.** Without using mathematical tables or calculators, evaluate the following leaving your answer as a fraction in its simplest form. **(3mks)**

$$\sqrt[3]{\frac{0.119\times 0.256}{0.068\times 7}}$$

**2.** Two boys and a girl shared some money .The elder boy got $\frac{4}{9}$ of it, the younger boy got $\frac{2}{5}$ of the reminder and the girl got the rest. Find the percentage share of the younger boy to the girl's share. **(4mks)**

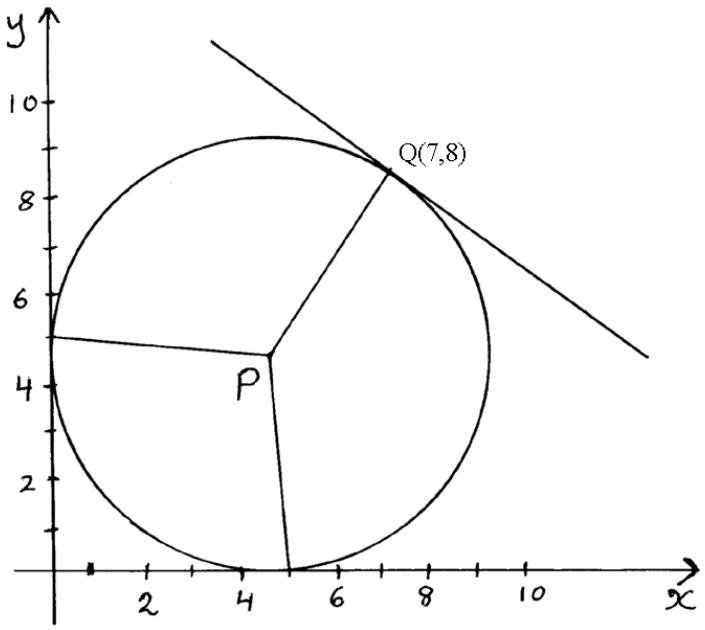
**3.** From a point A, the angle of elevation of top of a watch tower is $20^0$.From another point which is 25m from the base of the tower, the angle of elevation of the top of the tower is $26^0$.Giving your answer to three decimal places, determine the height of the tower and hence calculate the distance between the points A and B if they are both on the same side of the tower and lie on a straight line with the base of the tower. **(3mks)**

**4.** If X is a positive integer, find all possible values of x given that $1<\frac{2}{5}x^2<7$. **(3mks)**

**5.** A train whose length is 60 metres is travelling at 40km/h in the same direction as a bus whose length is 20m.If the speed of bus is 80km/h and moving parallel to the train, calculate the time it takes the truck to overtake the train completely in seconds. **(3mks)**

**6.** A positive two digit number is such that the product of the digits is 20.When the digits are reversed , the number so formed is greater than the original number by 9.Find the number.

