EXCELLING STUDENTS FORM FOUR 4 MOCK SERIES 2 EXAMS *(ALL SUBJECTS TESTED)*



EXCELLING STUDENTS FORM 4 MOCK SERIES TWO EXAMS

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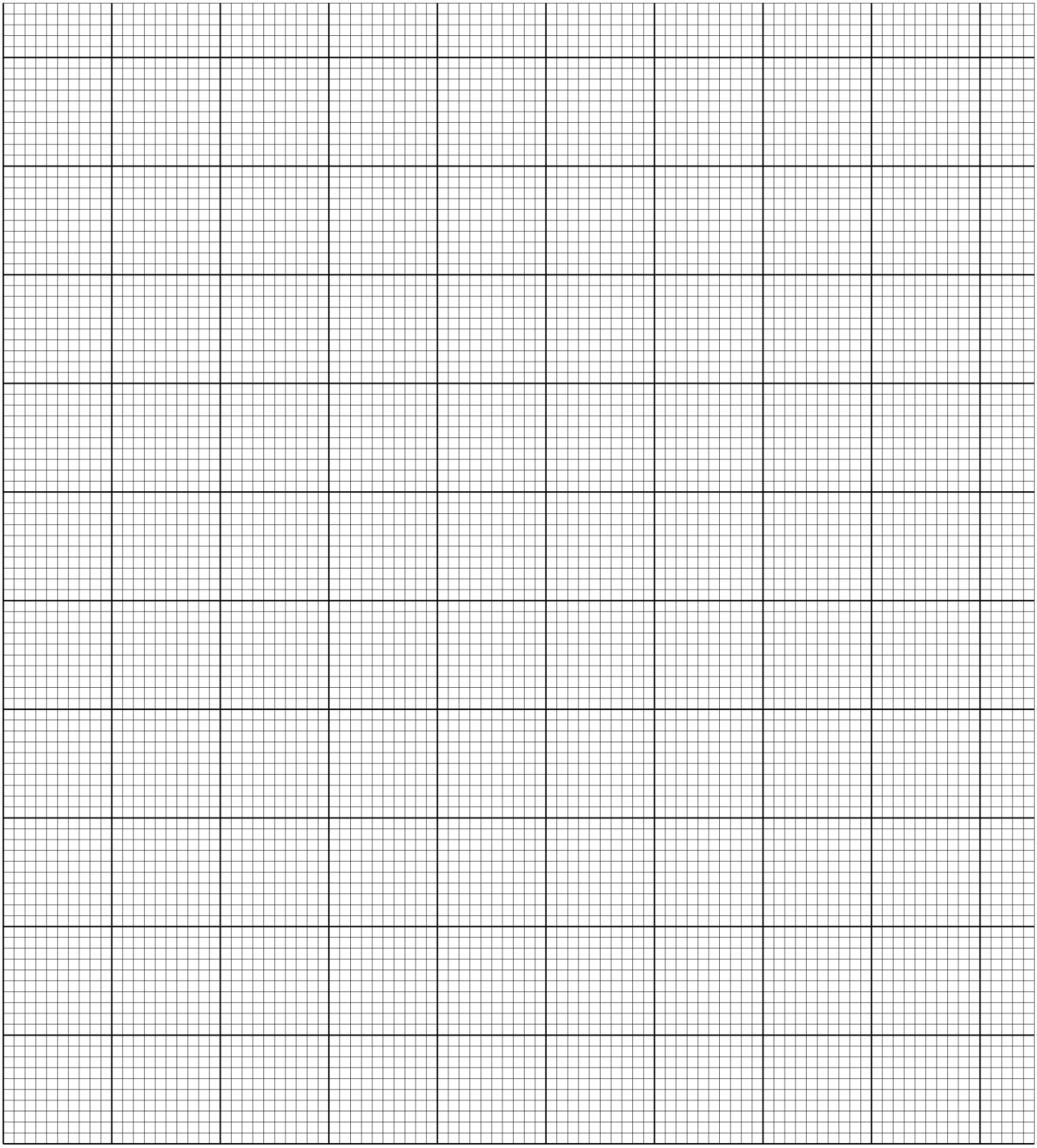
ORDER OF THE 14 SUBJECTS TESTED *(ALPHABETICALLY ARRANGED)*

1. **AGRICULTURE**
2. **BIOLOGY**
3. **BUSINESS STUDIES**
4. **CHEMISTRY**
5. **COMPUTER**
6. **C.R.E**
7. **ENGLISH**
8. **GEOGRAPHY**
9. **HISTORY**
10. **HOMESCIENCE**
11. **I.R.E**
12. **KISWAHILI**
13. **MATHS**
14. **PHYSCIS**

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GRAPH PAPER

NAME: ……



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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..……..

SHOOOL: ……..

ADM NO: ……..……. SIGN: ……..…..… DATE: ……..……..

AGRICULTURE

(QUESTION PAPER I)

FORM FOUR

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- Write your **name** and **index number** in the space provided.
- **Sign** and **write the date** of examination in the space provided
- This paper consists of three section **A, B** and **C**.
- Answer all questions in section **A** and **B**.
- Answer any two questions in section C
- All the questions should be answered in the spaces provided.

FOR EXAMINERS USE ONLY

SECTION	QUESTINS	MAX SCORE	CANDIDATES SCORE
A	1-16	30	
B	17-20	20	
	21	20	
	22	20	
	23	20	
TOTAL		90	

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SECTION A (30MARKS)

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

1.Give four advantages of intensive farming. **(2mks)**

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2.State four benefits of agroforestry to a maize crop. **(2mks)**

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3.Name the plant part used for vegetative propagation of each of the following plants.

(i) Sisal . **(½mk)**

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(ii) Pyrethrum **(½mk)**

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(iii) Sweet potatoes **(½mk)**

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(iv) Sugar cane **(½mk)**

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4. State four cultural ways of controlling couch grass **(2mks)**

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5. Name three sources of underground water **(1½mks)**

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6.State three causes of blossom end of rot in tomatoes **(1½mks)**

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7. Give three qualities of a good green manuring plant **(1½mks)**

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8.State four reasons for practicing minimum tillage. **(2mks)**

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9. Name four farm records that should be kept by a poultry farmer. **(2mks)**

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10. Give three ways in which pastures are classified **(1½mks)**

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11. State four ways in which land reforms can be implemented in Kenya. **(2mks)**

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12. State four factors that determine the stage at which a crop is harvested. **(2mks)**

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13. Give four beneficial effects of weeds to a farmer. **(2mks)**

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14. Give four advantages of practicing crop rotation. **(2mks)**

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15. Name four methods of controlling pests. **(2mks)**

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16. Distinguish between intensive hedgerow and border planting forms of agroforestry **(2mks)**

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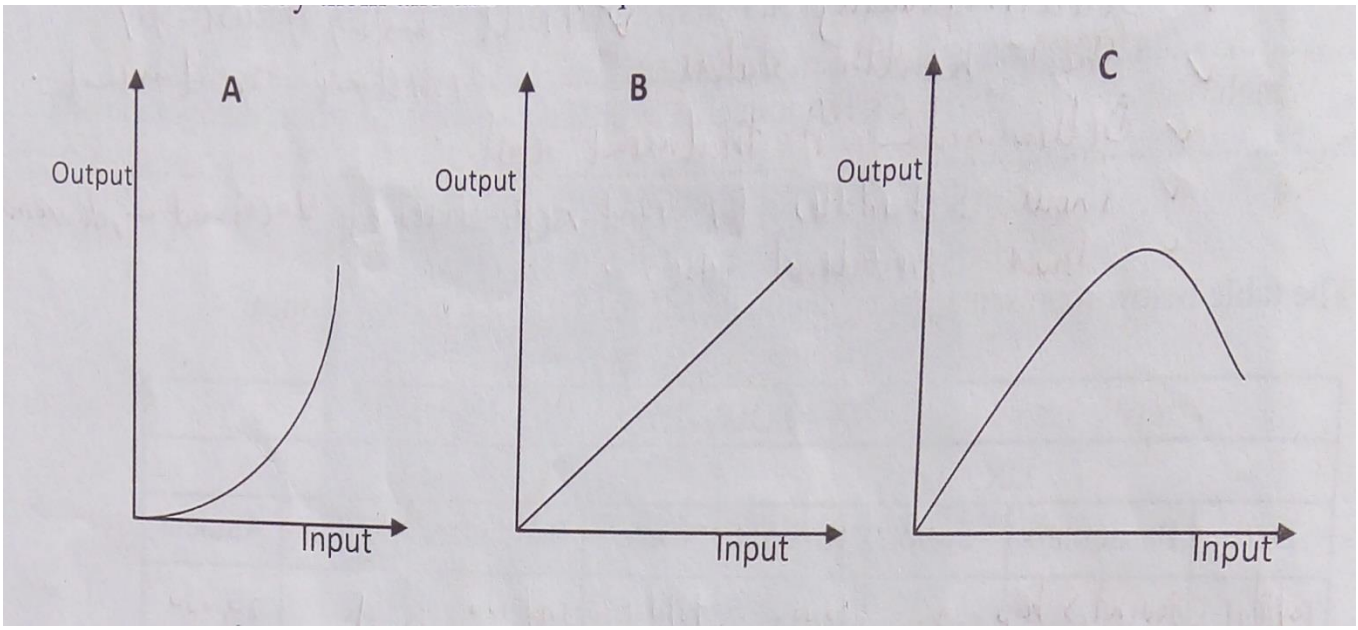
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SECTION B (20 MARKS)

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

17. The following illustrations show different production function curves in agricultural economics. Study them and answer the questions which follows;



(a) Identify the production function curves labeled A, B and C

A ……..…….. **(1mk)**

B ……..…… **(1mk)**

C. ……. **(1mk)**

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(b) What does the law derived from the production function labeled C state? **(1mk)**

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(c)

(i) Which one of the three production functions curves is rare in Agriculture **(1mk)**

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

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18. The table below shows the population and gross domestic products of countries A and B

Country	Gross Domestic product (million Ksh)	Population (million)
A	1800	36
B	1200	15

(a) Calculate the per capita income for each country show your working **(2mks)**

(b) Which of the two countries is more developed economically **(1mk)**

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

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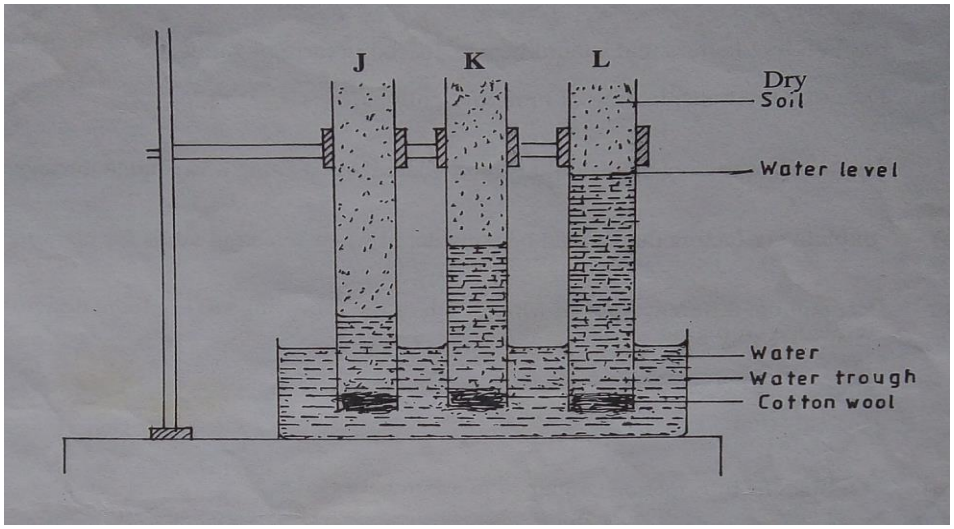
(d) How can agriculture increase the gross domestic product of a country **(1mk)**

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19. The diagram below illustrate investigation on a property of soil using soil samples labeled J, K and L.



(a) Name the property of soil being investigated **(1mk)**

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(b) What is the relationship between the soil property above and the size of soil particles? **(1mk)**

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(c) Which soil sample would be suitable for growing paddy rice? **(1mk)**

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(d) Give a reason for your answer in (c) above **(1mk)**

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20. The following is a list of nutrients: copper, calcium, nitrogen, molybdenum, zinc, phosphorus, carbon, sulphSSSSSur, iron and magnesium. Which of the above nutrients are;

(a) Macro – nutrients **(1mk)**

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(b) Micro – nutrient **(1mk)**

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(c) Fertilizer elements **(1mk)**

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(d) Liming elements **(1mk)**

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(e) Primary macro nutrients **(1mk)**

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SECTION C

Answer any two questions in this section in the spaces provided after question.

21.

(a) Explain five functions of a live fence in a farm. **(5mks)**

(b) Describe various risks and uncertainties in crop farming **(10mks)**

(c) State five functions of young farmers clubs in Kenya **(5mks)**

22.

(a) Explain five factors that should be considered in farm planning **(10mks)**

(b) Explain the different ways in which each of the following environmental factors influence crop production.

(i) Wind **(5mks)**

(ii) Temperature **(5mks)**

23.

(a) Outline the information contained in a purchase order. **(5mks)**

(b) Describe the harvesting of tea **(7mks)**

(c) Explain the cultural methods of controlling soil erosion **(8mks)**

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NAME: ……..

SHOOOL: …….

ADM NO: ……... SIGN: ……..… DATE: ……..

AGRICULTURE

(QUESTION PAPER II)

FORM FOUR

TIME: 2½ HOURS

SECTION A: (30 MARKS)

Answer all questions in this section in the spaces provided.

1. Name **three** meat breeds of sheep. **(1½mks)**

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2. List **two** methods of identifying pigs. **(1mk)**

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3.Differentiate between oestrus cycle and heat period. **(1mk)**

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4.State **three** qualities of marketable eggs. **(1½mks)**

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5.Name any **four** notifiable diseases in livestock. **(2mks)**

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6.State four factors that affect maintenance ration required by an animal **(2mks)**

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7.Give a reason why ruminant animals are able to digest grass. **(1mk)**

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8. Give the difference in meaning of the following terms as used in livestock health.

(a) Quarantine and Isolation **(1mk)**

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(b) Zoonotic and notifiable diseases **(1mk)**

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9. Give **four** reasons for feeding calves with colostrum. **(2mks)**

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10. Differentiate between cropping and harvesting in fish production. **(1mk)**

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11. State **four** major routes of administering vaccines in day old chicks. **(2mks)**

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12. Give <u>two</u> reasons for feeding bees **(1mk)**

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13. Name the vectors for each of the following livestock diseases**.** **(2mks)**

a) East coast fever**……**

b) Rift valley fever**……...**

c) Trypanosomiasis**……**

d) Nairobi sheep disease**…….....**

14. (a) Name the tools used in **(2mks)**

(i) Cutting curves on thin wood**……...**

(ii) Measuring the inner diameter of a circular object/surface**…….**

(iii) Cutting thin sheets of metal**……..**

(iv) Tightening wires during fencing**……..**

b) State **Four** care and maintenance practices of masonry tools and equipment**.** **(1mk)**

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15. State **two** ways in which proper feeding contributes to disease control in livestock. **(1mk)**

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16. Outline four factors which would be considered when culling layers**.** **(2mks)**

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17. a. What is parasitism? **(½mk)**

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b. Name one parasite of bees**.** **(½mk)**

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c.Give any four harmful effects of lice on livestock. **(2mks)**

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

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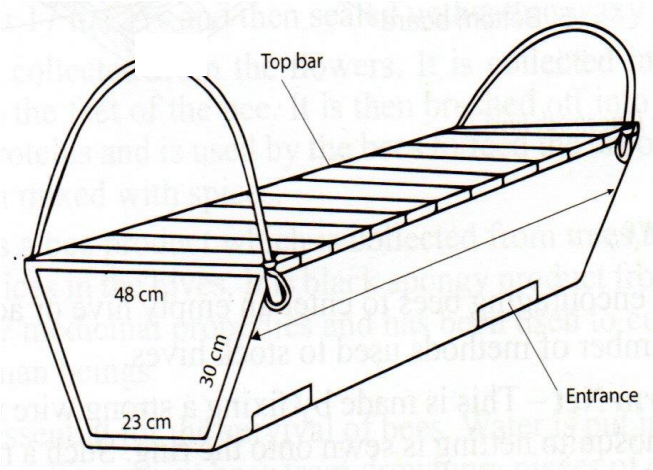
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SECTION B: (20 MARKS)

Answer all questions in this section in the spaces provided.

19. Below is a diagram of a bee hive.



a) Identify the type of hive above. **(1mk)**

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b) Give two advantages of using this type of hive on the farm. **(2mks)**

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c) State two reasons why bees swarm. **(2mks)**

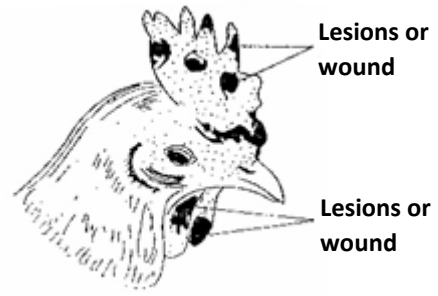
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20. The following diagram illustrate symptoms of a disease in poultry. Study it carefully and answer the question that follows.



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(a) Identify**: (i)** The disease. **(½mk)**

……

(ii) The causal organism. **(½mk)**

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(b) State **two** other symptoms of the disease apart from lesion. **(2mks)**

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(c) State **two** control measures for the disease. **(2mks)**

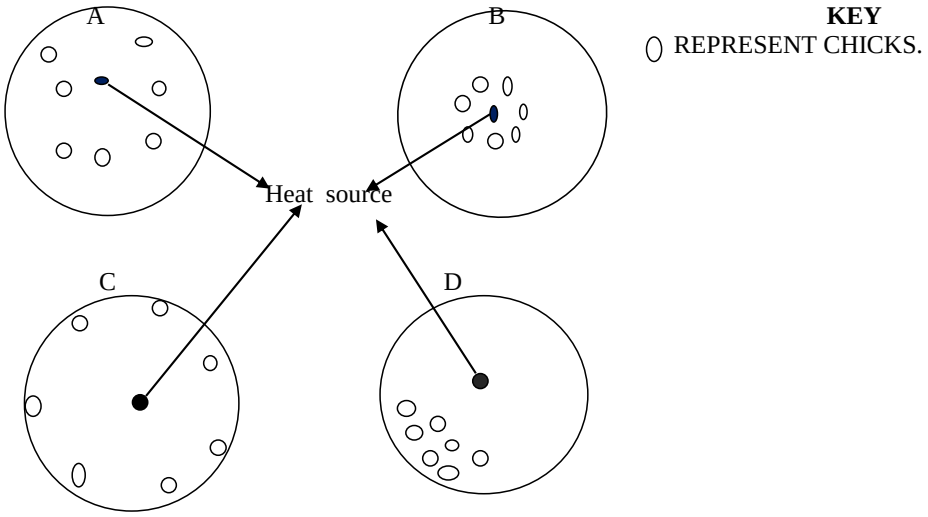
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21. The illustrations below shows behavior of chicks in a brooder in response to certain conditions. Study it carefully and answer the questions that follow.



(a) Explain the reasons for the behavior of chicks in the above diagrams **A, B, C & D** **(4mks)**

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(b) Give two other signs the chick will show other than the ones you have given in(a) above. **(1mk)**

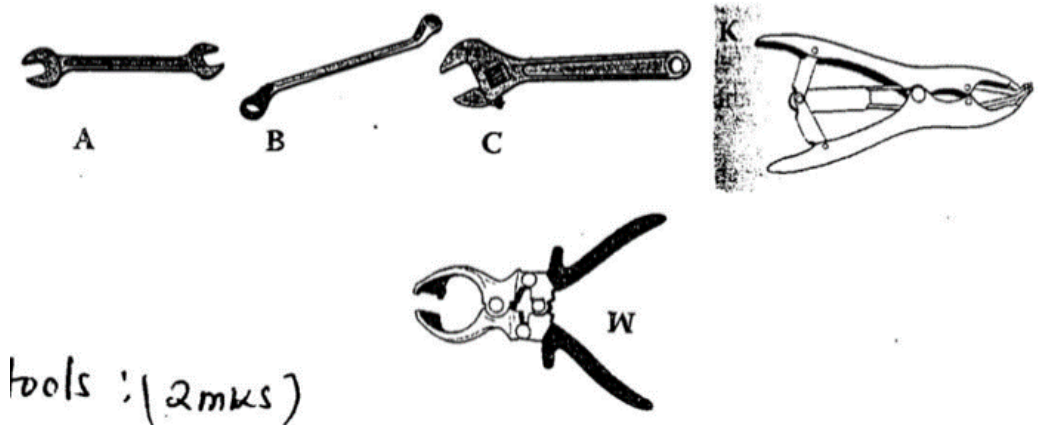
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22. The diagrams below show some farm tools. Study them and answer the question that follow.



tools :(2mks)

a) Name the tools. **(2mks)**

A: ……

B: ……

C: ……

W: ……..

b) State the functional differences between tools K and W. **(1mk)**

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c) What advantage does C have over A and B? **(1mk)**

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d) State **one** common maintenance practice carried out tool C and W. **(1mk)**

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SECTION C: (40 MARKS)

Answer any two questions from this section.

23.a) Describe trypanosomiasis disease under the following sub-headings.

i) Causal organism **(1Mk)**
ii) Animal attacked **(1Mk)**
iii) Symptoms of attacked animals **(5Mks)**
iv) Control measures **(3Mks)**

b) Describe **five** control measures for cannibalism in poultry **(5Mks)**

(c) Explain the procedure in establishment of foundation in farm buildings **(5mks)**

24.a) State the functions of any six parts of a plunge dip **(5mks)**

b) State five signs of parturition in cattle **(5mks)**

c) State five maintenance practices of a fish pond **(5mks)**

d) Explain five factors considered when selecting livestock for breeding **(5mks)**

25.

a) Describe the management of a sow during parturition. **(10mks)**

b) Describe the lifecycle of a three host tick. **(7mks)**

c) Outline **three** effects of endo-parasites to the host animals **(3mks)**

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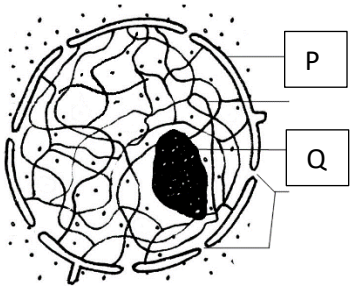
BIOLOGY PP1
(QUESTION PAPER I)
FORM FOUR
TIME: 2 HOURS

INSTRUCTIONS

1. All Questions are Compulsory
2. Write your Answers in the Spaces Provided
3. Wrong Spelling of Technical Terms shall be Penalized

Max Score	Student's Score
80	

1. The diagram shown below represents a nuscleus



a) State the role of the organelle labelled **Q** **(1mk)**

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b) Name a Kingdom whose members lack structure labelled **P** **(1mk)**

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c) Which is the general term given to organisms whose cells have structure **P**? **(1mk)**

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2. a) Name the **TWO** components of a lipid molecule **(1mk)**

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b) State **TWO** disadvantages of using fats as respiratory substrates **(2mks)**

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3.a) Name the pigment that protects humans from the negative effect of Ultraviolet lights **(1mk)**

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b) Explain how sunlight contributes to stronger bones and teeth in human beings **(2mks)**

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4. Name the main target organ of the following hormones: **(2mks)**

a) Aldosterone ……

b) Insulin ……

5.a) What is asexual reproduction? **(1mk)**

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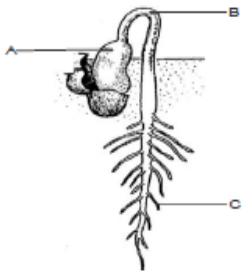
b) Give **TWO** disadvantages of sexual reproduction **(2mks)**

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6. The diagram shown below represents a seeding. Use it to answer questions that follow



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a) Give a reason why the plant above is a member of Class Dicotyledonae **(1mk)**

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b) Explain why the biomass of part labelled **A** will be lower compared to the one found in the seed stage of the same plant **(2mks)**

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7.a) State **TWO** ways in which blood clotting is important to a human being **(2mks)**

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b) What are the roles of thrombokinase enzyme during blood clotting? **(2mks)**

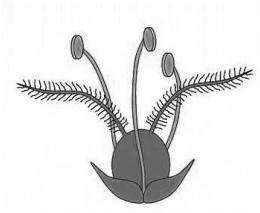
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8.The diagram shown below represents a flower



a) Name the agent of pollination for the flower shown above **(1mk)**

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b) Give **TWO** reasons for your answer in a) above **(2mks)**

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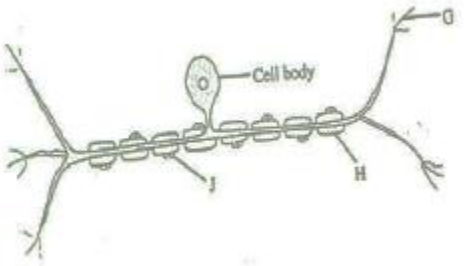
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9. State the differences between cones and rods in terms of the following **(2mks)**

Feature	Cone	Rod
Visual acuity		
Photochemical		

10. Use the diagram of a nerve cell shown below to answer questions that follow



a) With a reason, give the identity of the nerve cell **(2mks)**

Identity **……**

Reason **……**

b) Explain the significance of absence of part labelled **H** in nerve cells found in the brain . **(2mks)**

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11. Give **THREE** features that make modern man to be more adaptable to the environment **(3mks)**

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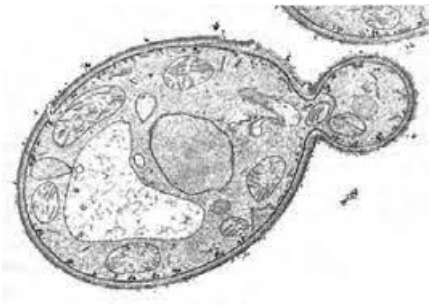
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12. The diagram below represents a living organism



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a) State **TWO** economic importance of the above organism in the food industry **(2mks)**

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b) Why does the rate of respiration reduce under the following conditions? **(2mks)**

i) Low temperature

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ii) Metabolic poison

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13. State **TWO** reasons why Biotechnology is important in modern science **(2mks)**

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14. a) Fill in the table shown below to give differences between continuous and discontinuous variation **(2mks)**

Continuous Variation	Discontinuous Variation

b) Explain how variation is important in the process of evolution? **(3mks)**

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15. a) Define the term species **(1mk)**

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b) State **TWO** contributions of Carolus Linnaeus (1708 – 1778) to taxonomy **(2mks)**

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16. a) In an experiment, Peter counted 9 cells along the diameter of field of view of a light microscope measuring 3.0mm. Determine the diameter of one cell in micrometers **(3mks)**

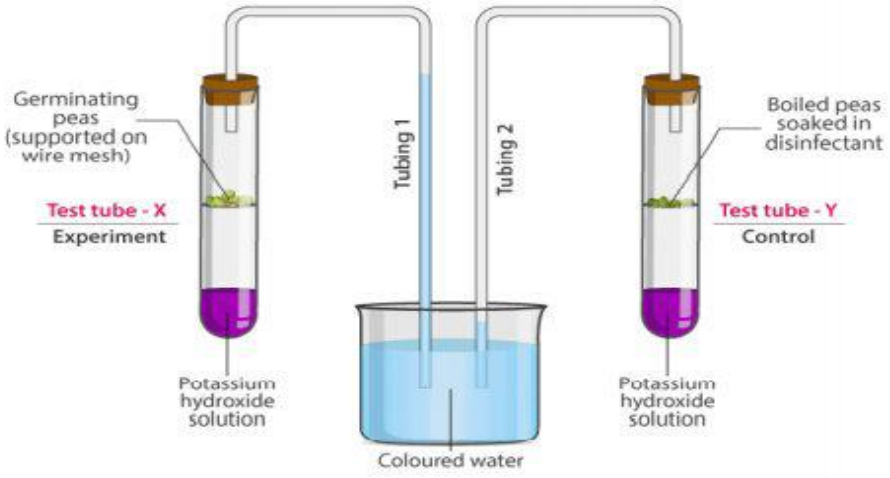
b) Why is electron microscope safer to the eye than light microscope during use? **(1mk)**

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17. The following diagram represents results of an experiment carried out on two sets of germinating seeds.



a) Account for the result shown in test tube **X** **(2mks)**

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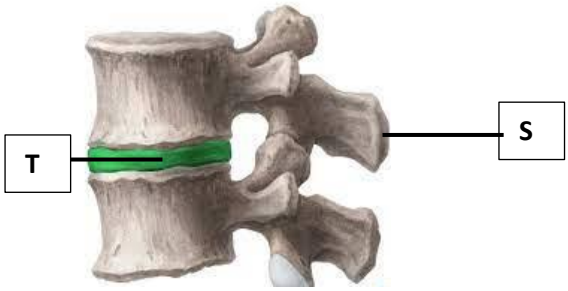
b) What is the importance of dipping the boiled seeds in a disinfectant in test tube **Y**? **(1mk)**

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18. The diagram shown below represents a section of the vertebral column



a) Name the part labelled **S** **(1mk)**

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b) State **TWO** ways in which part **T** is important to movement in human beings **(2mks)**

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19. Describe how the following cells adapt the structures where they are found to their functions

a) Companion cell **(2mks)**

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…….……

b) Schwann cell **(2mks)**

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20. A mother had a still birth and the expelled foetus showed clear signs of anaemia and jaundice

a) Give the name of this disorder **(1mk)**

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b) Describe how the disorder arose **(3mks)**

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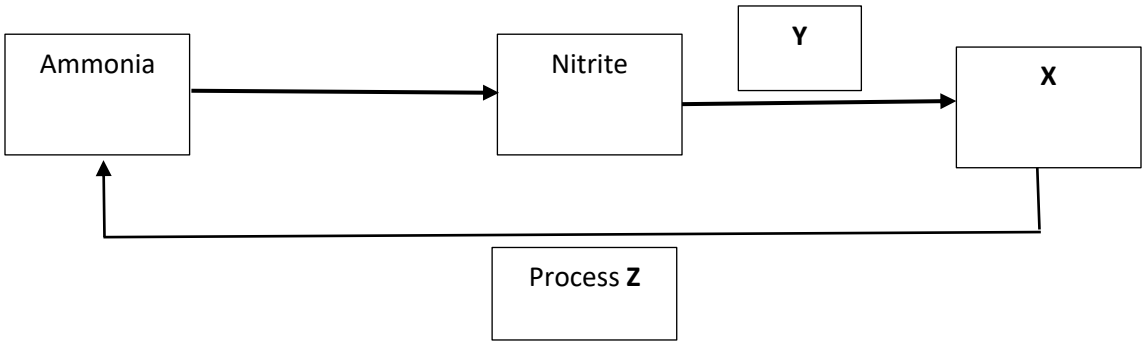
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21. The following equation represents a section of the Nitrogen Cycle



a) Name: **i)** Bacterium labelled **Y** ……. **(1mk)**

ii) Compound **X** ……. **(1mk)**

b) Explain how Process **Z** affect plant growth in an area? **(2mks)**

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22. Samson had a road accident resulting in serious head injuries that left him with the following conditions: Loss of balance, low body temperature; poor speech, unregulated breathing and memory loss. Name the part of the brain affected that led to the following:

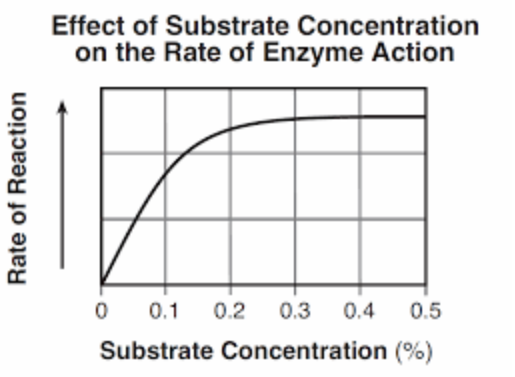
i) Low body temperature ……..……..…,,.. **(1mk)**

ii) Memory loss ……..……..…….. **(1mk)**

iii) Unregulated breathing ……..…… **(1mk)**

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23. The graph shown below represents effect of substrate concentration on rate of enzymatic reaction



a) Account for the rate of enzymatic reaction when the substrate concentration was between 0.3 to 0.5%. **(2mks)**

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b) Name the substrates for the following enzymes

i) Carbonic anhydrase ……..…… **(1mk)**

ii) Thrombin ……..... **(1mk)**

24. A tilapia fish has a full length of 300mm but measures 200mm from the mouth tip to its anus. Determine the tail power of the fish **(2mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..

ADM NO: ……..…. SIGN: ……..……..…. DATE: ……..

BIOLOGY

(QUESTION PAPER II)

FORM FOUR

TIME:2 HOURS

Instructions to candidate

(a) Write your name, school, index number in the space provided at the top of the paper.
(b) Sign and write the date of examination in the space provided above.
(c) This paper consists of two sections, **A** and **B**.
(d) Answer all the questions in section **A** in the spaces provided.
(e) In section **B** answer question **6 (compulsory)** and either **question 7 or 8** in the answer booklet provided.
(f) Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
(g) Candidates should answer the questions in English.

For Examiner's Use Only

Section	Question	Maximum Score	Candidate's Score
	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
	6	20	
	7	20	
	8	20	
		80	

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SECTION A (40 marks)

1.a) Using the diagrams below, construct a dichotomous key that can be used to identify the leaves. **(2mks)**



WHITE CLOVER



COTTON WOOD



BLACK WALNUT



HONEY LOCUST

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b) State two reasons for classifying living organisms **(2mks)**

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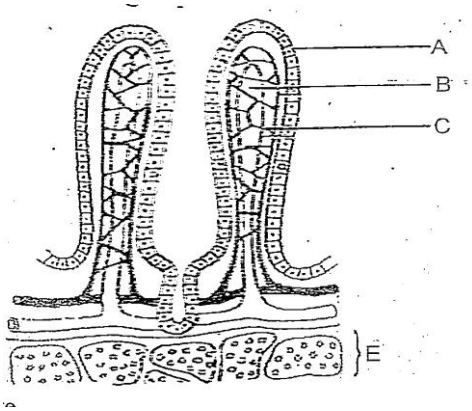
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2.The diagram below is a cross section through a part of human ileum.



(a)(i) Identify the structure drawn above **(1mk)**

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(ii) Sate the significance of the structure shown above. **(1mk)**

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(b) Name the parts labelled A, B and C **(3mks)**

A: ……

B: ……

C: ……

(c) Give the functions of the part labelled B and C **(2mks)**

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(d) Name the cell organelle more abundant in goblet cells. **(1mk)**

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3.a) In human, premature baldness is controlled by a gene on the **Y** chromosome. Using **B** to represent the gene for baldness, work out a cross between a bald man and his wife **.** **(4mks)**

(b)i) What is the probability of their daughters being bald**?** **(1mk)**

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ii) Give a reason for your answer. **(1mk)**

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(c) Name one trait in human beings that is determined by multiple allele**.** **(1mk)**

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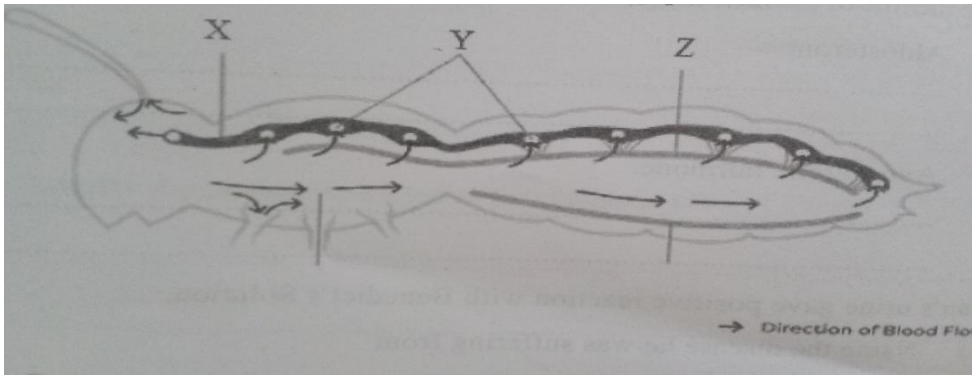
(d) Name one genetic disorder affecting the red blood cells. **(1mk)**

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4.Study the diagram below and answer the following questions.



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

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

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(b) Name the parts labelled X, Y and Z**.** **(3mks)**

X……

Y……

Z……

(c) Explain the disadvantage of having the above circulatory system in the animals. **(2mks)**

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(d) Explain why amoeba lack a circulatory system. **(1mk)**

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5. An experiment was carried out to find out the concentration of ions in the cell sap of an aquatic plant and that of the pond water in which they were found.

	Concentration in	
Ions	Cell sap	Pond water
Na^+	50	1.2
K^+	49	0.5
Mg^{2+}	11	3.0
Ca^{2+}	13	1.3
Cl^-	101	1.3
SO_4^{2-}	13	0.67

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(a)(i) Name the process by which the aquatic plant absorbs ions from pond water. **(1mk)**

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(ii) State the four roles of the process you have named in (a)(i) above in a mammalian body**.** **(4mks)**

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(b) Name the cell structure that allows passage of ions in and out of the cell. **(1mk)**

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(c) How can the rate of uptake of ions by the aquatic plant be increased? **(2mks)**

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SECTION B (40 marks)

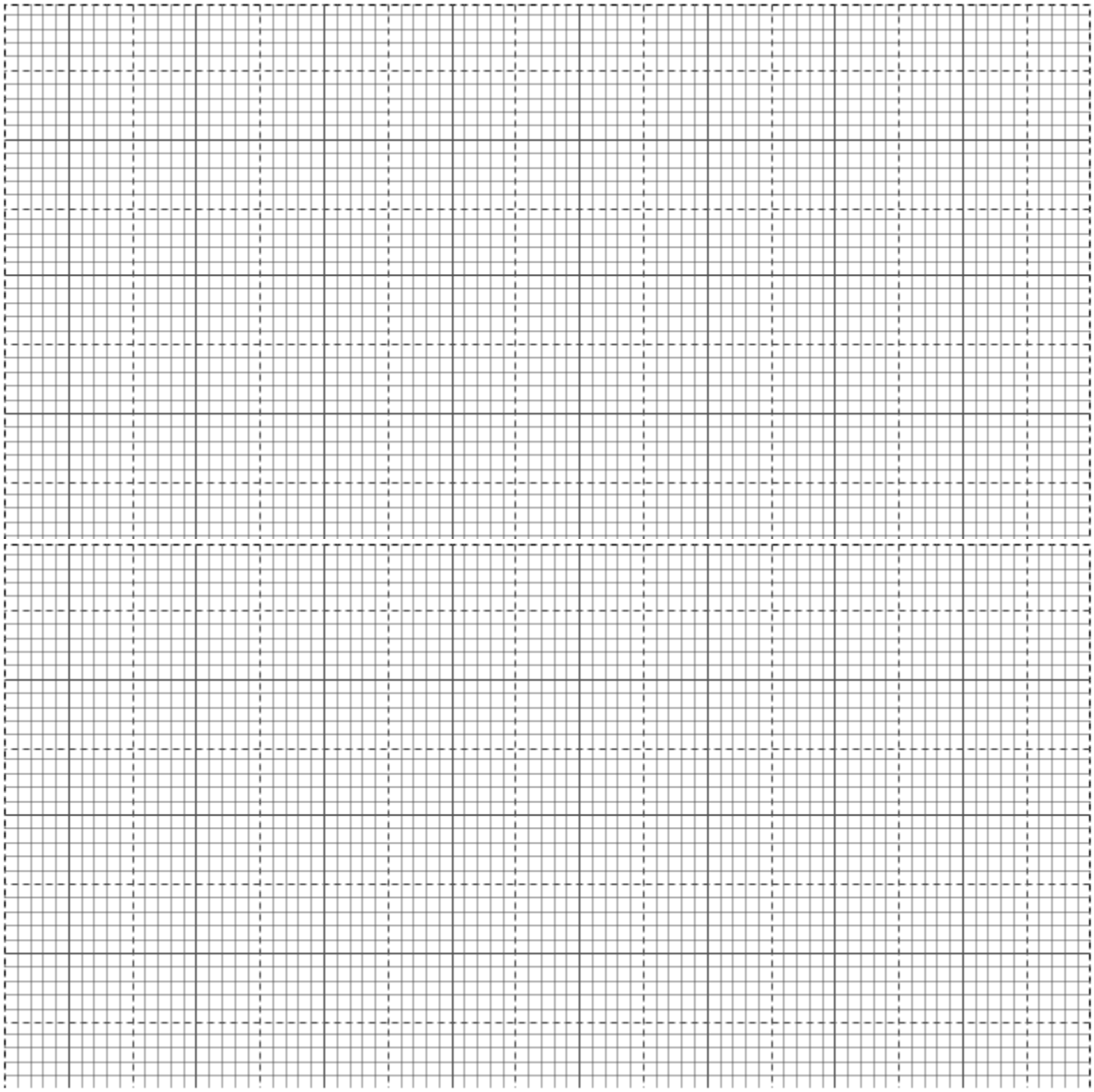
Answer question 6 (compulsory) and either question 7 or 8 in the spaces provided after question 8.

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

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

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a) On the grid provided, plot graphs of glucose levels in blood against time on the same axes . **(7mks)**



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

Y: .....

Z: .....

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c) Account for the level of glucose in present Y

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

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

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

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

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7. (a) (i) Give four modes of expressing food relationship in an ecosystem. **(4mks)**

(ii) Explain how food as a factor regulate the population of animals in an ecosystem. **(8mks)**

(b) How are desert plants adapted to conserving water? **(8mks)**

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

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..

SHOOOL: ……..……

ADM NO: ……..…. SIGN: ……..… DATE: …….……..

BIOLOGY

(QUESTION PAPER III)

PRACTICAL

FORM FOUR

TIME: 1 ¾ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) Write your **name, index number** and **school** in the spaces provided above.
(b) Sign and write the **date** of examination in the spaces provided above.
(c) Answer all the questions in the spaces provided.
(d) You are required to spend the first **15** minutes of the **1¾** hours allowed for
(e) this paper reading the whole paper carefully before commencing your work.
(f) This paper has **three** questions.
(g) Students should check the question paper to ascertain that all the papers are printed as indicated and that no questions are missing.
(h) Candidates should answer the questions in English.

FOR EXAMINER'S USE ONLY:

Question	Maximum Score	Candidate's Score
1	14	
2	12	
3	14	
Total Score	40	

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1. You are provided with visking tubing labeled **J**, a piece of thread and a solution labeled **K**.

Dip the visking tubing in distilled water to moisten it, open it, and then tie one end tightly with the thread provided.
Half-fill the visking tubing with solution **K** then tie the open end of the tubing tightly. Ensure solution **K** does not spill out of the tubing.
Immerse the visking tubing into distilled water in a beaker. Ensure that the visking tubing is completely immersed in the distilled water.
Leave the set-up for 20 minutes. Record your observations after 20 minutes.

(a) (i) Observations **(1mk)**

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(ii) Explain you observations in a (i) above. (**2mks)**

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(b) Remove the visking tubing carefully. Ensure the contents of the visking tubing do not mix with that of the beaker.Using the reagents provided, test for the food substance present in the visking tubing and the beaker.

I. Visking tubing **(4mks)**

FOOD TEST	PROCEDURE	OBSERVATIONS	CONCLUTION
Starch			
Reducing sugars			

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II. Beaker **(4mks)**

FOOD TEST	PROCEDURE	OBSERVATIONS	CONCLUTION
Starch			
Reducing sugars			

(c) Explain observations in the visking tubing and Beaker in 1(b) above. **(3mks)**

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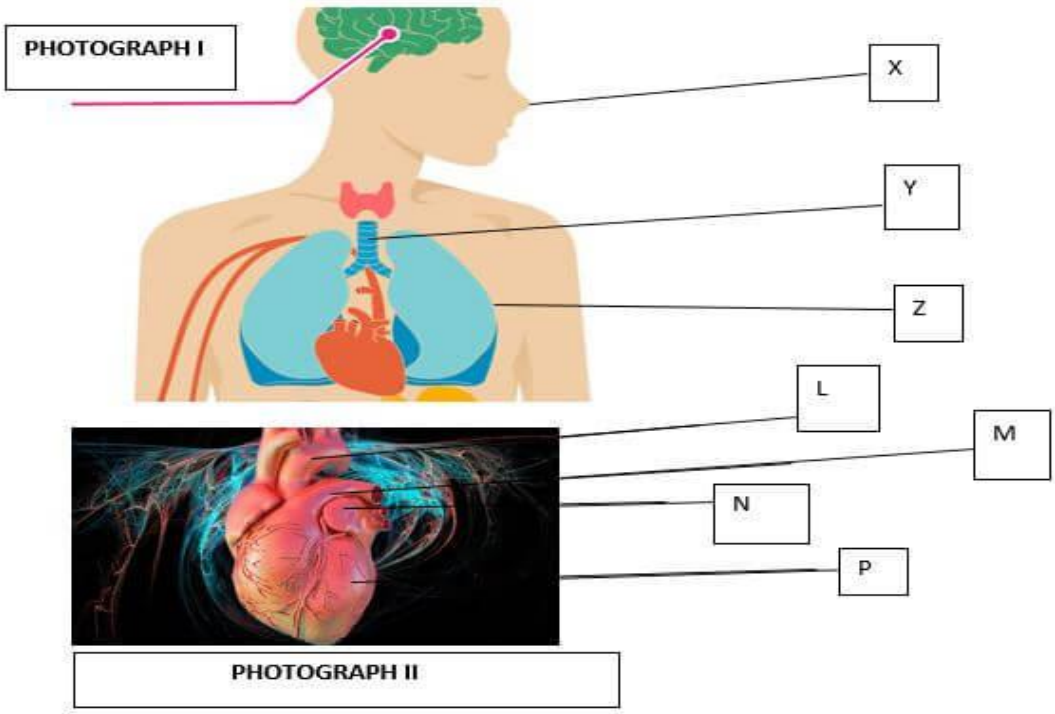
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2. The photographs I and II below illustrate parts of mammalian systems. Study them and answer the questions that follow.



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(a) Identify the two mammalian systems shown above. **(2mks)**

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(b) Name the membrane that covers part marked P and Z**.** **(2mks)**

P……

Z……

(c) Describe two ways by which organ P and Z are protected**.** **(2mks)**

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(d) How is the part labelled Y adapted to perform its function**.** **(2mks)**

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(e) Identify the part labelled N. **(1mk)**

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(f) State the difference in the content of blood in L and M**.** **(1mk)**

L	M

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(g) State the role of the inner part of X in ensuring a healthy system. **(2mks)**

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3. You are provided with specimens labeled S_1 , S_2 and S_3

(a) Using a scalpel blade split S_1 longitudinally and draw a well labeled diagram to show the internal structures**.** **(4mks)**

(b) With a reason, state the class of the plant from which specimen S_1 was obtained.

(i) Class **(1mk)**

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(ii) Reason **(1mk)**

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(c) Specimen S_2 is a germinated seedling of S_1.
In the table below, name three structures of S_1 and identify the structures they developed into in specimen S_2 **(3mks)**

Structure in S_1	Structure developed into, in S_2
1_____	_____
2_____	_____
3_____	_____

(d) i) Using specimens S_2 and S_3 ,name the type of germination**.** **(2mks)**

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ii) Give a reason for your answer in S_3 above. **(2mks)**

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iii) Account for the type of germination in S_2 **(2mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……..……. SIGN: ……..……..… DATE: ……..

BUSINESS STUDIES (565/1)

FORM FOUR (4)

Time: 2 Hours

ANSWER ALL QUESTIONS IN THIS PAPER

1.Outline four benefits that consumers get from warehousing. **(4mks)**

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2. Name the business document that each of the following descriptions refers.(4 Marks)

Description	Document
a)It is used to correct an overcharge in an invoice	
b)It is used to alert the buyer that ordered goods are on the way	
c)Summarize all monthly credit transactions between regular buyer and seller.	
d)It is a reply to an inquiry which contains descriptions, illustrations, terms of sale and prices of goods	

3. Outline four reasons why a business person may prefer written communication to verbal communication. **(4Mks)**

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4. Outline factors that may lead to a shift in the supply curve to the right. **(4mks)**

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5. Using a tick(√) indicate the effect of the following transactions on capital **(4mks)**

Transaction	Increase	Decrease	No effect
a)Withdrew cash for personal use			
b)Used personal savings to buy stock			
c)Paid a creditor by cheque			
d)Bought office furniture in cash			

6. Omamo a trader had the following assets and liabilities on 1st February 2020.

	Shs
Capital	120,000
Machinery	80,000
Trade creditors	10,000
Trade Debtors	20,000
Stock in trade	25,000
Cash at hand	5,000

On 2nd Feb the following transactions took place
Purchased goods on credit for shs. 15,000
Received a cheque sh. 10,000 from a debtor
Sold the machinery for shs. 90,000 in cash

Required: Prepare Omamo Balance Sheet as at 2nd January 2020 after the above transactions (5mks)

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7.State four external factors that may positively influence the operation of a business**.** **(4mks)**

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8. Outline four circumstances when the government may introduce regulatory measures to protect consumers from exploitation by business people. **(4mks)**

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9.State four features of a perfectly competitive market **(4mks)**

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10. Identify four factors that may cause demand- pull inflation to occur in a country **(4Mks)**

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11. The following transactions relate to Salim traders

a) 15th Feb 2020 sold an old business vehicle for shs. 150,000 on credit to Recovery Motors

b) 20th Feb 2020 bought a new sewing machine on credit from singer limited for shs.50,000

Required: Record the above transactions in a General Journal

12. State four demerits that are associated with water transport. **(4Mks)**

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13. State four advantages of an open office layout to an organization **(4mks)**

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14. Highlight four features private limited company **(4Mks)**

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15. Open relevant ledger accounts using the following information**.** **(4Mks)**

1/2/2011 started business with sh. 10,000 in cash and sh. 50,000 at bank.