**7.** The diagram below shows a circle with centre P(5,5) and radius 5 units

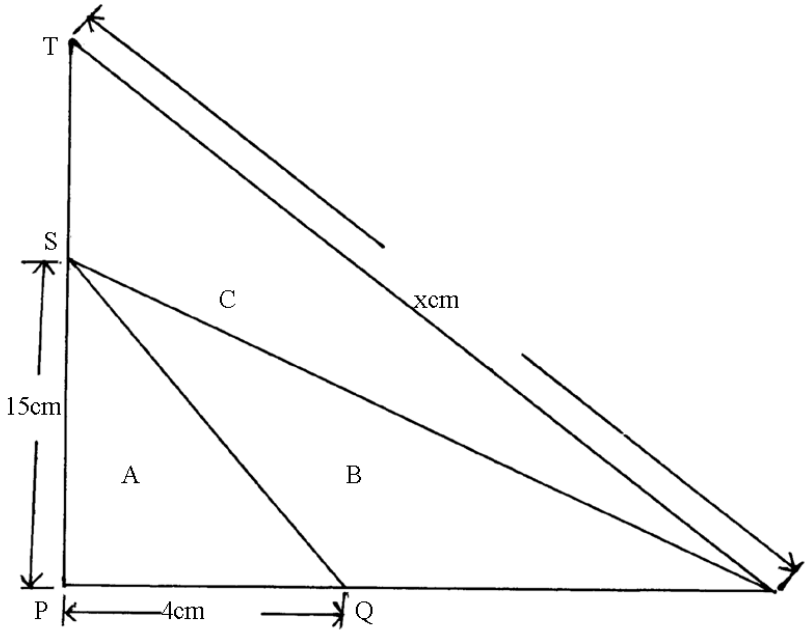



(a) Write down in terms of x and y the equation of the circle in the form $ax^2+by^2+cx+dy+e=0$ where a,b,c,d and e are constants. **(1mk)**

(b) Determine the gradient of PQ **(1mk)**

(c) Find the equation of the tangent at Q in the form ax+by=c. **(2mks)**

**8.** Find the value of x in the following figure given that area A =Area B=Area C(Give your answer to 2 decimal places) **(4mks)**




**9.** Odhis car Hire company hires out as follows; sh. 2500 per day and sh. 270 per kilometer covered. They offer a discount of 30km free each day of hire.Makori hires a car for 5 days and drives for 480km.Calculate the total cost. **(2mks)**

**10.** Omwando borrows sh. 90,000 for 5 years at 6 ½ % simple interest p.a. What amount does he have to pay at the end of that time? **(3mks)**

**11.** Solve for t in the equation

$9^{t+1} + 3^{2t} = 30$. **(3mks)**

**12.** Given the curve $y = x^2 - 2x + 6$, find the coordinates of the point on the curve at which the gradient is 4. **(2mks)**

**13.** Mary has some money in two denominations only. Fifty shilling notes and twenty shilling coins. She has three times as many fifty shilling notes as twenty shilling coins. If altogether she has sh. 3400, find the number of fifty shilling notes and 20 shilling coins.

**14.** In Ngamongo village, a piece of work can be completed by 45 workers in 10 days .They worked for 4 days after which 15 workers were laid off. How many days would it take the remaining workers to complete the work? **(3mks)**

**15.** The table below shows marks obtained by a form three class in a certain school.

| Marks (x) | $8 \le X < 9$ | $9 \le X < 11$ | $11 \le X < 13$ | $13 \le X < 16$ | $16 \le X < 20$ | $20 \le X < 21$ |
|---|---|---|---|---|---|---|
| No. of students (y) | 2 | 6 | 8 | 3 | 2 | 1 |

Use the table to represent the information on a histogram. (3mks)

**16.** Find the inverse of the matrix $\begin{pmatrix} 2 & 1 \\ 3 & 2 \end{pmatrix}$ and hence solve the simultaneous equations below **(4mk)**