2/2/2011 Bought goods on credit from LK traders worth sh.5000

4/2/2011 Withdrew sh. 2000 from bank for office use.

16. Outline four circumstances where personal selling is appropriate. **(4Mks)**

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17. Highlight four benefits that a firm may enjoy by preparing a business plan**.** **(4Mks)**

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18. Highlight four forms of economic integration **(4Mks)**

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19. A business had the following record for the year ended 31st December 2018

Capital as at 31/12/18	64,000
Net profit for the year	14,000
Capital as at 1st Jan 2018	42,000
Monthly drawings	1,500

Calculate the additional investments made during the year **(4Mks)**

20. Outline four principles that guide a government in spending public finance **(4Mks)**

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21. State four negative implications of ageing population in a country **(4Mks)**

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22. State four errors which may affect the agreement of a trial balance **(4mks)**

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23. The following information relates to Mumbua traders for the year ended 31st April 2020.

Cash at bank	30,000
Cash in hand	40,000
Current liability	500,000
Sales	920,000
Opening stock	150,000
Closing stock	230,000
Margin 25%	
Expenses 15% of sales	

Determine

i) Gross profit **(1Mk)**

ii) Cost of sales **(1Mk)**

iii) Purchases for the year **(1Mk)**

iv) Net profit **(1Mk)**

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24. State any four money transfer facilities offered by commercial banks (4 Marks)

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25. State four problems encountered at the plan implementation stage in economic planning and development **(4Mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……. SIGN: ……..…… DATE: ……..……..

BUSINESS STUDIES (565/2)

FORM FOUR (4)

Time: 2½ Hours

INSTRUCTIONS TO CANDIDATES

a) *Write your name, and Index number in the spaces provided after the questions.*
b) *Sign and write the date of examination.*
c) *This paper consists of **Six** questions.*
d) *Answer **any five** questions in the spaces provided after the questions.*
e) *All questions carry equal marks*
f) ***Candidates should answer the questions in English.***
g) ***This paper consists of 3 printed pages, candidates should check to ascertain that all pages are printed as indicated and that no question is missing.***

FOR EXAMINER'S USE ONLY

Question	Maximum Score	Candidate's Score
1	20	
2	20	
3	20	
4	20	
5	20	
6	20	
Total Score	100	

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1.a) Explain **five** circumstances that can cause a business to succeed in their activities. **(10mks)**

b) Describe the procedure an insured must take when making an insurance claim. **(10mks)**

2.(a) Mzalendo Enterprises started business on 1st July 2010 with Shs. 250,000 consisting of:

Cash at bank Shs.200,000, Cash in Hand Shs. 30,000 and Furniture Shs. 20,000.

The following transactions took place during the month of July 2010.

3rd July 2010, Motor Van worth Shs. 85,000 and stock of Shs. 25,000 were bought on credit

4th July 2010, more stock worth shs.10,000 was bought by cash

10th July 2010, withdrew money from bank sh 50,000 for office use

15th July 2010, Sold stock at cost to a customer on credit for shs. 18,500

19th July 2010, received a cheque for the full settlement of a debt owed from the transaction of 15th July 2010

23rd July 2010, paid Shs. 65,000 by cheque for the motor van bought earlier on credit

29th July 2010, paid Shs. 20,000 cash for the stock bought on credit

Required:

Prepare the balance sheet of Mzalendo Enterprises as at 30th July 2010. **(10mks)**

(b) Explain **five** reasons why upward communication should be encouraged in an organization**.** **(10mks)**

3.(a) On 1st March 2020, Yawa had cash in hand shs. 7,800 and a bank overdraft of shs 23,400. During the month of the following transaction took place.

March 3: Cash sales sh. 6500 paid directly into the bank.

March 4: Bought goods for sh. 15,000 by cheque.

March 6: cash sales sh. 50,000

March 9: Received a cheque for sh. 18,000 from Amolo in full settlement of his account of sh. 20,000.

March 13: Paid insurance premiums sh. 16,000 in cash.

March 14: Paid Kimotho by cheque sh. 9,700 in full settlement of his debt of sh. 10,000.

March 17: Cash sales sh. 150,000 paid directly into the bank.

March 21: Withdrew shs. 30,000 from bank for office use.

March 23: Received a cheque of sh. 23,750 from Rotich after having deducted 5% cash discount.

March 25: Paid wages shs. 20,000 in cash.

March 26: The cheque received by Amolo was dishonoured.

March 30: Banked all cash except sh. 3,000.

Required: Prepare a three-column cashbook. **(10mks)**

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(b) Explain five challenges that may be experienced by a country whose population is made up of a large proportion of young people. **(10mks)**

4.(a) Explain five circumstances under which personal selling may be appropriate as a method of product promotion. **(10mks)**

(b) Explain five factors that may hinder entrepreneurial activities in a country. **(10mks)**

5.a.) As business expands, it experiences economies of scale such as division of labour and specialization. Explain Five benefit of the economy of scale mentioned to the business **(10mks)**

b.) Kamau operates a large hardware business in a town in Kenya. A part from motor vehicle insurance policies, highlight giving reasons, five insurance policies that may be beneficial for this business. **(10mks)**

6.a) Explain **five** advantages of M-pesa **(10mks)**

b)Using a well labeled diagram, illustrate, the effect of reduced cost of production on equilibrium price and output **(10mks)**

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EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

NAME: ……..…

SHOOOL: ……

ADM NO: ……..…… SIGN: ……..… DATE: ……..……..

FORM 4

CHEMISTRY PAPER 1 (233/1)

Time: 2 Hours

INSTRUCTIONS TO CANDIDATES

- *Write your **Name**, **Index Number** and **School** in the spaces provided above.*
- *Answer **all** the questions in the spaces provided after each question.*
- ***KNEC** Mathematical tables and **silent non-programmable** electronic calculators may be used.*
- ***ALL** working **must** be clearly shown where necessary.*
- *Candidate should **check** the question paper to ascertain that **all** the pages are printed and that no questions are missing.*
- *Candidates* should answer the questions in **English**.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAX SCORE	CANDIDATE'S SCORE
1 – 29	80	

1 (a) Give the name of the first member of the alkyne homologous series **(1mk)**

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(b) Describe a chemical test that can be used to distinguish ethanol from ethanoic acid. **(2mks)**

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2 (a) Name the raw material from which aluminium is extracted **(lmk)**

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(b) Give a reason why aluminium is extracted using electrolysis. **(1mk)**

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(c) Give **one** use of aluminium metal. **(lmk)**

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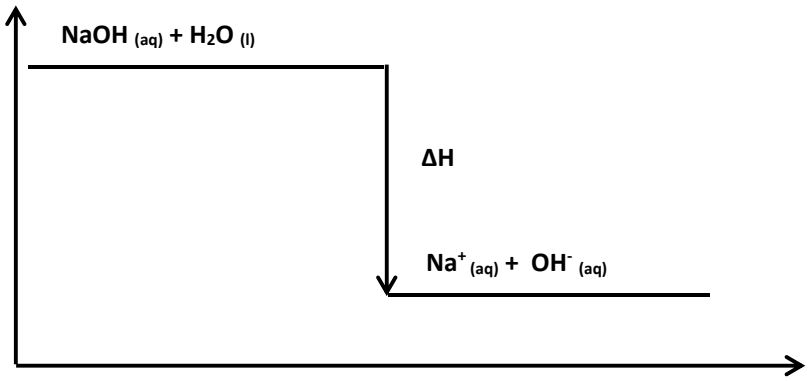
3 (a) What is meant by lattice energy? **(1mk)**

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(b) Study the energy level diagram below and answer the question that follows:



What type of reaction is represented by the diagram? **(1mk)**

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4 (a) Sketch a graphical representation of Boyles law on the axes below. **(1mk)**



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(b) A gas occupies 400 cm^3 at 25°C and 100,000 Pa. What will be its volume at 27°C and 101325 Pa? **(2mks)**

5 (a) What is half- life? **(1mk)**

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(b) The half-life of protactinium - 234 is 1.17 minutes. Determine the mass that decays in 5.85 minutes starting with 100 g of the sample. **(2mks)**

6 State **two** disadvantages of hard water. **(2mks)**

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7 Hydrogen chloride gas can be prepared by reacting sodium chloride with an acid.

(a) Name the acid. **(1mk)**

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(b) Write an equation for the reaction between sodium chloride and the acid. **(1mk)**

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(c) State **two** uses of hydrogen chloride. **(1mk)**

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8 When solid **B** was heated strongly, it gave off water and a solid residue. When water was added to the solid residue, the original solid **B**, was formed.

(a) What name is given to the process described? **(1mk)**

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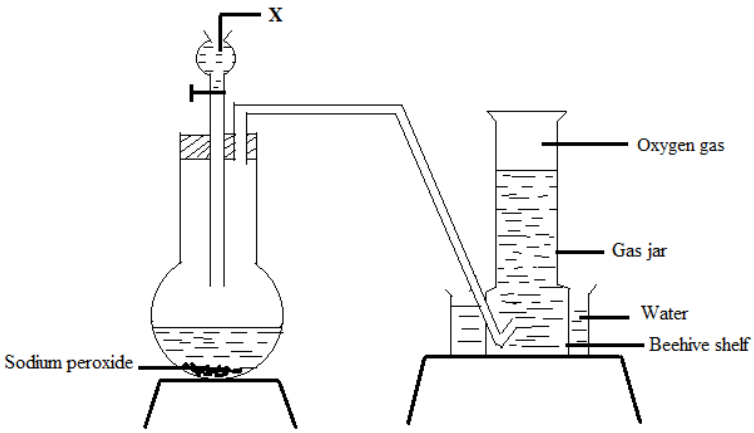
(b) Give **one** example of solid **A**. **(1mk)**

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9 The set up below can be used to prepare oxygen gas. Study it and answer the questions that follow.



(a) Identify **X**. **(1mk)**

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(b) Write the equation for the reaction which occurs in the flask. **(1mk)**

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(c) State **one** use of oxygen other than in welding **(1mk)**

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10 The atomic number of an element, **M** is 13.

(a) Write the electronic configuration of the ion $\mathbf{M^{3+}}$. **(1mk)**

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(b) Write the formula of the chloride of **M**. **(1mk)**

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(c) State the structure of the compound formed in (b) above **(1mk)**

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11 Concentrated sodium chloride was electrolysed using graphite electrodes. Name the product formed at the anode and give a reason for your answer. **(2mks)**

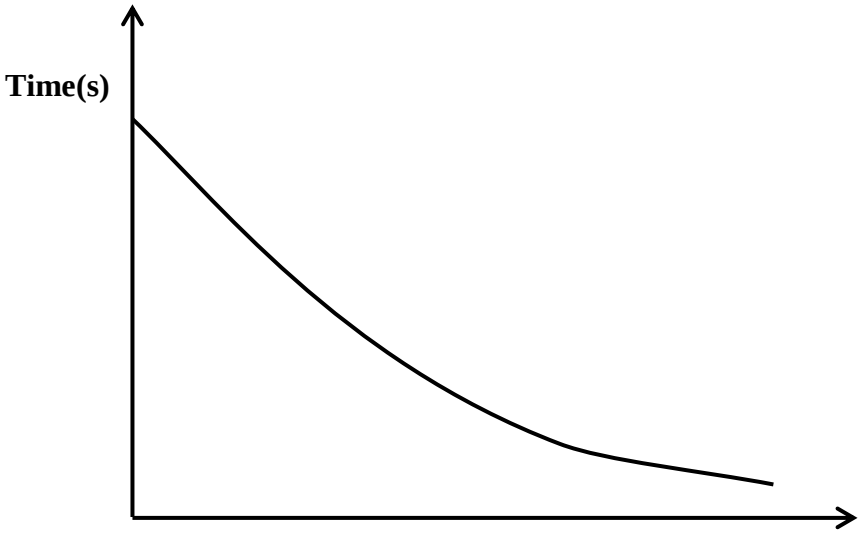
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12 The curve shown below shows the variation of time against temperature for the reaction between sodium thiosulphate and hydrochloric acid.



(a) Explain the shape of the curve. **(2mks)**

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(b) Other than temperature name **one** factor that affects the rate of reaction**.** **(1mk)**

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13 (a) Dry ammonia was passed over heated copper (II) oxide in a combustion tube.

(i) State the observations made in the tube **(1mk)**

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(ii) Write an equation for the reaction that occurs. **(1mk)**

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(b) What products would be formed if red hot platinum is introduced into a mixture of ammonia and oxygen? **(1mk)**

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14 The table below shows behaviour of metals P, Q, R and S. Study it and answer the questions that follow:

Metal	Appearance on exposure to air	Reaction with water	Reaction with dilute sulphuric (VI) acid
P	Remains the same	Doesn't react	Reacts moderately
Q	Remains the same	No reaction	Doesn't react
R	Slowly tarnishes	Slow	Vigorous
S	Slowly turns white	Vigorous	Violent

(a) Arrange the metals in the order of reactivity starting with the most reactive**.** **(2mks)**

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(b) Name a metal which is likely to be **R** **(1mk)**

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15 Given the following substances: sodium carbonate, orange juice and sodium bromide.

(a) Name **one** commercial indicator that can be used to show whether sodium carbonate, orange juice and sodium bromide are acidic, basic or neutral. **(1mk)**

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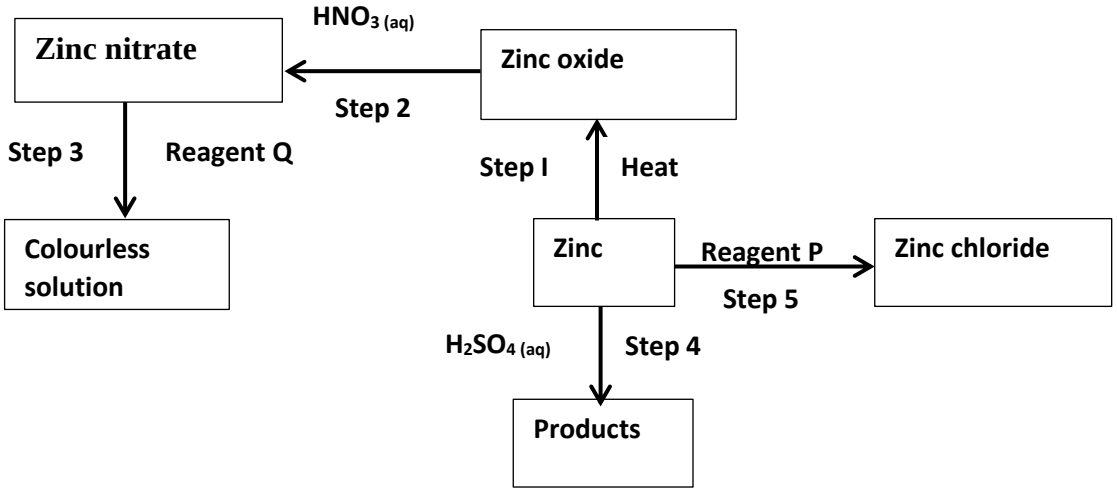
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(b) Classify the substances in 15 (a) above as acids, bases or neutral. **(2mks)**

Acid	
Base	
Neutral	

16 The flow chart below shows various reactions of zinc metal. Study it and answer the questions that follow:



(a)(i) Other than water, name another reagent that could be **Q**. **(1mk)**

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(ii) Write the formula of reagent **P**. **(1mk)**

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(b) Write an equation for the reaction in **step 4**. **(1mk)**

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17 (a) One of the allotropes of sulphur is monoclinic sulphur, name the other allotrope **(1mk)**

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(b) Concentrated sulphuric (VI) acid reacts with copper and prapanol. State the property of the acid shown in each case. **(2mks)**

Copper ……..……..….

Propanol ……

18 Study the standard electrode potentials in the table below and answer the questions that follow.

Half -reaction	**E^{θ}(V)**
$Ag^{+}(aq) + e \longrightarrow Ag(s)$	+ 0.80
$Cu^{2+}(aq) + 2e \longrightarrow Cu(s)$	+ 0.34
$Mg^{2+}(aq) + 2e \longrightarrow Mg(s)$	- 2.38
$Ca^{2+}(aq) + 2e \longrightarrow Ca(s)$	- 2.87

(a) Which of the metals is the strongest oxidising agent? **(1mk)**

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(b) What observations will be made if a copper coin was dropped into an aqueous solution of calcium nitrate? Explain. **(2mks)**

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19 Calculate the number of sulphate ions present in 22.5 cm^3 of 2 M aluminium sulphate solution. ($L=6.0 \times 10^{23}$) **(3mks)**

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20 (a) A crystal of iodine, heated gently in a test tube gave off a purple vapour.

(i) Write the formula of the substance responsible for the purple vapour. **(1mk)**

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(b) What type of bond is broken when the iodine crystal is heated gently? **(1mk)**

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(c) State **one** use of chlorine. **(1mk)**

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21 Describe how samples of barium (II) sulphate, ammonium chloride and common salt can be obtained from a mixture of the three. **(3mks)**

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22 (a) Give the name of the process which takes places place when maize flour is converted to ethanol **(1mk)**

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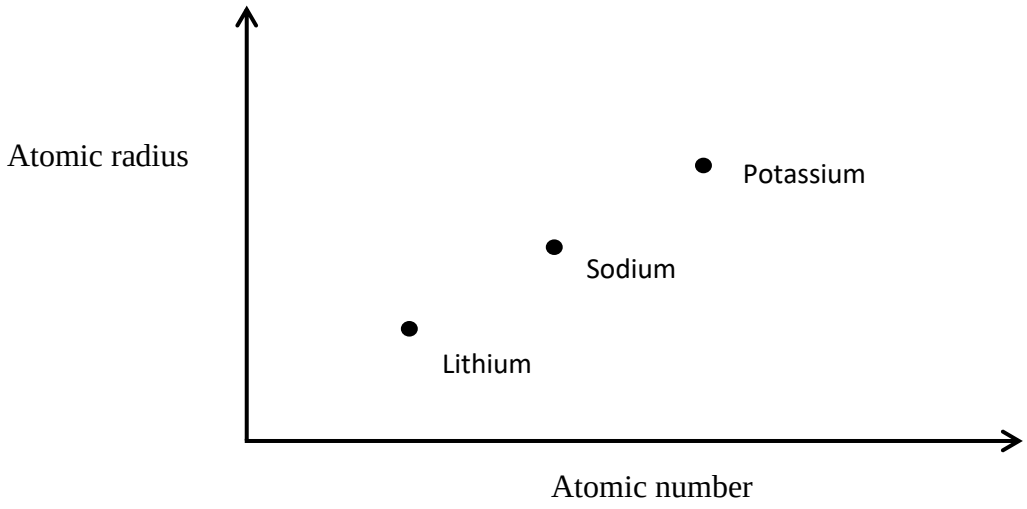
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(b) Write the formula of the compound formed when ethanol reacts with sodium metal. **(1mk)**

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23 (a) Study the graph below which shows variation of atomic radius with atomic number



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State and explain the trend shown in the graph above. **(2mks)**

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(b) State **one** use of sodium. **(lmk)**

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24 A farmer intended to plant blueberries in her farm. She first tested the pH of the soil and found it to be 10.0. In order to obtain high yield, what advice would be given to the farmer if blueberries do well in acidic solution? **(2mks)**

25 Starting with calcium nitrate solution, describe how a pure dry sample of calcium carbonate can be prepared in the laboratory. **(3mks)**

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26 A hydrocarbon contains 81.82% of carbon. If the molar mass of the hydrocarbon is 44, determine the molecular formula of the hydrocarbon. (C = 12.0; H = 1.0) **(3mks)**

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27 (a) Describe how Carbon (II) Oxide can be distinguished from Carbon (IV) Oxide using calcium hydroxide solution. **(2mks)**

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(b) What is the role of carbon (IV) oxide in fire extinguishing? **(lmk)**

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28 (a) Name **one** source of alkanes. **(1mk)**

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(b) Methane gas was reacted with one mole of chlorine gas. State the condition necessary for this reaction. **(1mk)**

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29 (a) What is meant by heating value of a fuel? **(1mk)**

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(b) Other than heating value, name **one** factor to be considered when choosing a fuel. **(1mk)**

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EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

NAME: ……..……

SHOOOL: ……..……

ADM NO: ……..……. SIGN: ……..… DATE: ……..……..

FORM 4

CHEMISTRY PAPER 2 (233/2)

Time: 2 Hours

Instruction to the candidates

a) Write your Name and Index number, Admission Number and Class in the spaces provided at the top of this page.

b) Answer all the questions in the spaces in the spaces provided in this paper using English.

c) KNEC Mathematical tables and silent electronic calculators may be used.

d) All working MUST be clearly shown where necessary

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Questions	Maximum score	Candidate's Score
1	10	
2	14	
3	14	
4	10	
5	11	
6	11	
7	10	
	80	

1. **(a)** Define nuclear fission. **(1mk)**

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(b) State two similarities between nuclear fission and nuclear fusion? **(2mks)**

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(c) The following table shows the activity of a sample of protactinium ($^{234}_{91}Pa$), a radioactive element, measured at regular intervals.

Time (sec)	10	30	50	70	90	110	130	150	170	190
Activity(c/s)	33	29	23	17	14	12	10	9	8	6

(i) Plot a graph of activity against time**.** **(3mks)**

(PROVIDE A GRAPH PAPER)

(ii) From the graph:

(I) The initial activity of the element**.** **(1mk)**

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(II) Determine the half-life of the nuclide**.** **(1mk)**

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(d) State two dangers associated with radioactivity**.** **(2mks)**

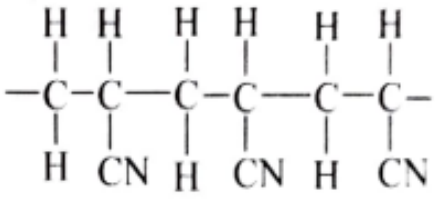
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2. (a) Acrylan and orlon are names of fibers which are made of the polymer.



(i) How many repeat units are shown in this structure? **(1mk)**

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(ii) Draw a structural formula of the monomer unit from which the polymer is made. **(1mk)**

(iii) State two disadvantages of using the above synthetic fiber. **(2mks)**

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(b) Detergents contain additives that enhance their cleaning performance. Name two such additives **(2mks)**

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(c) Calculate the mass of ethanol that can be made from 56g of ethene. **(2mks)**

(d) An organic **compound P** is found on analysis to have the empirical formula $\mathbf{C_6H_{14}O}$. Compound P is slightly soluble in water. On oxidation compound P is converted into a **compound Q** of empirical formula $\mathbf{C_3H_6O}$ and relative molecular mass 116. Both compound P and Q react with sodium metal liberating hydrogen gas.

(i) To what class of compounds does compound P belong? **(1mk)**

……

……

(ii) Draw the displayed structural formula of P. **(1mk)**

(iii) Deduce the molecular formula of Q and draw its displayed structural formula. **(2mks)**

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(iv) What other test would you carry out on Q to confirm the presence of the functional group you have indicated? **(2mks)**

3. (a) During the electrolysis magnesium sulphate a current of 2 amperes was passed through the solution for 4 hours. Calculate the volume of the gas produced at the anode. (1 faraday 96,500 coulombs and volume of a gas at room temperature is 24,000cm^3**).** **(2mks)**

(b) Table gives standard reduction potentials for some half cells.