$2x+y=21$

$3x+2y=34$

## SECTION II (50 MARKS)

## ANSWER ANY FIVE QUESTIONS.

**17.** A bag contains 5 red , 4 white and 3 blue beads. Two beads are selected at random.

(a) Draw a tree diagram and list the probability space. **(3mks)**

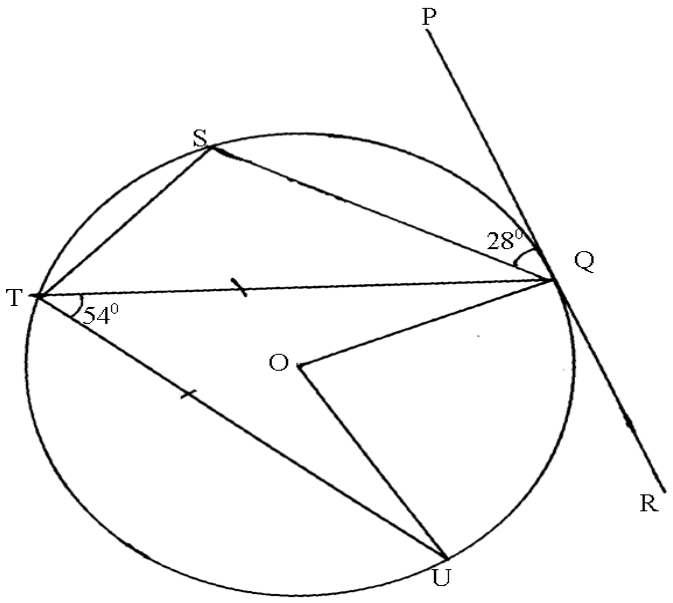
**(b)** Find the probability that

(i) The last bead selected is red. **(2mks)**

(ii) The beads selected were of the same colour **(2mks)**

(iii) At least one of the selected beads is blue. **(3mks)**

**18. In** the figure below,O is the centre of the circle.PQR is a tangent to the circle at Q. Angle PQS=$28^0$,angle UTQ=$54^0$ and UT =TQ.




Giving reasons , determine the size of

(**a)** Angle STQ. **(2mks)**

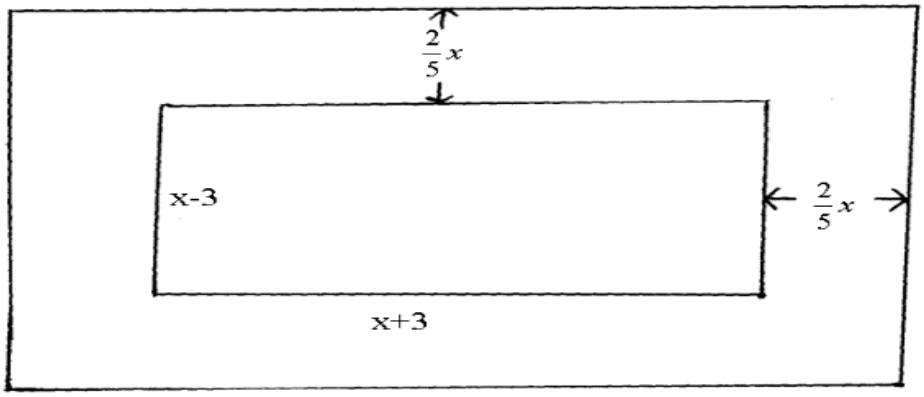
(b) Angle TQU. **(2mks)**

(c) Angle TQS **(2mks)**

(d) Reflex angle UOQ . **(2mks)**

(e) Angle TQR. **(2mks)**

**19.** The following figure represent a dancing floor with a carpeted margin all around of $\frac{2}{5}x$ wide leaving a dancing space of (x-3)m by (x+3)m




If the total area of the entire room is $315m^2$

**(a)** Calculate the value of x. **(5mks)**

(b) Calculate the area of the carpeted margin. **(3mks)**

(c) If the carpet cost sh. 750 per $m^2$,calculate the total cost of the sealed margin. **(2mks)**

**20.** John bought 3 brands of tea, A B and C. The cost price of the three brands were sh 25, sh 30, sh 45 per kg respectively. He mixed the three brands in the ratio 5:2:1 respectively: After selling the mixture he made a profit of 20%.

(a) How much profit did he make per kilogram of the mixture? **(4 mks)**

**(b)** After one year the cost price of each brand was increased by 10%

(i) For how much did he sell one kilogram of the mixture to make a profit of 15%? (Give your answer to the nearest 5 cents) **(3 mks)**

**(ii)** What would have been his percentage profit if he sold one kilogram of the mixture at sh. 45. **(3 mks)**

**21.** A car accelerates from rest for 10 seconds until it reaches a velocity of 12 metres per second.It then continues at this velocity for the next 40 seconds after which it brakes and comes to rest until a constant retardation of 1.5 meres per second

(a) Determine

(i) The acceleration over the first 10 seconds **(2mks)**

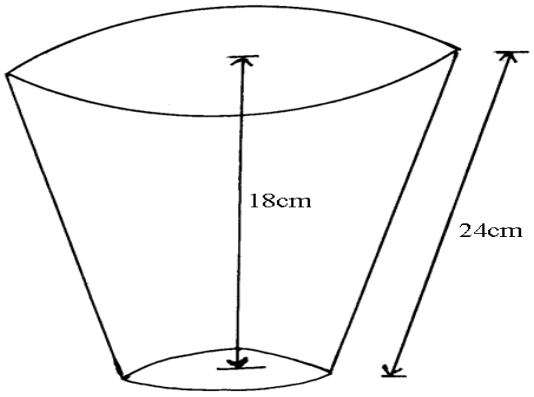
(ii) The time taken during the retardation **(2mks)**

(b) Draw the velocity time graph for the journey and use it to determine.

(i) The total distance covered by the car **(4mks)**

**(ii)The** percentage of the total distance which was covered during the first 15 seconds. **(2mks)**

**22. The** diagram below shows a flower vase of depth 18cm.The ratio of the top and bottom diameters is 5:2 (Take $\prod$ =3.142)




Calculate

(a) The volume of the flower vase **(7mks)**

(b) The curved surface area of the flower vase **(3mks)**

**23.** Given that x-y=3 and 3x+y=17, find without solving for X and Y the value of

(a) $2xy-x^2-y^2$ **(2mks)**

(b) $6xy+y^2+9x^2$ **(2mks)**

(c) $3x^2-2xy+y^2$ **(3mks)**

(d) $\frac{3x^2-4xy+y^2}{9x^2-y^2}$ **(3mks)**

**24.** Three Kenyan warships A,B and C are at sea such that ship B is 450km on a bearing of $030^0$ from ship A. ship C is 700km from ship B on a bearing of $120^0$.An enemy ship D is sighted 1000km due south of ship B.

(a) Taking a scale of 1cm to represent 100km locate the position of the ships A,B,C and D **(4mks)**

**(b)** Find the compass bearing of :

(i) Ship A from ship D **(1mk)**

(ii) Ship D from ship C **(1mk)**

**(c)** Use the scale drawing to determine

(i) The distance of D from A **(1mk)**

(ii) The distance of C from D **(1mk)**

**(d)** Find the bearing of :

(i) B from C **(1mk)**

(ii) A from C (1mk)

# FORM 3 MIDTERM 2 EXAMS

## SERIES 1

# MATHEMATICS

## PAPER 2

**TIME: 2½ HOURS**

**NAME…… ADM NO; ……**

**CLASS…… DATE……**

**INSTRUCTIONS TO CANDIDATES:**

- *Write **your name** and **admission number** in the spaces provided above*
- *This paper contains **two sections;** Section **I** and section **II.***
- *Answer **all** the questions in section **I** and only **five** questions from section **II.***
- *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.*
- *Calculators 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 EXAMINER'S USE ONLY;**

**Section I**

| Questions | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | **TOTAL** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marks | | | | | | | | | | | | | | | | | |

**Section II**

| **Questions** | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | **TOTAL** |
|---|---|---|---|---|---|---|---|---|---|
| **Marks** | | | | | | | | | |

**GRAND TOTAL**

**1**. Evaluate without using tables or calculators. **(3mks)**

$$\sqrt{\frac{0.8064 \times 6.048}{1.008 \times 0.1344}}$$

**2.** Evaluate $\dfrac{-4 \text{ of } [(-4 + -5 \div 15) + -3 - 4 \div 6)]}{84 \div -7 + 3 - - 5}$ **(2mks)**

**3.** Solve for $\theta$ without using table given that $0 \leq \theta \leq 90^{o}$ and that $\sin(2\theta - 30^{o}) - \cos 4\theta = 0$ **(3mks)**

**4.** Solve for x given that $5^{2x+2} - 20 \times 5^{2x} = 625$ **(3mks)**

**5.** The angle of a quadrilateral ABCD in order are 2 (x -10), 4 (x + 5), 5(x+4) and (x-20) in degrees. Find the exterior angles of the quadrilateral. **(4mks)**

**6.** A radio costing kshs. 1240 is marked to sell at a price calculated to give a profit of 40 %. What will be its selling price in sale when 25% is taken off the marked price? **(3mks)**