Half-cell	Half-cell equation	E^{θ} /V
I	$Cr^{3+}(aq) + e^- \rightarrow Cr^{2+}(aq)$	-0.41
II	$Cd^{2+}(aq) + 2e^- \rightarrow Cd(s)$	-0.40
III	$Na^+(aq) + e^- \rightarrow Na(s)$	-2.71
IV	$Cu^{2+}(aq) + 2e^- \rightarrow Cu(s)$	+0.34
V	$Pb^{2+}(aq) + 2e^- \rightarrow Pb(s)$	-0.13
VI	$Br_2(aq) + 2e^- \rightarrow 2Br^-(aq)$	+1.07
VII	$2H^+(aq) + 2e^- \rightarrow H_2(g)$	0.00
VIII	$Fe^{2+}(aq) + 2e^- \rightarrow Fe(s)$	-0.44V
IX	$O_2(g) + 2H_2O(l) + 4e^- \rightarrow 4OH^-(aq)$	+0.40V
X	$H_2O_2(aq) + 2H^+(aq) + 2e^- \rightarrow 2H_2O(l)$	+1.23V

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(i) Identify: **(1mk)**

I.The strongest oxidizing agent.

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…...……

II.The strongest reducing agent.

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…...……

(ii) Construct an electrochemical cell from half-cells **V** and **VI**. **(3mks)**

(iii) Write the equation and calculate the electrode potential for the electrochemical cell constructed from half-cells **V** and **VI**. **(2mks)**

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(iv) Explain why it is not advisable to use aqueous sodium sulphate as the salt bridge in the electrochemical cell formed between half-cells **V** and **VI.** **(1mk)**

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(v) Write the cell diagram for an electrochemical cell made using half-cells **V** and **VI**. **(1mk)**

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…...……

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(vi) Write an equation to show how rusting occurs. **(2mks)**

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(vii) Give two reasons why electroplating is necessary. **(2mks)**

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4. Below is a periodic table grid study it and answer the questions. (*The letters does not represent the actual symbols of the elements*)

								B
C	D		E				F	
	G						H	
I								

(a) Which element will require the least amount of energy to remove one of the outermost electrons. **(1mk)**

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……

(b) Select the most reactive metal. **(1mk)**

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(c) What name is given to the family of elements to which **elements D** and **G** belong? **(1mk)**

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(d) An **element A** has atomic number 9. Indicate the position of **A** on the grid. **(1mk)**

(e) Explain why the atomic radius of **D** is smaller than that of **C**. **(1mk)**

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(f) Explain why the atomic radius of **A** is smaller than its ionic radius. **(2mks)**

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(g) Element **C** combines with oxygen to from an oxide. Using dots (•) and crosses(**x**) to represent the outermost electrons, show how the two elements combine. **(1mk)**

(h) Explain why **chloride of E** has higher melting point than **chloride of D**. **(2mks)**

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5. (a) Describe how you can determine change in mass when magnesium is heated. **(3mks)**

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(b) The table below shows the tests that were carried out on five portions of a compound and the results obtained. Study it and answer the questions that follow.

	Test	Observation
1	Addition of few drops of sodium hydroxide to the first portion until in excess.	White precipitate soluble in excess.
2	Addition of few drops of aqueous potassium iodide to the second portion	No yellow precipitate is formed.
3	Addition of few drops of acidified barium nitrate to the third portion.	White precipitate formed.
4	Addition of few drops of Lead (II) nitrate to the fourth portion.	White precipitate formed.
5	Addition of few drops of dilute nitric (V) acid to the fifth portion.	Effervescence of a colorless gas.

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(i) Identify the ions likely present in; **(2mks)**

I. **Step 2**

……

II. **Step 5**

……

(ii) Write an ionic equation for the reaction in the fifth portion. **(1mk)**

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(iii) Dilute nitric (V) acid was added to a solid which is an alloy of copper. The resultant mixture was then filtered. To the filtrate, few drops of sodium hydroxide solution was added till in excess.

I.Sate any two observations made when dilute nitric (V) acid is added to the alloy. **(2mks)**

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II. Name the other metal present in the alloy**.** **(1mk)**

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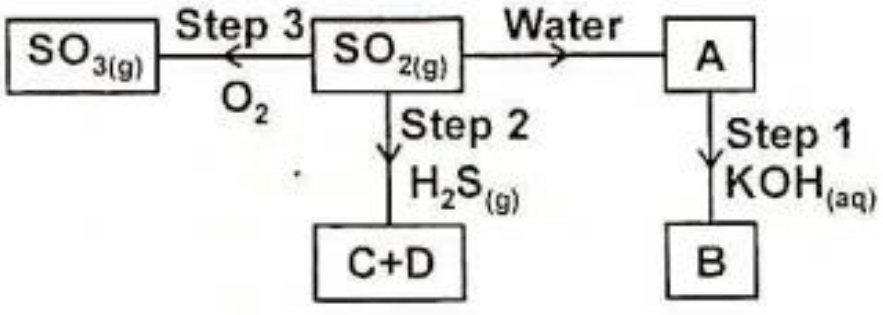
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III. Write an ion equation for the reaction that took place when few and excess sodium hydroxide solution is added. **(2mks)**

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6. (a) Study the flow chart below and answer the questions that follow.



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(i) Name a suitable method of gas collection that can used to collect Sulphur (VI) oxide gas in the laboratory**.** **(1mk)**

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(ii) Name substances A, B, C and D**.** **(2mks)**

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(iii) State the property of Sulphur (IV) oxide exhibited in step 2. **(1mk)**

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(b) (i) Explain the observations made when burning magnesium is lowered into a gas jar containing carbon (IV) oxide. **(3mks)**

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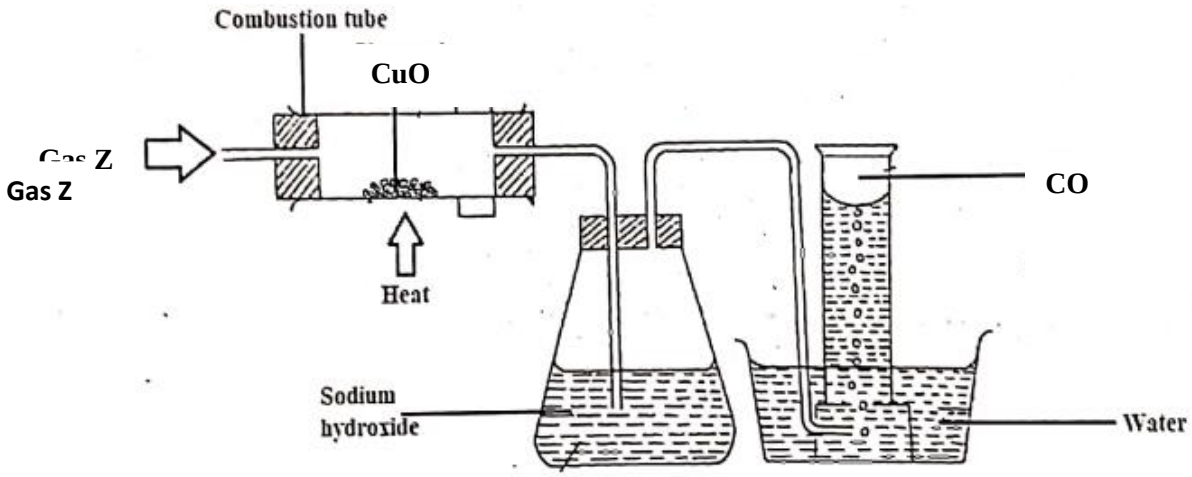
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(ii) Study the diagram below and answer the questions that follows.



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I. Name gas Z. **(1mk)**

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II. Write an equation for the reaction taking place in the combustion tube. **(1mk)**

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III. State and explain the observations made in the combustion tube. **(1mk)**

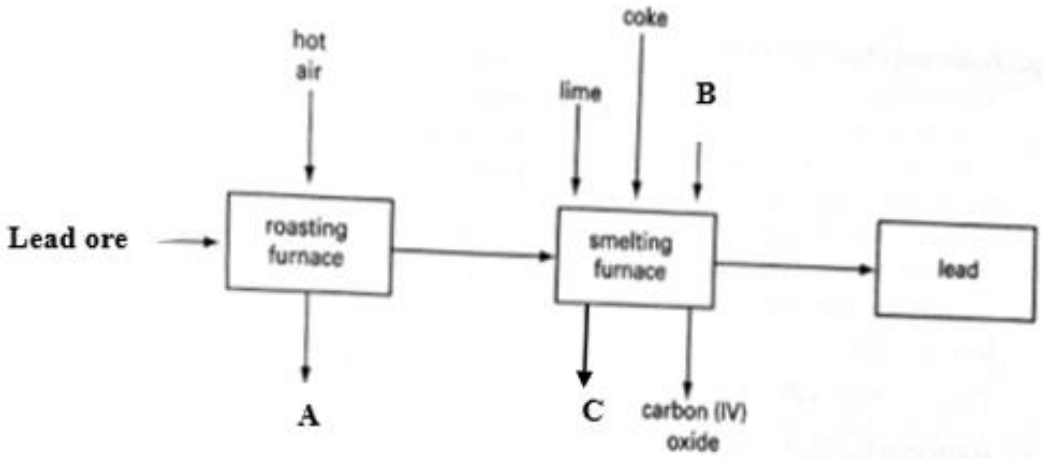
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7. The flow chart in the figure below represents some stages in the extraction of lead metal. Study it and answer the questions that follow.



(a) Identify:

(i) The lead ore. **(1mk)**

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(ii) Substance A, B and C. **(3mks)**

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(b) Write an equation for the reaction that forms **substance C**. **(1mk)**

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(c) Name an impurity resent in the ore. **(1mk)**

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(d) State the process by which the ore is concentrated. **(1mk)**

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(e) Write an equation for the reaction which occurs in the roasting chamber. **(1mk)**

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(f) State any one use of lead. **(1mk)**

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(g) Give one reason why the extraction of lead causes pollution to the environment. **(1mk)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……. SIGN: ……..……..… DATE: ……..……..

FORM 4

CHEMISTRY PAPER 3 (233/3)

TIME: 2¼ HOURS

Instruction to the candidates

a) Write your Name and Index Number, Admission Number and Class in the spaces provided at the top of this page.
b) Answer all the questions in the spaces in the spaces provided in this paper using English.
c) KNEC Mathematical tables and silent electronic calculators may be used.
d) All working MUST be clearly shown where necessary.

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

1. You are provided with:

- **Solution A,** potassium iodate solution.
- **Solution B**, acidified sodium hydrogen sulphite solution.
- **Solution C,** starch indicator.
- Stop watch.
- Distilled water.

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You are required to find out the **effect** of **concentration of potassium iodate**, **A** on the **rate of reaction** with acidified sodium hydrogen sulphite, **B**.

NB: *The end point of reaction of potassium iodate with acidified sodium hydrogen sulphite is indicated by the formation of a blue colored complex using starch indicator.*

Procedure 1:

Step 1

- **Label** 5 test tubes as 1, 2, 3, 4 and 5 and place them in a test tube rack.

Step 2

- Using a 10 cm^3 measuring cylinder add **5 cm^3** of acidified sodium hydrogen sulphite, **solution B** to **each** of the test tube in the rack.

Step 3

- Using a burette pour **10 cm^3** of potassium iodate solution to the **first** test tube.

Step 4

- Add **8 cm^3** of potassium iodate solution to the **second** test tube, **6 cm^3** to the **third** test tube, **4 cm^3** to the **fourth** test tube and **2 cm^3** to the **fifth** test tube.

Step 5

- Using a 10 cm^3 measuring cylinder add **2 cm^3** of distilled water into the **second** test tube, **4 cm^3** to the **third** test tube, **6 cm^3** to the **fourth** test tube and **8 cm^3** to the **fifth** test tube.

Step 6

- Using a 10 cm^3 measuring cylinder add 10 **cm^3** of **solution B** into a 100 cm^3 beaker, add 3 drops of **solution C** and shake well. To this mixture add quickly contents in the first test tube and start a stopwatch immediately. Shake the mixture and note the time taken for the blue color to appear. Record the time taken in **table I.**

Step 7

- **Rinse** the beaker and **repeat** procedure in **step 6** using the other solutions prepared in **step 4** above and complete the **table I**.

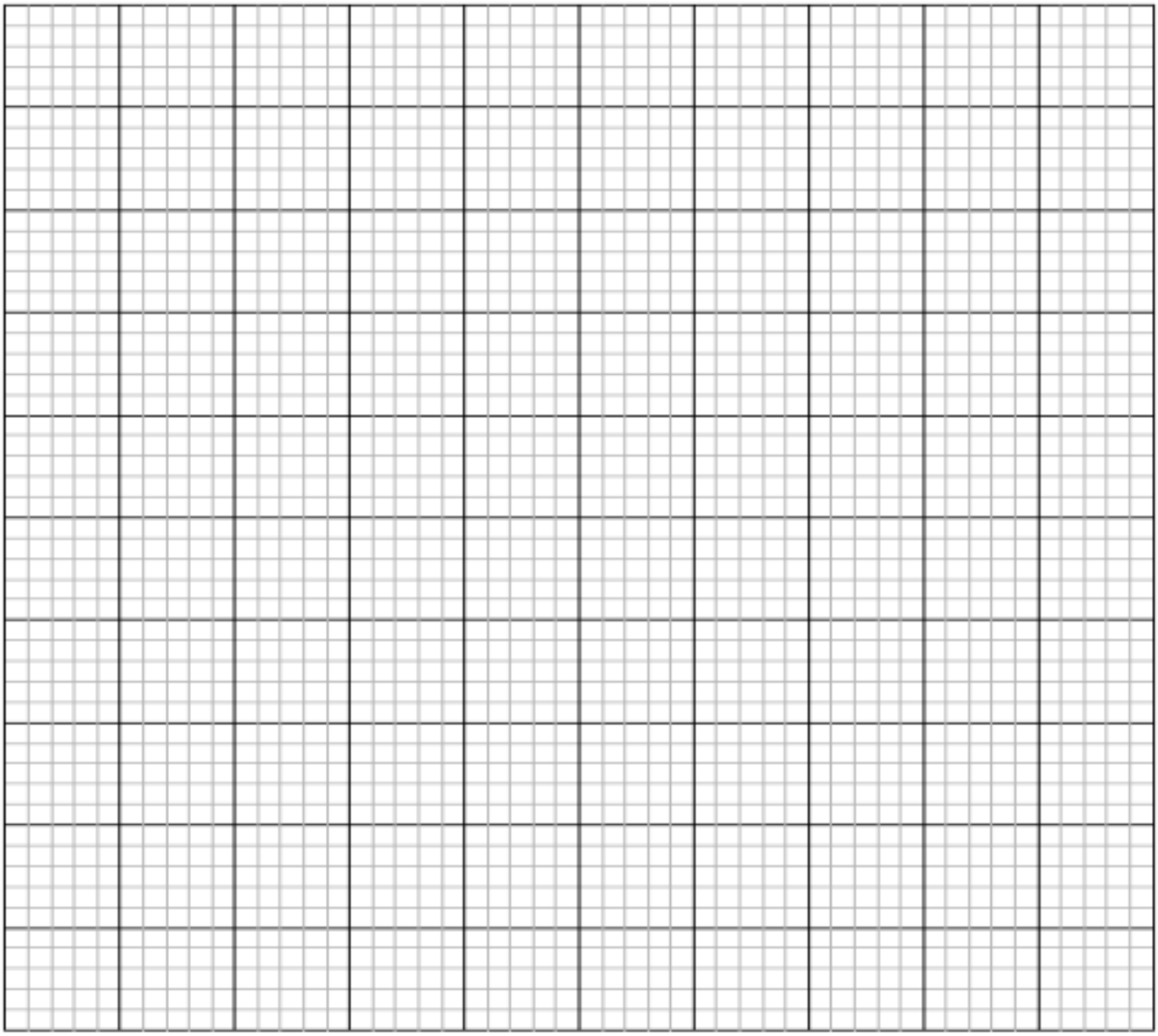
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Table I

Experiment	Volume of Sodium hydrogen sulphite ($NaHSO_3$) used (cm^3)	Volume of distilled water used (cm^3)	Volume of potassium iodate (KIO_3) used in (cm^3)	Time taken to change color (secs)
1	5	0	10	
2	5	2	8	
3	5	4	6	
4	5	6	4	
5	5	8	2	

(3mks)

(a) On the grid below plot a graph of time taken for the color change against volume of aqueous potassium iodate used. **(3mks)**



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(b) (i) From your graph determine the time taken for the blue colour to appear if 7cm^3 of aqueous potassium iodate was used**.** **(1mk)**

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…..……

(ii) Calculate the volume of distilled water required if 7 cm^3 of aqueous potassium iodate was used. **(1mk)**

(c) On the graph sketch the graph that could be expected if the above experiments were done at a higher temperature. Explain**.** **(1mk)**

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(d) How does the volume of potassium iodate **solution A**, affect its rate of reaction with acidified sodium hydrogen sulphite **B**? Explain your answer**.** **(2mks)**

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2. You are provided with:

- **Solution D**, which is 0.05M acidified potassium manganate (VII) solution ($KMnO_4$).
- **Solution E**, containing 5.0g/l of a dibasic acid, $H_2M.2H_2O$

You are required to determine the **concentration** of dibasic acid $H_2M.2H_2O$, **solution E** and then the **formula mass** of **M**.

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Procedure II

1. Fill the burette with **solution D**.
2. Using a clean pipette, place 25 cm^3 of **solution E** into a clean conical flask. Heat this solution to about 70^0C.
3. Titrate using **solution D** until a permanent pink colour just appears. *Shake* thoroughly during titration.
4. Record the reading in **table II** below.
5. Repeat the titration one more time to complete the table below.

(a) Complete the **table II** below.

Table II

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

(3mks)

(b) Determine the average volume of **solution D** used. **(1mk)**

(c) Calculate:

(i) The number of **moles** of manganate (VII) ions in the average volume of solution B used above. **(1mk)**

(ii) Given that 2 moles of manganate (VII) ions react with 5 moles of dibasic acid $H_2M.2H_2O$. Calculate the number of moles of the dibasic acid $H_2M.2H_2O$ in the 25 cm^3 of **solution E**. **(1mk)**

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(iii) The **concentration** of **solution E** in moles per litre**.** **(1mk)**

(iv) Calculate the formula mass of **M** in the dibasic acid $H_2M.2H_2O$. (H = 1, O=16). **(2mks)**

3.(a) You **are provided** with **solid F**. **Carry out** the tests below. Write **your observations** and **inferences in the spaces** provided.

(i) Place about one third of **solid F** in a clean dry test-tube and heat it strongly.

Observations	Inference
(1mk)	**(1mk)**

(ii) Place the remaining **solid F** in a boiling tube. Add about 10 cm^3 of distilled water. Shake the mixture thoroughly for about one minute. Filter and divide the filtrate into four portions.

Observations	Inference
(1mk)	**(1mk)**

I. To the first portion, add 2 drops of **phenolphthalein indicator**.

Observations	Inference
(1mk)	**(1mk)**

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II. To the second portion, add 2 cm^3 of **dilute sulphuric (VI) acid.**

Observations	Inference
(1mk)	**(1mk)**

III. To the third portion, add 3 cm^3 of **aqueous potassium iodide**.

Observations	Inference
(1mk)	**(1mk)**

IV. To the fourth portion, add **dilute ammonia solution** drop wise until excess

Observations	Inference
(1mk)	**(1mk)**

b) You are provided with **solid G**. Carry out the following tests and record your observations and inferences in the spaces provided.

i) Using a metallic spatula, take one third of **solid G** and **ignite** it using a Bunsen burner flame.

Observations	Inference
(1mk)	**(1mk)**

ii) Place the remaining **solid G** in a boiling tube. Add about 10cm^3 **distilled water**. Shake the mixture well. Divide the mixture into two portions.

Observations	Inference
(1mk)	**(1mk)**

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I. To about 4cm^3 of the solution, add **solid sodium carbonate** and shake well.

Observations	Inference
(1mk)	**(1mk)**

II. To about 4 cm^3 of the solution, add 3 drops of **acidified potassium dichromate (VI)**.

Warm the mixture.

Observations	Inference
(1mk)	**(1mk)**

LAST PRINTED PAGE

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……..…. SIGN: ……..……..… DATE: ……

COMPUTER STUDIES

(QUESTION PAPER I)

FORM FOUR

INSTRUCTION TO CANDIDATES

- Write your name and index number in the spaces provided above
- This paper consists of **Two** sections **A** and **B**
- Answer **ALL** questions in section **A**
- Answer question16 and any other **THREE** questions from section **B**
- All answers should be written in the spaces provided on the question paper

FOR EXAMINER'S USE ONLY

SECTION	QUSTIONS	CANDIDATE'S SCORE
A	1 -15	
	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

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SECTION A (40 MARKS)
Answer ALL the questions in SECTION

1. Mention two devices that can connected to the computer via HDMI cable **(2mks)**

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2. State three ways in which ICT can be used to enhance customer service delivery in a supermarket **(3mks)**

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3. Describe two roles of a Web designer **(2mks)**

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4. Mr. Kamau is a teacher at Chianda High School used Ms-Excel to process the marks obtained by his student during the term. The table below shows the details entered in the Ms-Excel worksheet

	A	B	C	D	E	F	G	H	I
1	**Name**	**CAT 1**	**CAT2**	**CAT TOTAL**	**EXAM**	**TOTAL MARKS**	**POSITION**	**GRADE**	**REMARK**
2	**Mark Jama**	**14**	**06**	**20**	**56**	76	**1**		
3	**Caleb Wekeza**	**13**	**08**	**21**	**34**	**55**	**6**		
4	**Kanini Mulue**	**10**	**04**	**14**	**59**	**73**	**3**		
5	**Justine Melanie**	**11**	**07**	**18**	**57**	**75**	**2**		
6	**Julia Wahome**	**06**	**09**	**15**	**48**	**63**	**5**		
7	**Austin Kilome**	**08**	**07**	**15**	**50**	**65**	**4**		

Hints

CAT1is out 15, CAT2 is out 15 and Exam is out 70

(a) Give the formula used to calculate the Total Marks for Julia Wahome **(1mk)**

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(b) Write a function that give each student his position in class based on the performance **(2mks)**

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(c) Write a logical function that will display the following remarks in column I **(2mks)**

Total Marks	Remark
0 - 49	Fail
50 - 59	Above Average
60 - 69	Fair
70 - 79	Good
80 - 100	Excellent

5. Give two reasons to justify why SATA cables are used in modern computers to connect the hard disk to the motherboard **(2mks)**

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6. Give three file systems supported by windows operating system **(3mks)**

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7. Describe the use of the following keys found on a standard keyboard **(2mks)**

(a) Esc

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(b) Prt sc

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8. Explain the following terms with references to algorithm

(a) Definiteness **(2mks)**

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(b) Finiteness **(2mks)**

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9. Mention two ICT related courses offered in Kenyan universities at undergraduate level **(2mks)**

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10. What is flaming **(2mks)**

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11. A computer operator was working with a computer using windows operating system. After sometimes he started experiencing the following problems

- Abnormal restarting
- Computer failing to load the operating system
- Computer hangs
- Computer displaying Fatal Exception error on the screen

State three possible causes of the problems mentioned above **(3mks)**

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12. Identify two limitations of traditional approach to system development **(2mks)**

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13. Use flowchart to demonstrate how IF THEN and REPEAT..... UNTIL can be implemented **(2mks)**

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14. State three functions of Repeater stations in data communication **(3mks)**

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15. Describe three layout guides available in DTP that assist a user to place an object in a preferred position **(3mks)**

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SECTION B (60 MARKS)

16.

(a) State three features of a compiler **(3mks)**

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(b) When writing a computer program programmers are always advised to use approaches and techniques that makes the program easy to follow and maintain. List four ways in which a programmer can make program code easy to follow **(4mks)**

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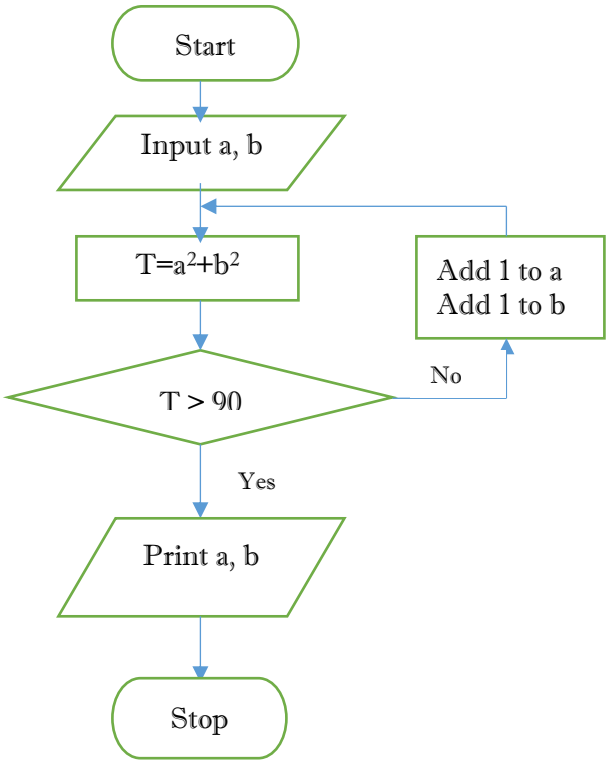
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(c) Study the flowchart below and use it to answer the questions that follow



(i) Given that the user keyed in 3 as the value of a and 1 as the value of b get the final output of the flowchart **(3mks)**

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(ii) Use a pseudo code to represent the flowchart in (c) **(5mks)**

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17.