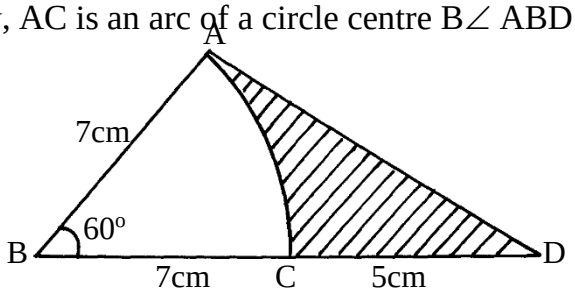
**7**. Show that if OA = - i+ 7j, OB = 3i – 5j and OC = 4j, then points AB and C are collinear.

**(4mks)**

**8.** Four men can dig 2 acres of land in 3 days working 4 hour a day. How many men are required to dig 5 acres of land in 4 days working 3 hours a day at the same rate. **(3mks)**

**9.** The surface area of two similar bottles are 12 $cm^2$ and 108$cm^2$ respectively. If the larger one has a volume of 810 cm3. Find the volume of the smaller one. **(3mks)**

**10.** In the figure given below, AC is an arc of a circle centre B$\angle$ ABD = $60^o$, AB = BC = 7cm and CD= 5 cm.




**Calculate**

a) The area of triangle ADB **(2mks)**

b) The area of the shaded region. **(2mks**

**11**. Solve the inequalitites and represent the information on the number line. **(3mks)**

$-3+2x<3x+2<4(x-5)$

**12.** Make x the subject of the formula in $3s=2p\sqrt{\frac{x}{3x-5}}$ **(3mks)**

**13.** Given x = 13.4cm and y = 4.3 cm. calculate the percentage error in $\frac{x}{y}$ correct to 4 d.p **(3mks)**

**14.** A straight line through the point A (2, 1) and B (4,m) is perpendicular to the line whose equation is 3y = 5 – 2x, Determine the value of m. **(3mks)**

**15.** Okoth deposited some money at 10% compound interest compounded annually. How long will it take to double the amount to the nearest year? **(3mks)**

**16.** Chebet has 5 brown chicken and 3 black ones. She picks two of them for slaughter at random, one after the other. What is the probability that the two are of different colours. **(3mks)**

## SECTION II

***Answer only five questions.***

**17. A** bus left Nairobi at 8.00am and traveled towards BUsia at an average speed of 80km/hr. At 8.30 am a car left Busia for Nairobi at an average speed of 120km/hr. Given that the distance between Nairobi and Busia is 400km.

**Calculate:**

a) The time the car arrived in Nairobi. **(2mks)**

b) The time the two vehicles met. **(4mks)**

c) The distance from Nairobi to the meeting point. **(2mks)**

d) The distance of the bus from Busia when the car arrived in Nairobi. **(2mks)**

**18.** A triangle whose vertices are A (1,4) B ( 2,1) and C (5,2) is given the following transformation:

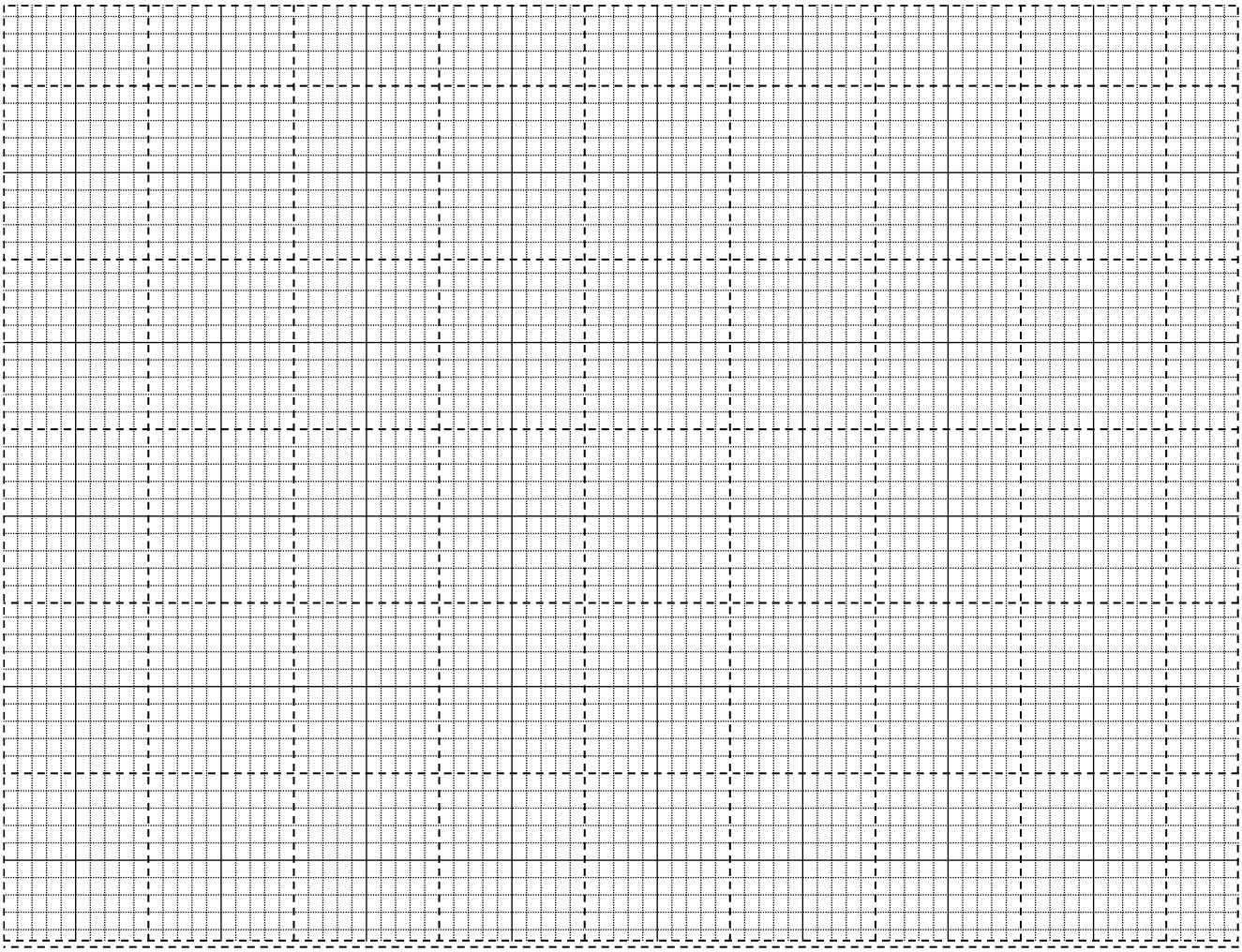
i) Reflection in the line y = -x to $A^1B^1C^1$

ii) $A^1B^1C^1$ is then given rotation of + $90^o$ about the origin to $A^{11}B^{11}C^{11}$

iii) $A^{11}B^{11}C^{11}$ is then given a translation vector $\begin{pmatrix} -2 \\ 1 \end{pmatrix}$ to $A^{11}B^{11}C^{11}$

iv) $A^{11}B^{11}C^{11}$ is then given an enlargement scale factor – 2 centre (0, 0) to $A^{IV}\,B^{IV}\,C^{IV}$.

On the given grid plot a triangle ABC and it's images $A^1B^1C^1$, $A^{11}B^{11}C^{11}$, $A^{111}B^{111}\,C^{111}$ and $A^{IV}\,B^{IV}\,C^{IV}$. And give coordinates of $A^{IV}\,B^{IV}\,C^{IV}$. **(10mks)**



**19.** A Post OT stand vertically on level ground John moves from O, the foot of the flag post to point R, on the level ground. The points T, O and R from a right angled isosceles triangle whose perimeter is 56m. S is another point on the level ground 35m from O calculate:

**a) The** angle of elevation of T from S. **(6mks)**

b) The distance ST. **(2mks)**

**c)** Find the maximum possible distance between R and S. **(2mks)**

**20.** A salesman received a basic salary of sh. 50,000 a year together with a commission of 6 % on the value of goods sold and a car allowance of sh. 2.50 per km.