(a) Briefly describe the three main coding schemes **(3mks)**

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(b) Convert the following numbers to binary number

(i) B2.AAH **(3mks)**

(ii) $\frac{13}{64}$ base 10 **(3mks)**

(c) The table below was created using Ms-Access use it to answer the questions that follow

Table Name: Product

Product ID	Product Name	Unit Cost	Quantity	Total
P00101	Milk	120	34	4080
P00201	Bread	100	56	5600
P00301	Beans	150	45	6750

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(i) State the most appropriate data type for Product ID and Total **(2mks)**

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(ii) Suggest how you would set the input mask for the Product Name so that the data entered in that field appear the way they are in the table **(2mks)**

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(iii) Represent the dynaset shown below in a SQL form given that the table Name is product **(2mks)**

Product ID	Product Name	Unit Cost	Quantity	Total
P00101	Milk	120	34	4080

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18.

(a) Describe four services available in the internet that support communication only **(4mks)**

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(b) Modern computing have embraced the use of drop box, google drive and OneDrive. These platforms are hosted by the internet and many computer users prefer backing up their data using these facilities. Give three reasons to justify this phenomenon **(3mks)**

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(c) Janetitle a computer student from Maranda High school launched the browser to access the internet , the browser displayed an error message Server Not Found on the screen this didn't allow Janetitle to access the internet. State three possible causes of this anomaly **(3mks)**

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(d) Briefly describe the following features of word processor **(2mks)**

(i) Subscript

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(ii) Drop cap

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(e) State two arithmetic operation that can be performed on a row of a numeric data in a word processor table **(1mk)**

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(f) In each case of (e) above give the expression used **(2mks)**

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19.

(a) Enumerate four breakthrough in health care instigated by ICT **(4mks)**

(b) Mention four application areas of Artificial Intelligence **(3marks)**

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(c) List three scanning devices available at Electronic Point Sale Terminal **(3mks)**

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(d) Describe two ways of preventing eavesdropping **(2mks)**

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(e) System failure is considered as threat to data security. Describe three measures an organization should put in place to guard against system failure **(3mks)**

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20.

(a) Identify modes of data communication represented in (i), (ii), (iii) and (iv) below **(4mks)**

(i) Principal Addressing students in assembly using public address system

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(ii) WhatsApp chat

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(iii) Phone conversation

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(iv) Walkie talkie conversation

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(b) List three challenges experienced by computer networks that are set up using twisted pair cables **(3mks)**

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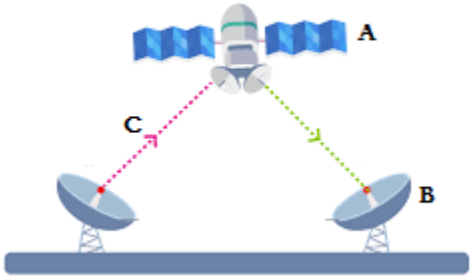
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(c) Study the diagram below and use it to answer the questions that follow



(i) Identify the parts labelled A, B and C in the diagram above **(3mks)**

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(ii) State function of the part labelled A **(2mks)**

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(d) Name any three components of virtual reality **(3mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……. SIGN: ……..……..… DATE: ……..……..

COMPUTER STUDIES

(QUESTION PAPER II)

FORM FOUR

TIME: 2 1/2 HOURS

INSTRUCTIONS TO CANDIDATES

a) Indicate your name and index number at the right hand corner of each printout
b) Write your name and index number on the CD/removable storage medium provided
c) Write the name and version of the software used for each question attempted in the answer sheet provided
d) Answer all the questions, All questions carry equal marks
e) Passwords should not be used while saving in the CD/removable storage Medium
f) Marked printout of the answers on the sheet
g) Hand in all the printouts and the CD/removable storage medium used

1. The table below shows list of students admitted to Nyambaria High School under different sponsors.

(a) Open a database program and create a database named **NHS**. **(1mk)**

(b) Create three tables named **Students**, **Sponsor** and **Fees.** **(3mks)**

(c) Using database file created in (a) above use the following field properties. **(6mks)**

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Student_Table

Field name	Data types and properties
School-Code	Default value = 427
AdmNo	Text (Size = 4, Required = Yes)
Student Name	Text (Size = 16)
Date of Birth	Date and time (Size = 10)
Amount paid	Text (Size = 4, Required = Yes)
SponsorID	LookUp -sponsor table
BankID	Text

Sponsor_Table

Field name	Data types and properties
SponsorID	Text (Size = 4, Required = Yes)
Sponsor Name	Text (Size = 16)

Amount_Table

Field name	Data types and properties
BankID	Text
BankName	Text (Size = 10)
Amount Per Student	Number (Size = 8, Decimal Place = 2)
Mode of payment	Text (Size = 12)

(i) Create the relationship between the tables. **(2mks)**

(ii) Enforce referential integrity between the tables. **(1mk)**

(iii) Create the three forms **StudentForm, SponsorForm** and **AmountForm**. **(3mks)**

(iv) Enter the following data in their respective tables using the respective **forms**. **(8mks)**

Table 1: SponsorTable

SponsorID	Sponsor Name
S1	Wings
S2	Majani
S3	Elimu

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Table 2: StudentTable

Sch-Code	AdmNo	SponsorID	StudName	BankID	DateOfBirth
427	444	S1	Lilian Mwende	100	12/03/2000
427	443	S3	Ruth Akinyi	200	23/01/1998
427	445	S2	Frida Omondi	100	11/07/2002
427	442	S1	Bianca Godana	300	12/05/2005
427	410	S3	Christine Awuor	300	28/05/1999
427	413	S2	Baraka kalala	200	30/09/1998
427	449	S1	Rael Mokaya	100	18/02/2005
427	411	S3	Slivia Odanga	100	17/04/2001
427	412	S2	Jane Kawaswa	200	19/06/2004
427	415	S2	Jack Jake	100	22/03/2003

Table 3: AmountTable

BankID	BankName	Amount Per Student	Mode of payment
100	COOP	550,000	EFT
200	KCB	120,000	M-banking
300	EQUITY	420,000	Cheque

(d) Create a query to display the fields:

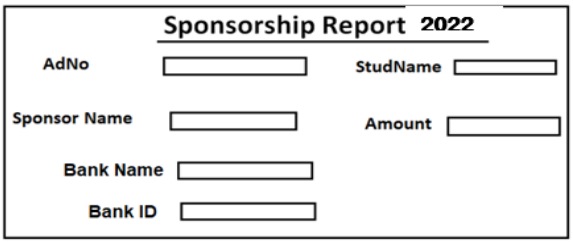
(i) AdmNo, Sponsor name, age and Students whose first name start with letter **"B"** and whose payment Bank is **"COOP"** Save query as **B-query**. **(5mks)**

(ii) StdName, Sponsor name, Mode of payment and Amount per student. Calculate the total amount received. Save query as **AMount-query**. **(5mks)**

(iii) Create **Amountreport** from A**mount query** display all the records grouped by mode of payment and find the average per mode of payment **(4mks)**

(e) Create a bar chart to display students and their respective amount received. Save chart as S**-chart.** **(2mks)**

(f) Create **S-report** to display the fields as it appears in the figure below. **(5mks)**



(f) Print the following: **(4mks)**

(i) The Student table

(ii) The B- query

(iii) The chart

(iv) The S-report

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2.The following data was extracted from Applicants' file for Maranda high school comp/Maths teacher recruitment

(a) (i) Enter the data as it appears in a spreadsheet. And save it as **INTERVIEW** **(13mks)**

	A	B	C	D	E	F	G	H	I
1	NAME	ADDRESS	TOWN	comp	Math	Eng	MEAN	APPLICANT'S POSITION	REMARK
2	Willington	400	Nairobi	40	60	60			
3	Benjamin	3201	Kisumu	55	50	40			
4	Nyambane T.	5600	Kisii	70	60	50			
5	Grace	1236	Bungoma	30	80	70			
6	Rebbeca	48	Eldoret	75	70	80			
7	Fatuma A	6032	Mombasa	40	30	50			
8	Kamau J.	8021	Nyeri	50	40	55			
9	Achieng .	209	Siaya	80	50	70			

(ii) Insert two blank rows at the top of the worksheet. **(1mk)**

(iii) Enter the following title and subtitle in the blank rows respectively; MARANDA HIGH SCHOOL RECUIRTMENT FILE and APPLICANTS DETAILS. **(3mks)**

(iv) Centre the title and subtitle across the columns that contain data. **(2mks)**

(b) Using functions, compute:

(i) The mean for each Applicant and format it to 2 decimal places. **(3mks)**

(ii) The position of each Applicant. **(3mks)**

(iii) The highest and lowest score for Benjamin, enter the answers in L3 and M3 respectively **(3mks)**

(c) The school wishes to analyze the applicants' data in order to find those applicants who qualify for recruitment. Successful candidates MUST meet the following minimum requirements;

i. Must have scored a mean of 40 marks and above;

ii. Must have scored 60 marks and above in Computer;

iii. Must have scored 50 marks and above in either Mathematics or English.

Use the above criteria to remark If the applicants qualifies, the function should display 'Successful'. Otherwise it should display 'Unsuccessful'. **(5mks)**

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(d) Using a function find the number of applicants who are successful. **(2mks)**

(e) Copy the entire worksheet to sheet 2 and rename it as Successful Applicants. **(2mks)**

(f) Filter the 'Successful Applicants' sheet to display the records of those applicants who are successful. **(2mks)**

(g) In a new worksheet Create a bar chart to compare the performance of mathematics and computer for all applicants **(4mks)**

(i) Insert SUBJECT **PERFORMANCE** as the heading of the chart **(2mks)**

(ii) Assign the appropriate LEGENDS to the chart **(1mk)**

(iii) Name the axis appropriately **(2mks)**

(h) Print: **(2mks)**

I. **INTERVIEW**;

II. Successful Applicants Sheet;

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..……

SHOOOL: ……..……

ADM NO: ……. SIGN: ……..… DATE: ……..……..

CHRISTIAN RELIGIOUS EDUCATION (313/1)
FORM FOUR (4)
Time: 2½ Hours

Instructions: Answer <u>FIVE</u> questions

1.a) State **FOUR** ways in which the study of C.R.E promotes National Unity. **(8mks)**

b) Explain why the Bible is written in different styles **(6mks)**

c) State **SIX** ways in which Christians can use the Bible in their evangelization ministry **(6mks)**

2.a) Describe ways in which the covenant between God and the Israelites was sealed at Mount Sinai **(7mks)**

b) Identify **SEVEN** challenges that Moses encountered as he led the Israelites during the Exodus **(7mks)**

c). State **SIX** ways in which the church worship is abused today. **(6mks)**

3 a) List ways in which the King of Israel used to bring the people back to God. . **(8mks)**

b) Identify the failures of King Ahab **(6mks)**

c) Give **FIVE** reasons why some Christians have lost faith in God **(6mks)**

4 a) what was the relationship between the Old Testament prophets and those of the New Testament? **(8mks)**

. b) Describe the social background of Amos **(7mks)**

c). Explain the relevance of Amos' teaching on the Remnant for Christians. **(5mks)**

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5 a) Describe the religious background of Prophet Nehemiah **(6mks)**

b) Compare Nehemiah's experiences to the life of Jesus as shown in Saint Luke's gospel. **(8mks)**

c). what lessons can a Christian learn from Nehemiah's leadership qualities? **(6mks)**

6 a) what conditions did one have to fulfil in order to be made an elder in traditional African society. **(7mks)**

b). State occasions when seers were consulted in Traditional African society. **(7mks)**

c) What aspects of traditional religion have been integrated into the Christian faith? **(6 mks)**

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EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..… DATE: ……..

CHRISTIAN RELIGIOUS EDUCATION (313/2)

FORM FOUR (4)

Time: 2½ Hours

INSRUCTIONS: ANSWER FIVE QUESTIONS

1 a) with specific examples, show how Jesus fulfilled the prophecies of Isaiah concerning the Messiah **(8mks)**.

b) Explain what the magnificant reveals about the nature of God. **(6mks)**

c) Explain **SIX** ways in which Christian youths should show gratitude to God. **(6mks)**

2 a). Describe Zechariah's vision in the temple (Luke 1:8-23) **(8mks)**

b) State **SIX** teachings of Jesus about John the Baptist. **(6mks)**

(c) Six reasons why preachers may be disliked by some people in the modern society **(6mks)**

3.a)Outline Jesus teaching about the Kingdom of God. **(7mks)**

b) Describe the incident when Jesus was questioned about marriage and resurrection in Luke 20:27-38)**(7mks)**

c) State **SIX** lessons why Christians find it difficult to accept the gospel. **(6mks)**

4 a) Explain how the use of the Holy Spirit brought disunity in the Church at Corinth **(6mks)**

b) Explain how the unity of believers is expressed in the image of body of Christ. (1ST cor 12:12-31**) (8mrks)**

c. Explain ways in which Christians use the fruit of the Holy Spirit to spread the gospel **(6mks**)

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5 a) Discuss the biblical teaching on acquisition and use of wealth **(7mks)**

b) Outline **SIX** ways Christians in Kenya help to narrow the gap between the rich and the poor. **(6mks)**.

c) Show how misuse of wealth leads to family instability **(7mks)**

6.a) Outline the rights of a Kenyan citizen. **(7mks)**

b) Give the role played by the church in the political life of a nation **(7mks)**

c) Explain how corruption has led to social disorder in the society. **(6mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……. SIGN: ……..……..… DATE: …….……..

ENGLISH

PAPER 1 (101/1)

FORM FOUR (4)

Time: 2 Hours

Instructions to the candidates

i. Write your name and admission number in the spaces above.

ii. Answer all the questions in the spaces provided.

iii. Check to ascertain that the paper has all questions.

iv. The paper has 7 printed pages.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1.Functional Writing	**20**	
2. Cloze Test	**10**	
3. Oral Skills	**30**	
	60	

FUNCTIONAL WRITING (*20 marks)*

1. Imagine you are the principal at Kilimambogo Teachers Training College. Lydia Moraa, a former employee at the college, has been invited to attend an interview at Rift Valley Institute of Technology. The principal has written to you requesting that you provide information about Moraa's; professionalism, inter-personal relationship, reliability, mastery and content delivery and her general conduct. Send this information to the principal via an email. Copy in, the chairperson of the board Rift Valley Institute of Technology without the principal knowing that the chair has the same information.

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CLOZE TEST

2. Read the passage below and fill the blanks provided with a suitable word. (10 marks)

Conducting a job search 1_____**the** Internet has definitely 2_____how job seekers contact hiring 3_____. The availability of copying and pasting a text version CV into a format 4_____company's Website has laid the foundation for an easier and 5_____ convenient process. 6_____ the Internet's convenience, a breeding ground for scam artists continues to 7_____**each** year as well. Identity thefts have increased to an overwhelming 10 million 8_____ per year and many of them are the result of phishing-not surprisingly, the employment industry is 9_____attack as well. Knowing what to look for and how to stop fraud can be the best deterrent to ensuring you have a safe experience while conducting your 10_____search.

ORAL SKILLS **(30mks)**

3 a. Read the narrative below and then answer the questions that follow.

There was a great famine in the land where Obunde and his wife, Oswera, lived with their nine children. The only creatures who had some food were the ogres and before they would part with their food, they demanded a lot of things.

One day, Oswera went to one ogre's home and asked him for some food, for by then her children were almost dying of hunger.

"I have no more food except sweet potatoes, the ogre told her.

"I shall be happy to have the potatoes. We have nothing not a grain of food at my house and the children are starving. Please let me have some and I shall repay you after the harvest."

"No, if you want food you must exchange with something right now. Will you give me one of your children in exchange for my potatoes? Oswera hesitated, her children were dear to her, but then they would die without food.

"Yes, I shall let you have one of them for this meal, if only you could let us have some potatoes," Oswera answered. Then she took a big basket full of potatoes and told the ogre the exact time he could go to her home to collect one of her children for a meal.

Oswera thought hard and she decided she should not give a single one of her children to the ogre for a meal. She therefore cut young bananas stalks and cooked them nicely.

When the ogre came, she gave them to him and the beast greedily went away satisfied, Soon the potatoes were finished and she had to go to the ogre again.

Oswera and Obunde, her husband kept on cooking banana stalks for the ogre each time he came for one of their children, until one day, she had no more banana stalks to cook for the animal.

"You have now eaten all my children, yet we still need the potatoes. What shall we give you now?" Oswera asked in despair.

"Then I shall come for you and your husband," the ogre replied angrily as he helped Oswera to load her basket on her head.

"Yes, come tomorrow at the usual time in the afternoon and get me. I shall have cooked myself for you," Oswera said calmly.

The following day the ogre went promptly as Oswera had told him and he found the home almost deserted. He looked everywhere but a part from Obunde there was no trace of anybody. Then he looked at the usual place and

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found a huge bowl of a big meal Oswera had cooked for him. The ogre did not realize they had prepared a dog instead of Oswera. When he had eaten the ogre told Obunde he would come for him the following day. Obunde got very worried and the night he could not sleep. The following day he started crying.

"Ah Oswera my wife, how did you cook yourself and how shall I cook myself for the ogre." He sat down in the dust of his compound and wept. Oswera became very annoyed with her husband.

You, you stupid, foolish man! Why sit and cry there all day long? How do you think I cooked myself? Take one of the dogs and quickly prepare it for the ogre!"

Very quickly Obunde got up, caught, killed and prepared a dog for the ogre. Then he joined his wife and children in a huge hollow part of a tree in his compound where they had hidden. That day the ogre knew he was going to have his last meal of juicy human flesh. Being a generous and unselfish ogre, he brought many of his fellow ogres. They were going to have a feast.

Suddenly as they were eating, they heard a man singing very happily. No, they could not believe it! It was Obunde singing! And he was boasting of how he had cheated the ogre.

The greedy ogre ate banana stalks
Not my family;
The greedy ogre ate a dog
Not Obunde Magoro!
The greedy ogre at banana stalks
Not my family;
Now come and get Obunde,
His children and wife.

Obunde sang the words and the ogres got very angry. The first ogre rushed into the hollow of the tree, but Oswera had heated a long piece of iron until it was white. She pushed the iron into the ogre's mouth. The beast fell down dead. The next one rushed into the hollow and Oswera killed him in the same way. In this way she killed all the ogres and saved her husband and all their children.

My story ends there.

Questions.

(a)

i) Identify **three** features that show that this story is an oral narrative. **(3mks)**

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ii) Give **two** ways you would use to capture the audience attention before narrating the story. **(2mks)**

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iii) How would you say the words of the ogre, "I have more food except sweet potatoes"? **(2mks)**

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iv) As a narrator, what would indicate to you that your audience is not attentive? **(3mks)**

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b. From the list below, classify words according to the sound of the underlined letters. An example of each sound has been given. **(4mks)**

(Bran**ch**, **Ch**auvinism, **Ch**ampagne, **Ch**olera, **Ch**olesterol, Ma**ch**ete, **Ch**aos)

/s/	/tf/	/k/
ma**ch**ine	**ch**ips	**ch**arisma

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c. You have just been invited for an interview to work as an accountant in a certain company. What would you require to do before and during an interview to ensure you succeed? **(4mks)**

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d. In the words below, underline the part that should be stressed. **(5mks)**

i) Chal.lenge

ii) Pro.se.cute

iii) A.larm

iv) A.gree.ment

v) Ap.proach

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e. Read the following telephone conversation between Mato and the secretary and then answer the questions that come after it.

Mato: I am Mato and want to speak with the manager.
Secretary: Why? What do you want with him?
Mato : That is none of your business. I want to speak with the manager now.
Secretary: He is not in. Say what you wanted and I will tell him.
Mato: Why are you wasting my time? Tell him to call me.
Secretary: How will he reach you? What is your telephone...
(*Phone is disconnected)*

Identify any four instances of lack of telephone conversations etiquette in the above conversation. **(4mks)**

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f. The underlining indicates the stressed word in the sentences below. Briefly explain what each sentence means. **(3mks)**

i) **<u>Amanda</u>** rode the bus to school

ii) Amanda **<u>rode</u>** the bus to school

iii) Amanda rode the **<u>bus</u>** to school

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..… DATE: ……..

ENGLISH
PAPER 2 (101/2)
FORM FOUR (4)
Time: 2 ½ Hours

[Comprehension, Literary Appreciation & Grammar]

Instructions to candidates

- *Write your **Name, Index number** and the **Date** in the spaces provided above.*
- *Answer **all** the questions in this paper.*
- *All your answers **must** be written in the spaces provided in this question paper.*
- *All working **must** be clearly shown where necessary*

Questions	Maximum score	Candidate's score
1	20	
2	25	
3	20	
4	15	
Total score	80	

1. COMPREHENSION PASSAGE **20 MARKS**

Read the passage below and then 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 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, but fruits and vegetables may be the richest source. Behaving like chemical warriors, 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. It's less daunting than it sounds: a portion equals a piece of fruit, three tablespoons of cooked vegetables or a glass of fresh juice.

And do you desire to relive yourself of some baggage? Calcium is the latest weight – loss star to appear on the scene. Scientists stumbled on its magic by accident. From 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 on a high calcium diet lost weight and fat than did people on a low – calcium diet - and again, both consumed the same number of calories. Researchers believe calcium encourages fat cells to stop " getting father" 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 referred to as low- energy density; that translates to few calories relative to weight. This means that you can down a mountain without fear of calories overload.

Fibre also aids weight loss because it's filling. Most high - fibre foods take a lot of chewing, triggering your body's fullness sensors. Moreover, you absorb the food more slowly so you feel full longer.

Will the wonders of food ever cease? No if researchers in nutrition keep their pace. Let them keep the good news flowing- such as the fact that we don't have to starve ourselves to lose weight and keep diseases at bay.

(Adapted from *Reader's Digest*, January 2004

(a) From the information given in the first paragraph, how can you improve your life? **(1mk)**

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

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(c) Explain how free radicals contribute to the occurrence of high blood pressure and cancer **(2mks)**

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(d) In what two forms can antioxidants be consumed **(2mks)**

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(e) In fact, nutritionists recommend that we eat five portions of fruit and vegetable a day**."** **(1mk)**

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(f) What is the attitude of the author towards calcium as a weight – cutting measure? **(3mks)**

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

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

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(i) Explain the meaning of the following expressions as used in the passage **(3mks)**

a. Daunting

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b. Baggage

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c. Down a mountain

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2. EXCERPT 25 MARKS

Read the extract below from DOLL'S HOUSE and answer the questions that follow.

Mrs. Linde: Still I think the sick are those who most need taking care of.
Rank: (shrugging his shoulders) Yes, there you are. That is the sentiment that is turning Society into a sick-house. (NORA, who has been absorbed in her thoughts, breaks out into smothered laugher and claps her hands).

Rank: Why do you laugh at that? Have you any notion what Society really is?
Nora: 'What do I care about tiresome Society? I am laughing at something quite different, something extremely amusing. Tell me, Doctor Rank, are all the people who are employed in the Bank dependent on Torvald now?

Rank: Is that what you find so extremely amusing?
Nora: (smiling and humming) That's my affair! (walking about the room) It's perfectly glorious to think that we have — that Torvald has so much power over so many people.

(takes the packet in her pocket) Doctor Rank, what do you say to a macaroon?
Rank: What, macaroons? I thought they were forbidden here.
Nora: Yes, but these are some Christine gave me. **Mrs. Linde:** What! I ?-

Nora: Oh, well, don't be ashamed! You couldn't know that Torvald had forbidden them. I must tell you that he is afraid they will spoil my teeth. But, bah! — once in a way —That's so, isn't it, Doctor Rank? By your leave! (Puts a macaroon into her mouth) You must have one too, Christine. And I shall have one, just a little one — or at most two. (walking about) I am tremendously happy. There is just one thing in the world now that I should dearly love to do.

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Rank: Well, what is that?
Nora: It's something I should dearly love to say. If Torvald could hear me.
Rank: Well, why can't you say it?
Nora: No, I daren't; it is so shocking.
Mrs. Linde: Shocking?
Rank: Well, I should not dvise you to say it. Still, with us you might. What is ti you would so much like to say if Torvald could hear you?

Nora: I should just love to say— Well, I'm dammed!
Rank: Are you mad?
Mrs. Linde: Nora, dear- !
Rank: Say it, here he is! Nora (hiding her packet) Hush! Hush! Hush!) HELMER comes out of his room, with his coat over his arm and his hat in his hand.) **Nora:** Well, Torvald dear, have you got rid of him?

Helmer: Yes, he has just gone.
Nora: Let me introduce you — this is Christine, who has come to town.
Helmer: Christine - ? Excuse me, but I don't know — Of course. School friends of my wife's I presume?

Mrs. Linde: Yes, we have known each other since then.
Nora: And just think, she has taken a long journey in order to see you.
Helmer: What do you mean? Mrs. Linde. No, really, I—
Nora: And when she heard you had been appointed manager of the Bank — she travelled here as quick as she could Torvald, I am sure you will be able to do something for Christine, for my sake, won't you?

Questions

a) Why does Mrs. Linde feel that those who are sick need taking care of? **(4mks)**

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b) Identify use of symbolism in the excerpt. **(6mks)**

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c) Give Nora's traits brought out in the excerpt. **(4mks)**

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d) What amuses Nora when she finds out that Helmer has so much power over many people?

Explain **(4mks)**

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e) What is it that Nora would dearly love to say? **(2mks)**

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f) Hush! Hush! Hush! Identify the style used here. **(2mks)**

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g) What happens immediately after the excerpt? **(3mks)**

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3. ORAL NARRATIVE (20 marks)

Read the narrative below and answer the questions that follow.

THE WISE MAN AND HIS SONS

A long time ago there was a wise old man who was respected throughout Kenya because of his wisdom. When he grew old and feeble and realized that his days were coming to an end, he called his six sons to his bedside to deliver his will.

'My dear sons,' he said, 'I am growing weak and old, and one of these days am going to die and leave you to take care of my wealth and perpetuate this family. I have great confidence in you, but I want to warn you that unless you live in unity and harmony you could easily get destroyed by your enemies.'

'We promise you father,' they replied, 'that we shall live in unity, and we shall uphold the respect you gained over the years, and we shall take care of this family and defend our property.'

'Once upon a time,' he began, 'cows lived in the wilderness like other wild beasts. They grazed in the jungle in large herds and were not afraid of the other animals. But they were constantly attacked by the other strong beasts like lions, leopards, elephants and when the cows realized that they could not live in peace in the jungle, they decided to seek help from men. They all agreed to live under the protection of men except for three stupid sister cows. Their names were Ndune (Red), Nyange (White), and Nguno (hornless). Ndune was as red as ochre and her eyes were fierce and had sparks like fire when she was angry. Her horns were long, sharp, and strong and she could scare any beast. Ndune was loved by her sisters dearly. Nyange had a white coat, as white as snow. She also had fierce horns, but looked more peaceful than Ndune, and was not so much feared, but when she was angry her white fur became whiter, and blinding to other animals. Nguno looked like a clown without horns, and annoyed other animals who regarded her as an abnormal creature of God who should not be attacked.

'I think you know this story,' he said
'Yes,' they replied, 'but please continue, father.'
'One day lion, who was very clever, decided to divide the three sister cows, kill them one by one, and eat them. Lion had tried to catch them before. But the three cows had fought and killed many beasts. Nyange and Nguno would charge their assailant from back and front while Ndune would come from the side and, with her sharp fierce horns, fierce the enemy's stomach, tear it open, and kill him instantly. Lion could not kill any of them unless he divided them and attached them separately.

'So one day the clever lion went and spoke to Ndune. He told her that she was respected in the jungle for her fierce horns and her beautiful red coat. He told her that if she lived apart from her sisters she would never be attacked by anyone. She would be made the duchess of the whole jungle kingdom. Her sisters were very ugly and annoying and that is why the three of them were constantly attacked. Ndune was very much tempted to leave her sisters when she heard what the clever lion told her. Next the lion went to Nyange and praised her beauty. He told her that she was born a peacemaker because of her white coat, and that she should have spent much of her time seeking peace in the jungle. He told her that if she left her fierce and domineering sister Ndune, and also avoid the company of her monstrous and abnormal sister Nguno, then lion would make her the beauty queen of the jungle and find her a good husband there. Nyange was flattered and started to think about the idea of living apart from her sisters.

'Finally the lion went to see Nguno. He told her that she was the most peaceful cow that ever existed, and that she was highly respected for her elegant hornless head. It was risky on her part to live with her sisters who were constantly attacked by savage beasts because of their fierce horns and their provocative coats. Lion promised to

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protect Nguno if she deserted her sisters at once. Nguno, who was getting tired of fighting ceaseless battles was happy about this friendly gesture, and at once decided to desert her sisters without pausing to think it over.'

No sooner did she leave her sisters than she was caught by lion and killed.
Nyange also slipped away from Ndune the following day and went to look for lion so that she could be made the jungle queen of beauty. She too was caught and killed. Now Ndune was left alone, and she was also caught and killed. That was the fate of the three stupid cows. Had they continued to live together in unity, they would have lived.'

'It is a very good story, father,' said the six sons,' and it has a great lesson in it. We shall continue to live in unity.''

Good, my sons,' the old man continued, 'I am very pleased to hear that, and I know that you will not let me down. I have one more example to show you, come closer.' At this point he showed them six sticks, equal in size. He gave one to each of the sons. 'Break them in two, please,' he commanded. The sons broke the sticks at one go. He asked them to break them into smaller bits, and this they did. Then he produced a bundle to his sons, and asked to pass it to one another, to examine it closely and see how it was bound. Then he asked them to break the bundle, and they all tried one after the other. None of them could manage to break the bundle, and he took it back intact.

'You see, my sons,' each one of you is like these cows or these sticks,' he said. 'If you are not united you will be destroyed like the three cows that were devoured by lion, or like the six sticks you have just destroyed. But if you stay together like this bundle of sticks, you will defeat your enemies, and you will be able to protect your property and sustain this family.'
'Yes, father,' replied his sons, 'unity is strength and we shall always remain united.'

Questions

a) Identify and explain any three features of an oral narrative found in this story. **(3mks)**

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b) Classify the two types of narratives found in this story. **(2mks)**

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c) What tactic does the lion use to separate the cows? **(2mks)**

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d) Identify and illustrate the character trait of the three cows. **(2mks)**

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e) Give two reasons why the old man uses the two illustrations to make his point clear instead of using one. **(3mks)**

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f) Give two proverbs, one similar to and one contrasting to the one used in the story **(2mks)**

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g) Identify and show the effectiveness of any two styles in the story, apart from the one in (f) above. **(2mks)**

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h) How would you make rendition of this narrative lively? **(2mks)**

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i) Which are the social-economic activities of the given community? **(2mks)**

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4. GRAMMAR (15MKS)

a) Rewrite the following sentences according to the instructions given (4mks)

i) She will not be given a driving license. She passes the road test (Rewrite as one using'unless')

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ii) The woman left the child with a neighbor and went to the market. (Begin: leaving….)

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iii) The boys went to play in the field (underline the adverbial)

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iv) I didn't give the money to my sister. I gave the money to my cousin. (Rewrite using 'rather')

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b) Fill in the blank spaces with the appropriate complex preposition (3mks)

(i) ……cost, it is not worth much.

(ii) I am calling**…….**my father

(iii) We went **……**Mombasa but we did not see the bus.

c. For each of the following sentences, use the correct form of the word in brackets to fill in the blank space. (3mks)

(i) Once the sun has**.....** I cannot sleep any more.(rise)

(ii) How long have you**.....** here? (dwell)

(iii) It is advisable that we**.....** forgive those who wrong us. (condition)

d. Fill with most appropriate collective noun (2mks)

1. A ……. of soldiers received medals from the president.

2. A…….of islands was submerged in the ocean when the cyclone occurred.

e. Supply the correct form of the verb in the following sentences. (3mks)

i. All but my aunt …… arrived (has/have).

ii. Both dogs ……. chasing cars (enjoy/enjoys).

iii. The Minister as well as the Governor and the Speaker of the House……present (was/were).

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……..……. SIGN: ……..… DATE: ……..……..

ENGLISH

PAPER 3 (101/3)

FORM FOUR (4)

Time: 2 ½ Hours

Instructions to the candidates

i.Write your name and admission number in the spaces above.

ii. Question one and two are compulsory.

iii. Chose any one question in question three.

iv. Check to ascertain that the paper has all questions.

v.The paper has 2 printed pages.

FOR EXAMINER'S USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1.Imaginative/Creative Writing	20	
2. Compulsory Set Book Essay	20	
3. Optional Set Book Essay	20	
	60	

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Q1. Imaginative composition

Either

a) *Write a composition ending with the sentence.*
… this event marked a turning point in my life. **(20mks)**

Or

b) Write a composition to illustrate the saying.
A bird in hand is worth two in the bush. **(20mks)**

Q2. The Compulsory Set Text

Parenting should build an environment of trust and peace in a family. Write an essay that explores how this statement applies to the Ole Kaelo family in ***Blossoms of the Savannah*** **(20mks)**

Q3. <u>The Optional Set Texts (20 Marks)</u>

(a) Drama
<u>Inheritance By David Mulwa</u>
Abuse of power has led to the failure of many countries in Africa and elsewhere in the world. With relevant examples from *Inheritance*, write an essay to illustrate this statement. **(20mks)**

Or
(b) The Novel
<u>Artist of The Floating World</u>
'Family plays an important role in a person's well-being.' Using illustrations from the novel Artist of the floating world, show how true this statement is. **(20mks)**
.

Or

(c)The Short Story
A Silent Song and Other Stories
War causes a lot of harm and thus should be avoided at any cost. Validate this statement basing your illustrations from Chimamanda Adichie's 'Ghosts' **(20mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……..……. SIGN: ……..… DATE: …….……..

GEOGRAPHY

(QUESTION PAPER I)

FORM FOUR

TIME: 2 3/4 HOURS

Instructions to candidates

(a) Write your name, admission number and class in the spaces provided above.

(b) This paper has **two** sections: **A** and **B**

(c) Answer **all** the questions in section **A**

(d) Answer **question 6** and any other **two** questions from section **B**

(e) All answers must be written in the spaces provided after Question 10.

(f) This paper consists of 14 printed pages.

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

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Section	Questions	Candidate's Score	Maximum Score
A	1 – 5		25
	6		25
			25
			25
	Total Score		100

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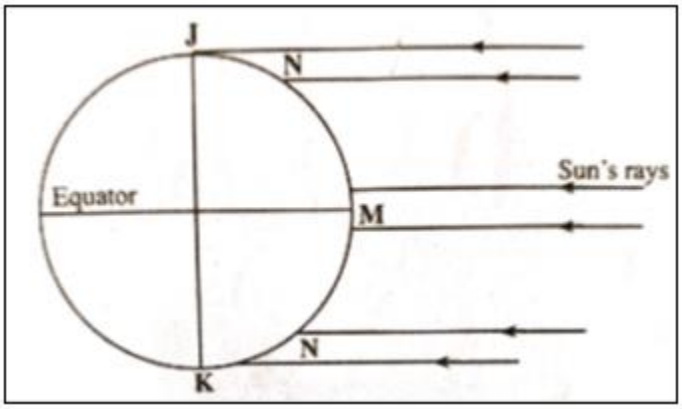
SECTION A

Answer ALL questions in this section.

1(a) Name the first **two** planets of the solar system. **(2mks)**

(b) State **three** effects of the rotation of the earth on its axis. **(3mks)**

2a) The diagram below shows the angles of the sun's rays at different altitudes when the sun is overhead at the equator. Use it to answer question (a) and (b).



(b) Name the parts of earth's surface marked **J** and **K**. **(2mks)**

(c) Give **two** reasons why the intensity of insolation is higher at **M** than at **N**. **(2mks)**

3) (a) Identify the temperate grasslands found in the following countries.

(i) Canada **(1mk)**

(ii) Russia **(1mk)**

(iii) Australia **(1mk)**

(b) Give **two** reasons why the Tundra region has scanty vegetation. **(2mks)**

4.(a) Identify **two** sources of water found in a lake. **(2mks)**

(b) Give **three** ways through which lakes are formed. **(3mks)**

5(a) Give **three** factors that determine soil leaching. **(3mks)**

(b) State **three** ways in which mulching helps in soil conservation. **(3mks)**

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SECTION B

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

6. Study the map of Nyeri 1:50,000 (sheet 120/4) provided and answer the following questions.

(a) (i) Identify **two** map sheets to the eastern part of Nyeri. **(2mks)**

(ii) Name **two** administrative units found in Nyeri. **(2mks)**

(iii) Calculate the magnetic declination of the area covered by the map as at 1978. **(3mks)**

(b) (i) Give **three** types of natural vegetation found in the area covered by the map. **(3mks)**

(ii) Measure the length of the road D 432 in the southern part from Unjiru junction to Kangaita market. Give your answer in kilometers. **(2mks)**

(c) Using a vertical scale of 1cm to represent 50 metres;

(i) Draw a cross section from grid reference 680630 to 730650. **(4mks)**

(ii) On the cross section, mark and name the following;

- Hill **(1mk)**
- River **(1mk)**
- Road D 449 **(1mk)**

(d) Citing evidence from the map, identify **three** economic activities in the area covered by the map. **(6mks)**

7.(a) (i) Define the term folding. **(2mks)**

(ii) Name **two** fold mountains that were formed during Alpine orogeny. **(2mks)**

(b) (i) Apart from fold mountains, give **three** other features resulting from folding. **(3mks)**

(ii) With the aid of a diagram, describe the formation of an overthrust fold. **(6mks)**

(c) Explain **three** positive effects of fold mountains on human activities. **(6mks)**

(d) Members of your class are planning to carry out a field study on an area that has undergone folding process.

(i) Give **three** ways you would prepare for the study. **(3mks)**

(ii) State **three** advantages of studying landforms through field work. **(3mks)**

8. (a) (i) What is weathering? **(2mks)**

(ii) Apart from plants, give **three** other factors that influence the rate of weathering. **(3mks)**

(iii) Explain **two** ways in which plants cause weathering. **(4mks)**

(b) Describe the following processes of weathering:

(i) Block disintegration **(4mks)**

(ii) Carbonation **(4mks)**

(c) Explain **four** effects of mass wasting on the environment. **(8mks)**

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9. (a) (i) Apart from surface run off, give **two** other processes in the hydrological cycle. **(2mks)**

(ii) State **three** factors that determine the amount of surface run off. **(3mks)**

(b) Explain **three** factors that influence the transportation of materials by a river. **(6mks)**

(c) (i) What is river rejuvenation? **(2mks)**

(ii) Explain **three** conditions that lead to rejuvenation of a river. **(6mks)**

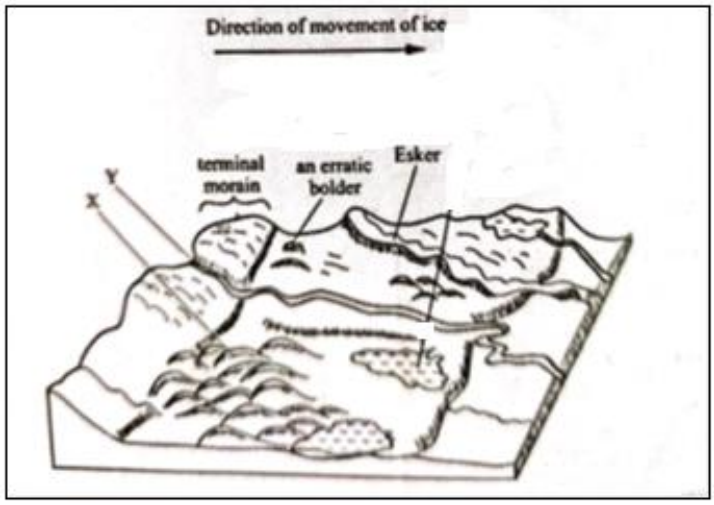
(d) Explain **three** negative effects of rivers to the human environment. **(6mks)**

10. (a) (i) What is an ice sheet? **(2mks)**

(ii) Explain **three** factors that influence the movement of ice from the point of accumulation. **(6mks)**

(b) Describe how an arête is formed. **(6mks)**

(c) The diagram below shows features resulting from glacial deposition on a lowland area.



(i) Name the features marked **X** and **Y**. **(2mks)**

(ii) Describe how terminal moraine is formed. **(3mks)**

(d) Explain **three** positive effects of glaciation in lowland areas. **(6mks)**

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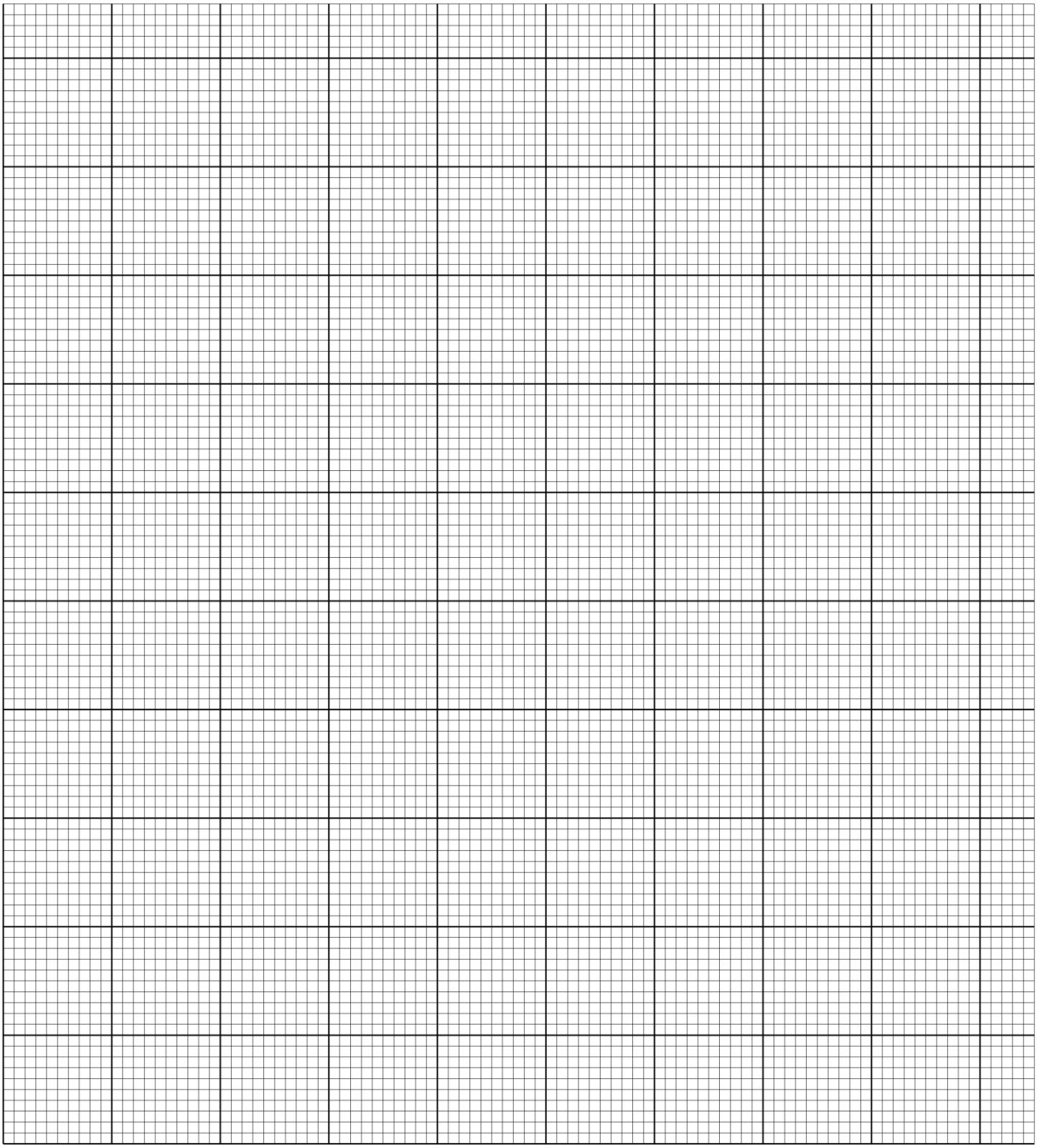
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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..……

SHOOOL: ……..……

ADM NO: ……..…… SIGN: ……..……..… DATE: ……..……..

GEOGRAPHY

(QUESTION PAPER II)

FORM FOUR

TIME: 2 3/4 HOURS

Instruction to the candidates,

- **This paper has two Sections: A and B.**
- **Answer all questions in Section A.**
- **In Section B Answer question 6 and any other two questions.**
- **All Answers must be written on a separate answer sheet provided.**

For Examiner's Use Only

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 5	25	
	6	25	
		25	
		25	
		100	

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SECTION A

1. a) Apart from fishing name two other economic activities that are practiced along the East African coastal waters **(2mks)**

b) Identify three methods of fishing from are used for deep area fishing **(3mks)**

2a) Give physical tourists attractions found in the western region of Kenya **(3mks)**

b) State two reasons why domestic tourism is encouraged in Kenya **(2mks)**

3a) State two human problems facing HEP projects in Africa **(2mks)**

b) State three physical factors that have favoured high hydro-electric power production in Uganda **(3mks)**

4a) Give two trading blocks in Africa **(2mks)**

b) Identify three political problems facing regional trading blocs in Africa **(3mks)**

5. a) Name two towns in Kenya where motor vehicle assembling plants are located **(2mks)**

b) List three risks associated with the use of motor vehicles **(3mks)**

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SECTION B

Answer Question 6 and any other TWO Questions in this Section.