a) Find the total amount he received in a year in which he sells goods worth sh. 625,000 and travels 10,000km. **(4mks)**

**b)** The next year he travels 12,000km and receives a total of shs. 134,000

i) Calculate the value of goods sold. **(4mks)**

ii) Calculate the percentage increase in the value of the goods sold. **(2mks)**

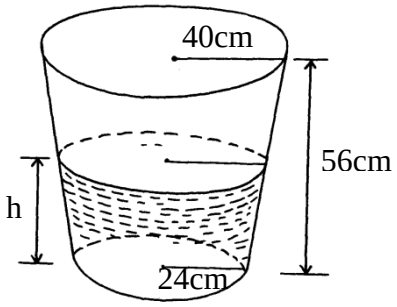
**21.** Two airports a and B are such that B is 500km due east of A. two plane P and Q take off from A and B respectively and at the same time.Plane P files at 360km/hr on a bearing of $030^{o}$ Plane Q flies at 240km/hr on a bearing of $315^{o}$The two planes land after 90 minutes.Using a scale of 1: 10,000,000

a) Show the positions of the planes after 90 min. **(6mks)**

**b)** Find the distance between the planes after 90 min. **(2mks)**

**c)** Find the bearing of plane Q from plane P after 90 minutes **(2mks)**

**22.** The figure below shows a container in form a frustrum of an open top radius 40cm and base radiu24 cm. the depth is 56 cm.




**a)** Calculate the volume of the container in litres. **(4mks)**

b) Of the container is ¾ full of water by volume,

Calculate the radius of the meniscus. **(6mks)**

**23.** Use a ruler and compass only in this question.

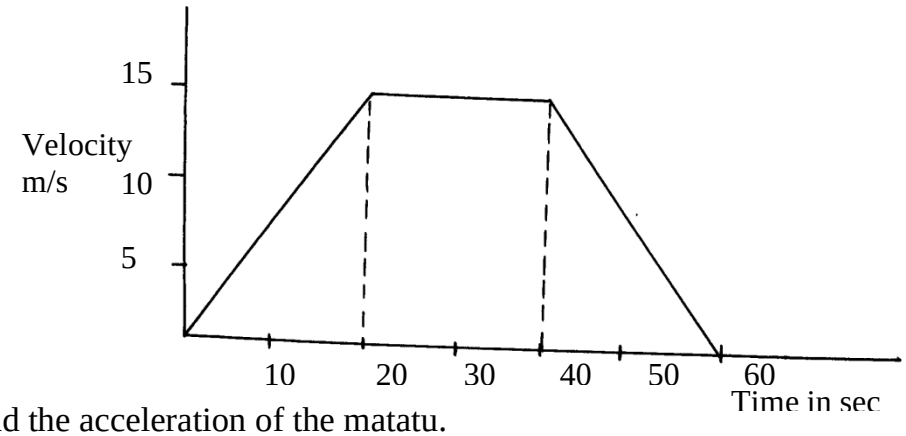
a) Construct $\Delta$ ABC such that AB = 6cm AC= 8.5 cm and $\angle$ BAC = $120^{o}$ **(3mks)**

**b)** Construct the locus $\ell$, of points equidistant from A and B **(2mks)**

**c**) Construct the locus $\ell$zof points equidistant from AB and BC **(3mks)**

**d)** Find the points of intersection, $P_1$ and $P_2$, of $1_1$ and $1_2$ and measure $P_1P_2$ **(2mks)**

**24.** The diagram below shows the graph of a moving matatu from one bus stop to another.




**a)** Find the acceleration of the matatu. **(2mks)**

**b)** Find the deceleration of the matatu **(2mks)**

**c)** Calculate the distance the matatu while accelerating. **(2mks)**

**d) Calculate** the distance the matatu covered while traveling at an acceleration of $0m/s^2$ **(2mks)**

**e) Find** the distance between the two bus stops. **(2mks)**

# THE END

***For Marking Schemes, Contact Mr Isaboke***

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