6. The photograph below shows cattle rearing in an area in Kenya. Use it to answer the following questions;



(a) (i) Name the type of photograph shown above **(1mk)**

(ii) What economic activity is carried out in the area shown by the photograph? **(1mk)**

(iii) Give three counties where the economic activity you identified in (ii) above takes place in Kenya. **(3mks)**

(iv) Draw a rectangle measuring 16cm by 9cm to represent the area of the photograph. On it sketch and label the main features shown on the photograph **(5mks)**

(b)(i) From the photograph, give two indicators showing that the area is experiencing drought-like conditions. **(2mks)**

(ii) Name two exotic breeds of dairy cattle reared in Kenya. **(2mks)**

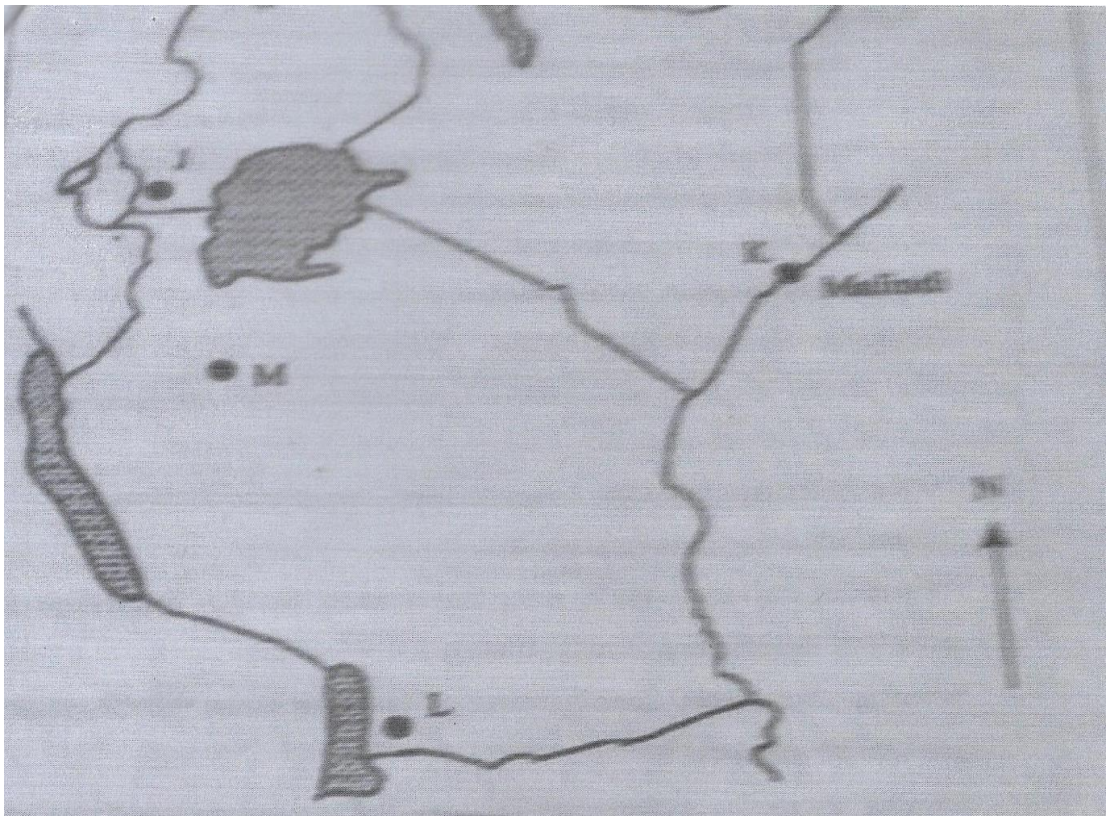
(c) Explain four benefits of dairy farming to the economy of Kenya. **(8mks)**

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7a) State four factors that influence the occurrence of minerals **(4mks)**

b) Describe the open cast method of mining? **(5mks)**

c) Study the map below and answer the questions that follow



i) Name the mineral found in areas marked I, K, L, and M **(4mks)**

d) Explain three ways in which mining promotes industrialization in Kenya **(6mks)**

(e) Students carried out a felid study about rocks and minerals

i) State three problems they are likely to undergo during the field study **(3mks)**

ii) Give the follow-up activities they will undertake **(3mks)**

8 (a) (i) Define the term forestry **(2mks)**

(ii) Apart from tropical hardwood forest, name three other types of natural forests **(3mks)**

iii) State the problems experienced in the exploitation of tropical hardwood forest **(4mks)**

b) List the characteristics of planted forests in Kenya **(5mks)**

c) Explain three factors that favour forests in Canada **(6mks)**

d)Give five measures that the government has taken to conserve and manage forests in Kenya **(5mks)**

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9.a Describe the following

(i) Mulching **(4mks)**

ii) Bunds and gabions **(6mks)**

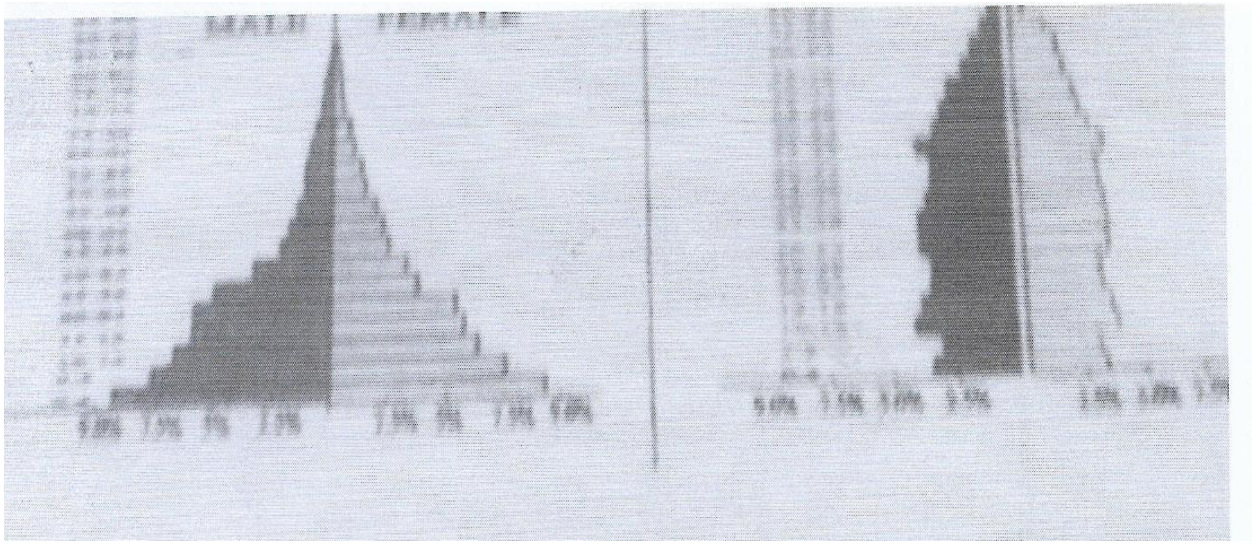
b) Give three ways in which the government of Kenya is trying to rehabilitate overgrazed lands in Kenya **(3mks)**

c (i) State examples of irrigation methods commonly used in Kenya **(4mks)**

ii) Explain two conditions that favour irrigation farming in Kenya **(4mks)**

d) Give the characteristics of land reclamation in Kenya **(4mks)**

10a) Describe the characteristics of population of the two countries as represented by the pyramids **(6mks)**



b(i) What is the meaning of fertility rate? **(2mks)**

ii) Explain three factors that have contributed to the reduction in fertility rate in Kenya **(6mks)**

c) State three problems caused by the slow population growth rate in developed countries **(3mks)**

d) Explain four causes of rural–rural migration in Kenya **(8mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..……..

SHOOOL: ……...……

ADM NO: …….……. SIGN: …….……..… DATE: ……...……..

HISTORY AND GOVERNMENT (311/1)

PAPER 1

FORM FOUR

TIME: 2 ½ HOURS

INSTRUCTIONS

a)This paper consists of three sections: A, B and C

b)Answer all questions in section A, Three questions in section B, and Two questions in Section C.

c)Answers to all questions must be written in the answer booklet provided.

d)Candidates should answer the questions in English.

SECTION A 1-17	SECTION B				SECTION C			
	18	19	20	21	22	23	24	

Prefer Calling Amobi Group of Examiners @ 0743 333 000 OR 0706 851 439 for Marking Schemes

SECTION A (25 MARKS)

ANSWER ALL QUESTIONS FROM THIS SECTION

1. State two ways through which archeologists obtain information on the History of Kenya. **(2mks)**

2. State one similarity in the political organization of the Ameru and Abaluyha of Kenya during the 19th century. **(1mk)**

3. Name two important landmarks that were built by the Portuguese along the coast of East Africa. **(2mks)**

4. Give two reasons why the government may limit a person's freedom of speech. **(2mks)**

5. Identify the constitutional amendment that made Kenya return to a multi-party state. **(1mk)**

6. State the main function of the Kenyan Bill of Rights**.** **(1mk)**

7. Give two reasons why the British used the Imperial British East Africa Company (IBEACo) to administer its possession in Kenya. **(2mks)**

8. Name the body that made laws in Kenya during the colonial period. **(1mk)**

9. Give the main reason why the colonial government created African Reserves in Kenya. **(1mk)**

10. State two grievances raised by the Asians in Kenya that were addressed by the Devonshire white paper of 1923. **(2mks)**

11. Give the main political contribution of Christian missionaries in Kenya during the struggle for independence up to 1939**.** **(1mk)**

12. State two challenges that the independent schools faced in Kenya during the colonial period. **(2mks)**

13. What was the main contribution of Joseph Thomas Mboya to the History of Kenya. **(1mk)**

14. Name two finance committees of Kenyan parliament. **(2mks)**

15. State the military power of the president in Kenya**.** **(1mk)**

16. Name two superior courts in the Kenyan Judiciary. **(2mks)**

17. Name one elective seat in the county government in Kenya. **(1mk)**

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SECTION: B (45 MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION

18a) State three political functions of the council of elders among the Luo in Pre-Colonial Kenya. **(3mks)**

b) Describe the social organization of the Agikuyu during the Pre-Colonial period. **(12mks)**

19a) Give three reasons why the British used direct rule in some parts of Kenya during colonial period **(3mks)**

b) Explain six negative effects of the British colonial rule on the people of Kenya **(12mks)**

20a) Outline five roles played by President Daniel Arap Moi in the development of education sector between 1979-2002 **(5mks)**

b) Explain five factors that promoted the rise of nationalism in Kenya after 1945 **(10mks)**

21 a) Outline five grievances expressed by Kikuyu Central Association presented by Jomo Kenyatta to the colonial secretary in 1929 **(5mks)**

b) Describe five political roles played by African Elected Members Organization during the struggle for independence in Kenya **(10mks)**

SECTION: C (30 MARKS)

ANSWER TWO QUESTIONS FROM THIS SECTION

22a) State three ways through which direct democracy is exercised in Kenya **(3mks)**

b) Explain six rights of the arrested person in Kenya **(12mks)**

23a) Name three categories of members of the County Assembly **(3mks)**

b) Explain six functions of a returning officer in the general elections in Kenya **(10mks)**

24a) Identify five internal sources of revenue for the National Government in Kenya **(5mks)**

b) Explain five ways in which the County Government ensure effective utilization of public finance **(10mks)**

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EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..… DATE: ……..

311/2

HISTORY AND GOVERNMENT

PAPER 2

FORM FOUR

TIME: 2 ½ HOURS

INSTRUCTIONS

a)This paper consists of three sections: A, B and C

b)Answer all questions in section A, Three questions in section B, and Two questions in Section C.

c)Answers to all questions must be written in the answer booklet provided.

d)Candidates should answer the questions in English.

SECTION A 1-17	SECTION B				SECTION C			
	18	19	20	21	22	23	24	

Prefer Calling Amobi Group of Examiners @ 0743 333 000 OR 0706 851 439 for Marking Schemes

SECTION A(25MKS)
Answer all questions in this section

1. Give the relationship between "History" and "Government". **(1mk)**

2. Name two types of dwellings used by the early man during the Early Stone Age period **(2mks)**

3. Give two inventions that led to the Agrarian Revolution in Britain. **(2mks)**

4.State any two improvement which were made on macadamized roads in the 19th century **(2mks)**

5.Give two advantages of the use of electricity in industries during the industrial revolution **(2mks)**

6.Give two reasons why early urban centers in Egypt developed in the Nile valley **(2mks)**

7. Identify one form of picture writing during the early civilizations **(1mk)**

8. State one way in which centralization of the authority contributed to the success of the Buganda Kingdom **(1mk)**

9. State one political factor which leads to the scramble for colonies in Africa **(1mk)**

1**0.**Name one community in West Africa which resisted European invasion in the 19th century **(1mk)**

11. Give two resolutions of the Berlin conference of 1884 to 1885 **(2mks)**

12. Give two reasons. Why the League of Nations was formed in1919 **(2mks)**

13. State one major event that led to the outbreak of the First World War **(1mk)**

14. Identify two major ways used by the superpowers to fight during the cold war **(2mks)**

15. Give one main function of the international labour organization (ILO) **(1mk)**

16. Name the philosophy that Tanzania adopted at independence to spearhead her development **(1mk)**

17. Give one disadvantage of a federal system of government **(1mk)**

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SECTION B (45 Marks)

Answer any three questions from this section

18.(a) Give five reasons why hunting of wild animals was mainly a group activity during the Stone Age period. **(5mks)**

(b) Describe five ways in which the development of the upright posture improved the early man's way of life. **(10mks)**

19.(a) Give three uses of wind as a source of energy in ancient times. **(3mks)**

(b) Explain six effects of iron working technology on African communities before the 19th Century. **(12mks)**

20.(a) Identify the three methods used by the French to acquire colonies in West Africa **(3mks)**

(b) Explain six factors that led to the defeat of Samori Toure by the French**.** **(12mks)**

21. a) State three ways used by nationalists in Ghana to fight for independence. **(3mks)**

b) Explain six factors that led to the development of African Nationalism in Ghana **(12mks).**

SECTION C (30 MARKS)

Answer any two questions from this section.

22.(a) Give three reasons why the British used direct rule in Zimbabwe**.** **(3mks)**

(b) Explain six reasons why indirect rule was not successful in Southern Nigeria. **(12mks)**

23.(a) Name three permanent members of the United Nations Security Council. **(3mks)**

(b) Explain six ways in which the United Nations provides humanitarian assistance**.** **(12mks)**

24.(a)State five objectives for the formation of Common Market for Eastern and Southern Africa (COMESA) **(5mks)**

(b) Explain five challenges facing the Common Market for Eastern and Southern Africa. (COMESA) **(10mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..……

SHOOOL: ……..……

ADM NO: ……. SIGN: ……..… DATE: ……..……..

HOME SCIENCE

FORM FOUR

PAPER 1 - Theory (441/1)

TIME: 2 ½ hours

Instructions to students

a) Write your name, admission number and class in the spaces provided
b) Sign and write the date of the examination in the spaces provided
c) This paper consists of **three** sections: **A**, **B** and **C**
d) Answer **all** the questions in sections **A** and **B** and any two questions in section **C**
e) Answers to all the questions must be written in the spaces provided in the paper
f) This paper consists of 12 printed pages
g) Students should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing
h) Students should answer the questions in English

For examiner's use only

Section	Question	Maximum Score	Student's Score
A	1- 19	40	
B	20	20	
		20	
		20	
TOTAL SCORE		100	

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SECTION A: (40 marks)

1. Identify **two** functions of lipids in the body. **(2mks)**

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2.What vitamins have the following scientific names? **(2mks)**

Tocopherols ……..

Cholecalciferol ……..

Thiamine ……..

Phylloquinone ……..

3. Mention **two** reasons why a classroom should be well lit. **(2mks)**

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4. Outline **three** reasons why charcoal should be well lit before starting cooking. **(3mks)**

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5. List **four** soft furnishings used in the bedroom. **(2mks)**

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6. Mention the function of each of the following parts of a sewing machine. **(2mks)**

Feed dog ……

Tension disc ……

Take up lever ……

Stop motion screw ……

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7.Identify **two** qualities of a good dish cloth. **(2mks)**

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8.List **four** items that can be starched in the home. **(2mks)**

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9. Mention **two** advantages of tacking before stitching. **(2mks)**

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10. Suggest **four** areas where diagonal tacking/basting can be done during stitching. **(2mks)**

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11. Complete the table on classification of fibres. **(2mks)**

Fibre	Class
Linen	
Acetate rayon	
Wool	
Elastofibre	

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12. Highlight **three** ways of preventing falls in the home. **(3mks)**

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13. Mention **two** uses of tomatoes in cooking. **(2mks)**

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14. Identify **three** advantages of shopping in a big supermarket/hypermarket. **(3mks)**

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15. Suggest **two** reasons why iron should be increased in a pregnant woman's diet. **(2mks)**

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16. Give **two** limitations of burning as a method of disposing refuse. **(2mks)**

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17. Mention **two** advantages of cash buying. **(2mks)**

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18. Give **two** causes off thread breaking when using a sewing machine. **(1mk)**

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19. Mention **four** reasons for blanching vegetables. **(2mks)**

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SECTION B: (20 marks)

COMPULSORY

Answer question 20 in the spaces provided after the question

20. You are holding your 18th birthday party and have invited a number of friends.

a) Outline the procedure you will follow when laundering the sheer silk blouse you intend to wear to the party. **(9mks)**

b) Describe how you will clean the polished dining table to be used that day. **(6mks)**

c) Outline how you will clean the tarnished silver spoons to be used by the guests. **(5mks)**

SECTION C: (40 marks)

*Answer any **two** questions from this section in the spaces provided at the end of the section.*

21.

a) Outline **five** reasons for including fruits and vegetables in a meal. **(5mks)**
b) Explain **five** factors to consider when buying a clothes drying rack. **(5mks)**
c) Highlight **four** factors to consider when buying cabbages. **(4mks)**
d) Discuss **three** problems a student may face when buying body lotion. **(6mks)**

22.

a) Explain **three** principles of food preservation. (**6mks)**
b) Outline **five** rules to observe when removing stains from garments. **(5mks)**
c) Suggest **five** causes of malnutrition in pregnancy. **(5mks)**
d) Mention **four** reasons why it is not advisable to buy a cooker on hire purchase**.** **(4mks)**

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23.

a) Suggest **four** qualities of a well-made patch on a bedsheet. **(4mks)**

b) Discuss **four** factors to consider when choosing a seam in garment construction. **(8mks)**

c) Highlight **four** benefits of breastfeeding to a nation. **(4mks)**

d) Mention **four** qualities of fabric for making a baby's clothes. **(4mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……..……. SIGN: ……..……..… DATE: ……..

441/2
HOMESCIENCE
Paper 2
Clothing Construction
(Practical)
Time: 2 ½ Hours

A pattern of a girls blouse is provided. You are advised to study the sketches, the Question paper and the layout before you begin the test.

1. **MATERIALS PROVIDED.**

Pattern pieces of a girls blouse.

A Blouse front with facing

B Blouse back bodice

C Back yoke

D Collar

E Neck facing (back)

NB: Interfacing of the collar should be cut from the same fabric using the collar pattern piece.

2. Light weight plain cotton fabric 65cm long and 90 cm wide.

3. Sewing thread to match the fabric.

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The Test.

Using the materials provided, cut out and make the RIGHT HALF of the blouse to show the following processes.

(a) Preparing the inverted pleat.

(b) Attaching yoke on to the back bodice using an overlaid seam. (Neaten using 100p stitch).

(c) Making a double stitched (machine fell seam) on the shoulder.

(d) Making of the side dart and the Seam using an open seam.

(e) Joining the facings

(f) Neatening of the facings

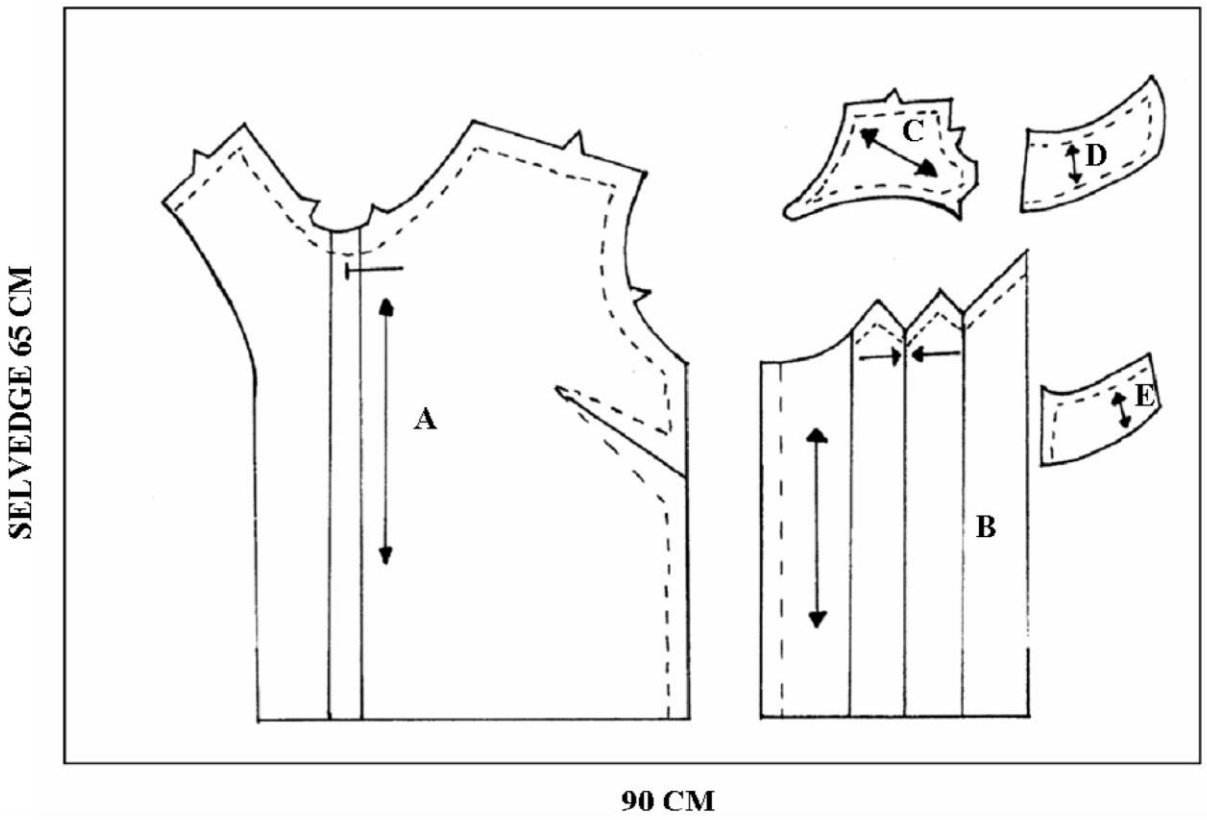
(g) Preparation of the collar using facings.

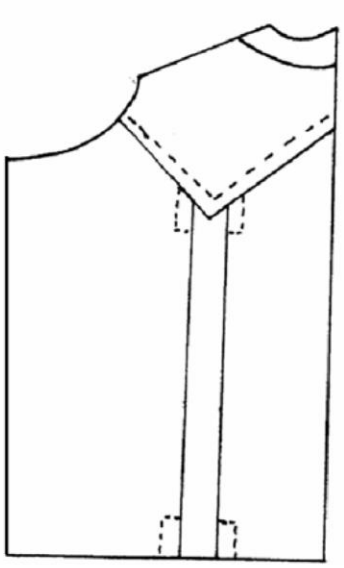
(h) Attachment of the collar (i) Making of the button hole by hand.

(j) Attaching the button.

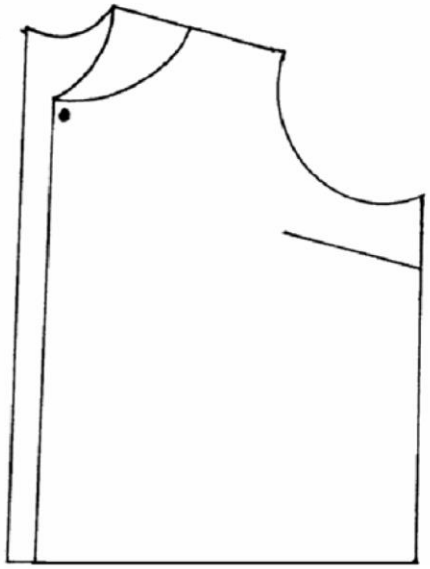
At the end of examination, firmly sew on to your work, on a single fabric, a label bearing your name, and index number. Remove the needle and pins from your work. Then fold your work carefully and place it in the envelope provided. Do not put scraps of material in the envelope.

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Back View



Front View

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EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……..……. SIGN: ……..……..… DATE: ……..

HOME SCIENCE (FOODS AND NUTRITION)

FORM FOUR

PAPER 3 - PRACTICAL (441/3)

PLANNING; 30 MINUTES

PRACTICAL TEST SESSION; 1 ¼ HOURS

INSTRUCTION TO CANDIDATES

1.Read the test carefully
2.Write your name and admission number on every sheet of paper used
3.Textbooks and recipes may be used during the planning session as reference materials
4.You will be expected to keep to your order of work during the practical session
5.You are allowed to take away ONLY your reference materials at the end of the planning session
6.You are not allowed to bring additional noted to the practical session.

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THE TEST

You are staying with your sister who has recently delivered through caesarean section. Using all the ingredients listed blow, prepare cook and serve suitable lunch for the two of you. In addition prepare a suitable nutritious drink.

INGREDIENTS

Milk

Sugar

Irish potatoes/Green bananas/Rice

Green grams/Lentils/Liver

Salt

Oil/Cooking fat

Coriander

Tomatoes

Carrots

Onions

Cabbage/Green leafy vegetables

Fruit in season

PLANNING SESSION- 30 MINUTES

Use separate sheets of paper for each tasks listed below and a carbon paper to make duplicate copies. Then proceed as follows:

1. Identify the food items and write down their recipes.
2. Write down your order of work
3. Make a list of foodstuff, materials and equipment you will require.

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..…

SHOOOL: ……

ADM NO: ……..…… SIGN: ……..……..… DATE: ……..……..

ISLAMIC RELIGIOUS EDUCATION

PAPER 1 (314/1)

FORM FOUR (4)

Time: 2 ½ Hours

INSTRUCTIONS:

1. This paper contains six (6) questions.

2. Answer 5 questions only

3. Write your answers in the answer sheet provided.

4. All answers must be in English.

1 a. Explain the relevance of narrating stories of the prophet in the Holy Quran. **(6mks)**

b. Discuss the factors that will strength peace and cohesion in the society according to suratul hujurat **(8mks)**

c. State six reasons why the Quran was revealed in bits **(6mks)**

2a. Outline ways through which the Qur'an has been protected from interpolation. **(8mks)**

b. Why was Zaid bin Thabit placed in charge for the compilation of the Qur'an. **(5mks)**

c. State where the surah was revealed. **(7mks)**

i) Suratul Alaq –

ii) Suratul Asr –

iii) Suratul Nasr –

iv) Suratul Fiil –

v) Suratul Baqara –

vi) Suratul Nur –

vii) Suratul Hujurat –

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3a. Discuss the contribution of Hadith to the Development of Islamic culture. **(7mks)**

b. Enumerate Methods used by Imam Bukhari in the compitation of Sahih Bukhari. **(7mks)**

c. The prophet said seeking knowledge is an obligation on every Muslim. In what ways muslims in Kenya have practiced the saying about the acquisition of knowledge. **(6mks)**

4a.Differentiate between hadith Qudsi and hadith an Nabawwi. **(6mks)**

b. The prophet saw said "whoever is merciful even to a sparrow that he slaughter Allah will be merciful to him on the day of judgment. In light of this hadith and other on caring of animals. Explain the Islamic teaching of the Hadith on the care for animals**.** **(8mks)**

c. Explain the four forms of hadith **(4mks)**

5a.Discuss the factors that led to the development of school of thought (madhahibs**).** **(8mks)**

b. Describe the performance of swalatul musafir. **(8mks)**

c. Significance of the concept of Tawba in Islam. **(4mks)**

6 a. Explain the three times of Tawheed. **(6mks)**

b. Gives the reasons for the revelation of Divine books of Allah**.** **(7mks)**

c. Outline the significance of Qadha and Qadar to a muslim. **(7mks)**

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EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..……..… DATE: …….……..

ISLAMIC RELIGIOUS EDUCATION

PAPER 2 (314/2)

FORM FOUR (4)

Time: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES:

- Write your name and index number on the answer sheets given
- This paper consist of six questions.
- Answer any five questions.
- This paper consist of two printed pagers.
- Candidates should check the paper to ascertain that all pages are printed and no questions are missing.
- Candidates should answer the questions in English.

1. (a). Discuss the measures put by Islam to guard the society against zinaa. **(10mks)**

(b) State the manners of visiting the toilet according to Islam. (**5mks)**

(c) What is the rationale for the prohibition of *Israf*? **(5mks)**

2. (a) State the conditions for *nikah*. **(5mks)**

(b) Identify reasons that may force a husband and wife to divorce each other **(7mks)**

(c) Explain the different types of eddat in Islam **(8mks)**

3. (a) Identify **five** illegal ways of earning money according to Islam. **(5mks).**

(b) Give the conditions that an agreement has to fulfill for it to be binding to two Parties according to Islam. **(8mks)**

(c) Describe the Islamic teachings on co-existence with non-Muslims. **(7mks)**

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4.(a) Explain **five** challenges Kenyan Muslims face in education. **(10mks)**

(b) Give reasons why Sayyidina Uthman Ibn Affan was elected Caliph **(5mks)**

(c) Mention **five** contributions of Caliph Umar bin Khattab to the development of Islam**.** **(5mks)**

5. (a) Mention the contribution made by the Abbasids to education. **(6mks).**

(b) Explain ways through which Prophet Muhammad (p.b.u.h) eliminated racism. **(7mks)**

(c) Discuss the factors that led to the fall of the Ummayads **(7mks)**

6.(a) Discuss four ways in which Islamic culture has influenced the Kenya society**.** **(8mks)**

(b) State Ibn Khaldun's views in education. **(7mks)**

(c) Identify five contributions of Ibn Sina to medicine. **(5mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

JINA: ……

SHULE: ……..……..……

NAMBARI YA USAJILI: …….……. SAHIHI: ……..… TAREHE: ……..

102/1
KISWAHILI
KIDATO CHA NNE
KARATASI YA 1
INSHA
MUDA: SAA 1¾
Maagizo

(a) Andika insha **mbili**. Insha ya kwanza ni ya **lazima**.
(b) Kisha chagua insha nyingine moja kati ya hizo tatu zilizobakia.
(c) Kila insha isipungue maneno **400.**
(d) Kila insha ina alama 20.
(e) Kila insha **lazima** iandikwe kwa lugha ya **Kiswahili.**
(f) Insha zote **sharti** ziandikwe katika nafasi ulizoachiwa kwenye kijitabu hiki cha maswali.
(g) Watahiniwa ni lazima wahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote *yamo.*

Kwa matumizi ya mtahini pekee.

Swali	Upeo	Alama
1	20	
2	20	
3	20	
4	20	
Jumla	40	

1. Lazima:
Wewe ni mwakilishi wa vijana katika gatuzi lenu. Kumekuwa na tuhuma za vijana kutumia vibaya simu tamba katika jamii. Andika mahojiano yako na mwanahabari ukitetea namna simu tamba inavyowafaidi vijana.

2.Fafanua umuhimu wa kudumisha amani nchini wakati wa kampeni na uchaguzi wa kisiasa.

3.Andika insha inayooana na methali ***mchuma janga hula na wa kwao.***

4.Andika insha itakayoisha kwa maneno yafuatayo:

….nilipogutuka niliangaza macho huku na kule. Aah! Kumbe nilikuwa nikiota!

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EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

JINA: ……..……..……

SHULE: …….

NAMBARI YA USAJILI: ……. SAHIHI: ……..… TAREHE: ……..……..

KISWAHILI
KIDATO CHA NNE

KARATASI YA PILI

MUDA: SAA 2:30

MAAGIZO:

Jibu maswali yote.

Majibu yote yaandikwe katika nafasi zilizoachwa katika kijitabu hiki cha maswali.

SWALI	UPEO	ALAMA
1. UFAHAMU	15	
2. UFUPISHO	15	
3. MATUMIZI YA LUGHA	40	
4. ISIMU JAMII	10	
Jumia	80	

1. UFAHAMU(alama 15)

Soma kifungu kifuatacho kisha ujibu maswali yanayofuata.

Athari za muda mrefu za pombe hutapakaa baina ya uwezekano wa faida za kiafya kwa watumiaji wa viwango vya chini vya pombe hadi madhara makubwa katika hali ya matumizi mabaya ya pombe kwa muda mrefu.

Viwango vya juu vya matumizi ya pombe huhusiana na ongezeko la hatari ya kuendeleza ulevi, ugonjwa wa moyo, kutofyonza vyakula, ugonjwa sugu wa kongosho, ugonjwa wa ini kutokana na pombe, na kansa. Uharibifu kwa mfumo mkuu wa neva na mfumo wa neva za pembeni unaweza kusababishwa na matumizi ya kila mara ya pombe. Matumizi ya pombe kupita kiasi kwa muda mrefu yanaweza kuharibu takribani kila kiungo na mfumo katika mwili. Ubongo unaokua wa kijana aliyebaleghe huwa hasa katika hatari kubwa ya kudhurika na sumu ya pombe.

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Kihistoria, madaktari wametetea pombe kwa faida zake za kiafya na hivi karibuni kwa ajili ya uwezo wake wa kulinda watumiaji dhidi ya ugonjwa wa moyo. Kuna ushahidi wa faida kwa mishipa ya moyo inayotokana na kutumia kinywaji kimoja hadi viwili kwa siku, hata hivyo, faida za kiafya kutokana na unywaji pombe kwa wastani ni swali lenye utata. Shauku zimetolewa kuwa sawa na ilivyo katika sekta za dawa, wadau wa sekta ya pombe pia wamehusika katika kutilia chumvi faida za kiafya za pombe. Pombe inapaswa kuonekana kama dawa ya burudani yenye uwezo mkubwa wa kusababisha athari mbaya kwa afya na haipendekezwi kwa ulinzi wa moyo badala ya mbinu nyinginezo za salama na zilizothibitika za jadi kama vile lishe bora mazoezi na tiba.

Baadhi ya wataalamu wanadai kuwa faida za matumizi ya pombe ya wastani zinaweza kupitwa na ongezeko la hatari ikiwa ni pamoja na majeraha, vurugu, uharibifu wa mimba, aina fulani za saratani, ugonjwa wa kongosho na presha. Kwa vile faida bainifu za kiafya za matumizi ya pombe ya wastani ni ndogo kwa watu walio katika hatari ndogo ya kupata maradhi ya moyo, wataalamu wengine wanatahadharisha itumike kwa tahadhari kwa sababu ya uwezekano kwamba kupendekeza matumizi ya wastani ya pombe kunaweza kusababisha ongezeko la hatari ya matumizi mabaya ya pombe, hasa miongoni mwa vijana.

Madhara mabaya ya matumizi ya pombe kwa muda mrefu kupita kiasi ni sawa na yale yanaoonekana katika vitulizi-hipnoti vingine (mbali na sumu kwa viungo ambayo hutatiza zaidi katika pombe). Athari za kujiondoa katika pombe na utegemezi hukaribia sana kufanana. Pombe cha kiwango wastani ina athari chanya na hasi kwa afya. Athari hasi ni pamoja na ongezeko la hatari ya magonjwa ya ini, saratani ya orofarinji, kansa ya umio na magonjwa wa kongosho. Kinyume na hayo, unywaji wastani wa pombe unaweza kuwa na athari za faida kwa gastritis na kolelithiasi. Matumizi sugu na mabaya ya pombe huwa na athari kubwa kwa afya mwili na akili. Unywaji sugu wa pombe kupita kiasi au utegemezi pombe, unaweza kusababisha uharibufu mpana wa viungo mbalimbali vya neva za ubongo, mfumo wa neva ugonjwa wa mishipa ya moyo, maradhi ya ini, na neoplamsi isiyopona.

Matatizo ya akili ambayo huhusishwa na ulevi ni pamoja na mfadhailo mkubwa, disthimia, mania, hipomania, tatizo la hofu, tatizo la wasiwasi wa kijumla, tatizo la tabia za mtu, skizofrenia, kujinyoga, upungufu wa mfumo wa utendekazi mwilini (kwa mfano kazi za kumbukumbu, hisia, kazi za uamuzi, uwezo wa kuona, mwendo na uwiano) na uharibufu wa ubongo, utegemezi wa pombe ni huhusishwa na shinikizo la damu, ugonjwa wa moyo na kiharusi cha iskemi, kansa ya mfumo wa upumuaji, mbali pia na saratani ya mfumo wa mlo, ini, kifua na ovari.

Unywaji kupita kiasi huhusishwa na ugonjwa wa ini, kama vile sairosi. Tafiti zimelenga wanaume na wanawake, vikundi vya umri mbalimbali na watu wa makundi mengi ya kijamii. Machapisho kwa sasa yanafikia jumla ya mamia huku tafiti zikiweza kuonyesha uwiano uliopo kati ya matumizi wastani ya pombe na afya ambayo labda yanaweza kuwa yalitokana na athari za manufaa ya maingiliano ya kijamii ambayo mara nyingi huambatana na matumizi ya pombe. Baadhi ya njia mahususi ambapo pombe huweza kuathiri afya mishipa ya moyo zimetafitiwa.

Maswali

a. Yape makala haya mada faafu. **(alm1)**

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b. Eleza madhara yanayotokana na uharibifu wa mfumo mkuu wa neva za pembeni **(alm2)**

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c. Eleza faida za matumizi ya pombe kwa mujibu wa kufungu. **(alm3)**

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d. Mwandishi anapendekeza vipi kwa matumizi ya pombe ya kiwango cha wastani**?** **(alm3)**

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e. Matumizi sugu yana malipo yapi kulingana na madaktari. **(alm3)**

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f. Tafiti zilizofanywa zililenga jinsia ya kiume pekee. Thibitisha. **(alm1)**

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g. Eleza maana ya misamiati hii kulingana na taarifa **(alm2)**

(i) wadau

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(ii)aliyebaleghe

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SEHEMU B

UFUPISHO(alama15)

Soma makala yafuatayo kasha ujibu maswali yafuatayo

Lugha ndio msingi wa maandishi yote. Bila lugha hakuna maandishi. Kila jambo tufanyalo kuhusiana na lugha husitawisha ufahamu wetu wa mambo tusomayo. Mazoezi katika kuandika husitawisha ufahamu katika kusoma kwa sababu katika kuandika ni lazima kuyatumia maneno vizuri kuzungumuza na kuwasikiliza wengine wakizumgumuza. Lugha tusomayo ni anina ya lugha ya masungumuzo.

Kuna ujuzi mwingi katika kuzungumuza kama vile michezo ya kuigiza, hotuba, majadiliano na mazungumuzo katika darasa. Haya yote husaidia katika uhodari wa matumizi ya lugha. Ujuzi wa kila siku utasaidika katika maendeleo ya kusoma na usitawi wa msamiati. Ikiwa mwanafunzi amemwona ndovu hasa, atakuwa amejua maana ya neno ndovu vizuri zaidi kuliko mwanafunzi ambaye hajawahi kumwona ndovu bali ameelezwa tu vile alivyo. Vilevile ujuzi wa kujionea sinema au michoro husaidia sana katika yaliyoandikwa. Ikiwa mwanafunzi ana huzuni au ana furaha, akiwa mgonjwa au amechoka an amefiwa, haya yote ni ujuzi . Wakati mwanafunzi asomapo juu ya mtu ambaye amepatikana na mambo kama hayo hana budi kufahamu zaidi.

Karibu elimu yote ulimwenguni huwa imeandikwa vitabuni. Hata hivyo, lugha zote hazina usitawi sawa kuhusu fasihi. Kwa bahati mbaya lugha nyingine hazijastawi sana na hazina vitabu vingi. Fauka ya hayp, karibu mambo yote yanayohusiana na elimu huweza kupatikana katika vitabu kwenye lugha nyingine.

Inabidi mwanafunzi asome vitabu au majarida juu ya sayansi au siasa au historia, lakini haimbidi kusoma tu juu taaluma fulani anayojifunza. Inafaa asome juu ya michezo, mambo, ya mashairi na juu ya mahali mbalimbali ili kupata ujuzi wa mambo mengi.

a) Fupisha aya za kwanza mbili kwa kutumia maneno 65 (alama 10, 1 ya utiririko)

Matayarisho

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Nakala Safi

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b) Kwa kuzingatisha habari zote muhimu na bila kupoteza maana asilia, fupisha aya ya mwisho

(Maneno 30) (alama 5 , 1 ya utiririko)

Matayarisho

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Nakala Safi

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SEHEMU C: MATUMIZI YA LUGHA NA SARUFI (alm40)

(A) Andika sauti yenye sifa zifuatazo

(I) Sauti mwambatano ya midomo **(alm2)**

……

……

(II) Andika neno lenye muundo ufuatao **(alm2)**

Konsonanti+konsonanti+nusu irabu +konsonanti+irabu

……

……

B) Bainisha vishazi katika sentensi **(alm2)**

Mwanafunzi huyo angelisoma sana, angelifaulu katika mtihani.

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C) Tunga sentensi yenye muundo huu: **(alm2)**

Nomino ya wingi, kivumishi kiradidi, kitenzi kishirikishi kikamilifu, chagizo cha Mahali

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D) Tunga sentensi ukitumia neno ‘zawadi’ kama kitenzi **(alm2)**

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E) Andika upya katika wakati ujao hali ya mazoea **(alm2)**

Wachezaji hodari wanafanya mazoezi uwanjani.

……

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F) Taja vigezo viwili vya kuanisha viambishi **(alm2)**

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G) Changanua sentensi hii kwa kielelezo cha mstari

Gazeti hilo litasomwa na mwanafunzi **(alm2)**

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H)Ainisha viambishi **(alm2)**

Wasoila

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I)Tunga sentensi yenye vijenzi hivi **(alm1)**

KN(RH+ S)+KT(t+V)

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J) Eleza matumizi ya ‘A’ anganifu katika sentensi **(Alm3)**

(I) Mlango wa chuma umenunuliwa.

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(II) Msumeno wa kukatia ubao ni huu.

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(III) Mwimbaji wa kwanza yu jukwaani sasa.

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K)Andika katika udogo

Kiti hiki cha mwanamke huyu kimevunjika **(alm2)**

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L) Eleza matumizi ya koloni na koma katika sentensi **(alm1)**

Nyanya alinunua vitu hivi: pilipili, parachichi, pipi na papai.

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M) Geuza katika hali ya wingi

Seremala aliunda kasha kwa ubao na kumpa mtume **(alm2)**

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N) Taja dhana za kimaana mbili zilizo katika sentensi **(alm1)**

Ningekuwa na hela ningenunua shamba.

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O) Tunga sentensi venye kishazi tegemezi ambacho ni**;** **(alm2)**

(I) Kielezi cha namna

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……

ii) Kielelezi cha Mahali

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(P) Ainisha sentensi hii kwa kuzingatia dhamira **(alm1)**

Komesha mchezo huu kuanzia leo!

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(Q) Onyesha kwa kutoa mifano miundo miwili ya nomino katika ngeli ya U-_Zi **(alm2)**

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(R) Ainisha yambwa katika sentensi hii

Yaya alitumia kijiko kumpatia mtoto huyo mdogo chakula kitamu **(alm3)**

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(S) Andika kitenzi katika kauli ulizopewa kisha ukitungie sentensi **(alm2)**

(i) Kauli tendata

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……

(ii) Kauli tendama

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(T) Eleza maana mbili katika utungo huu **(alm2)**

Fundi alimkatia Makaa utepe huo.

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SEHEMU D: ISIMU JAMII (alm10)

Soma makala haya kisha ujibu maswali;

Rafiki yako amezongwa na mambo magumu na anafikiria suluhu ni kujiua umepewa jukumu la kumshauri.

(a) Utatumia Lugha ya sajili gani**?** **(Alm2)**

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b)Fafanua sifa nane za kimtindo utakazomatumia ili kufanikisha mazungumuzo yako **(alm8)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

JINA: ……

SHULE: …….

NAMBARI YA USAJILI: ……..…. SAHIHI: ……..……..… TAREHE: ……..……..

KISWAHILI
KIDATO CHA NNE

KARATASI YA TATU

MUDA: SAA 2:30

MAAGIZO;

1.JIBU MAWSALI MANNE

2.SWALI LA KWANZA NI LA LAZIMA

3.USIJIBU MASWALI MAWILI KATIKA SEHEMU MOJA

4.KILA SWALI LINA ALAMA 20.

SEHEMU YA A

SWALI LA KWANZA

Soma shairi lifuatalo kisha jibu maswali yanayofuatia.

Tusitake kusimama, bila kwanza kutambaa

Au dede kuwa hima , kabula hatujakaa

Tutakapo kuchutama, kuinama inafaa

Tujihimu kujinyima, makubwa kutoyavaa

Tusitake kuenenda , guu lisipokomaa

Tujizonge na mikanda, inapochangiza njaa

Na mazuri tukipenda , ni lazima kuyandaa

Tujiase kujipinda , kujiepusha na balaa.

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Tusitake uvulana , au sifa kuzagaa

Tukishikiye nyonga sana, tunuiyapo kupaa

Kama uwezo hapana , tutolee dagaa

Tujiase hicho kina, maji yanapojaa

Tusitake vya wenzetu ,walochuma kwa hadaa

Wanaofyatua vitu, na kisha vikasambaa

Uwezo hatuna katu, umaskini fazaa

Tujihimu kula vyetu, siendekeza tamaa.

Mtaka kuiga watu , hufata kubwa rubaa

Vyao vijalie kwetu , vifaa vingi vifaa

Tunamezwa na machatu, tusibakishwe dhiraa

Tujihimu kilo chetu, hata kama twapagaa.

Maswali;

a)Tambua mkondo wa shairi hili**.** **(alm2)**

b)Tambua bahari ya shairi kwa kuzingatia ;

i)vina

ii)mishororo

iii) Vipande kaitika kila mshororo**.** **(alm6)**

c)Ni nini dhamira ya shairi hili**.** **(alm2)**

d)Thibitisha shairi hili ni la kiarudhi**.** **(alm4)**

e) Kwa kutolea ithibati ni ni uhuru gani wa ushairi uliotumika katika shairi hili. **(alm4)**

f) Eleza dhima urudiaji katika shairi hili**.** **(alm2)**

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SEHEMU YA B RIWAYA:

CHOZI LA HERI NA ASSUMPTA MATEI

Jibu swali la 2 au la 3.

2 a)… haya imekuandama tangu usiku ukimtongoza fulani; siku za kuchora ramani ya Afrika kwa vyanda vya miguu hadi sasa? Ama ni hizo mvi unaficha ? Nasikia ile ***mid-life crisis*** ikawashika wazee ndiyo hivyo;

i)Weka dondoo hili kwenye muktadha wake. **(alm4)**

ii) Tambua mbinu zozote tatu za kimtindo kwenye dondoo hili**.** **(alm4)**

iii) Jadili sifa zozote sita za msemewa katika dondoo hili**.** **(alm6)**

b) Sauna amechangia vipi katika kuendeleza ploti katika Riwaya ya Chozi la Heri**.** **(Alm6)**

3.Tambua mandhari yoyote manne na umuhimu wake katika Riwaya ya chozi la Heri. **(alm20)**

SEHEMU YA C:

TAMTHILIA YA BEMBEA YA MAISHA

Jibu swali la 4 au la 5.

04. Basi tu! Wenzenu ndio walioniingiza kwenye mkondo huu. Kama unakumbuka nilikuwa miongoni mwa vijana kwanza kuingia kwenye dini. Hata tulikuwa tunahubiri.

a) Fafanua muktadha wa dondoo hili. **(alm4)**

b) Tambua kwa kutolea mfano wa toni inayojitokeza katika muktadha huu. **(alm2)**

c) Kwa kurejelea mifano mbalimbali eleza madhara au matokeo ya maneno ya yaliyopigiwa mstari katika tamthilia hii kwa jamii husika **(alm14)**

05. Eleza namna wahusika mbalimbali wanakabiliana na changamoto zinazowakumba katika tamthilia ya Bembea ya Maisha **(alm20)**

SEHEMU YA D. HADITHI FUPI
MAPAMBAZUKO YA MACHWEO

Jibu swali la 6 au la 7.

06. "tafadhali nisamehe...ni barua ilinikawiza..."

a) Eleza muktadha wa dondoo hii. **(alm4)**

b) Tambua kipengele kimoja cha kifani kilichotumiwa katika dondoo hili. **(alm2)**

c) Eleza barua hii na matokeo yake. **(alm6)**

d) Jadili dhima ya msemaji katika kuendeleza maudhui ya hadithi. **(alm8)**

07. Kwa kurejelea hadithi ya Ahadi ni Deni, fafanua namna Uwajibikaji umejitokeza. (**alm20)**

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SEHEMU YA E. FASIHI SIMULIZI

08 a)Ulumbi ni nini? **(alm2)**

b) Eleza sifa za mlumbi **(alm6)**

c) Fafanua aina zozote sita za wahusika katika Fasihi Simulizi. **(alm6)**

d) Taja mambo ambayo huzingatiwa kufanikisha uwasilishaji wa ngano katika Fasihi Simulizi. **(alm6)**

MWISHO

EXCELLING STUDENTS FORM FOUR MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……. SIGN: ……..……..… DATE: …….……..

ISLAMIC RELIGIOUS EDUCATION

PAPER 2 (314/2)

FORM FOUR (4)

Time: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES:

- Write your name and index number on the answer sheets given
- This paper consist of six questions.
- Answer any five questions.
- This paper consist of two printed pagers.
- Candidates should check the paper to ascertain that all pages are printed and no questions are missing.
- Candidates should answer the questions in English.

1. (a). Discuss the measures put by Islam to guard the society against zinaa. **(10mks)**

(b) State the manners of visiting the toilet according to Islam. (**5mks)**

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(c) What is the rationale for the prohibition of *Israf*? **(5mks)**

2. (a) State the conditions for *nikah*. **(5mks)**

(b) Identify reasons that may force a husband and wife to divorce each other **(7mks)**

(c) Explain the different types of eddat in Islam **(8mks)**

3. (a) Identify **five** illegal ways of earning money according to Islam. **(5mks).**

(b) Give the conditions that an agreement has to fulfill for it to be binding to two Parties according to Islam. **(8mks)**

(c) Describe the Islamic teachings on co-existence with non-Muslims. **(7mks)**

4.(a) Explain **five** challenges Kenyan Muslims face in education. **(10mks)**

(b) Give reasons why Sayyidina Uthman Ibn Affan was elected Caliph **(5mks)**

(c) Mention **five** contributions of Caliph Umar bin Khattab to the development of Islam**.** **(5mks)**

5. (a) Mention the contribution made by the Abbasids to education. **(6mks).**

(b) Explain ways through which Prophet Muhammad (p.b.u.h) eliminated racism. **(7mks)**

(c) Discuss the factors that led to the fall of the Ummayads **(7mks)**

6.(a) Discuss four ways in which Islamic culture has influenced the Kenya society**.** **(8mks)**

(b) State Ibn Khaldun's views in education. **(7mks)**

(c) Identify five contributions of Ibn Sina to medicine. **(5mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……

ADM NO: ……..……. SIGN: ……..…… DATE: ……..……..

MATHEMATICS (121/1)

PAPER 1

FORM FOUR (4)

Time: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES

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

(b) *Write your school name, sign and write the date of the examination in the spaces provided above.*

(c) *This paper consists of **Two** sections: **Section I** and **Section II***

(d) *Answer **ALL** questions in Section I and **any five questions** from Section II*

(e) *Show all the steps in your calculations, giving your answers at each stage in the spaces provided below each question.*

(f) *Marks may be given for correct working even if the answer is wrong.*

(g) *Non-Programmable silent electronic calculators and KNEC Mathematical Tables may be used.*

(h) *This paper consists of **17** printed pages.*

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

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

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SECTION I

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

SECTION II

								Total		Grand Total	
17	18	19	20	21	22	23	24				

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SECTION I (50 Marks)

*Answer **all** the questions in this section*

1. Without using mathematical tables or a calculator, evaluate: **(3mks)**

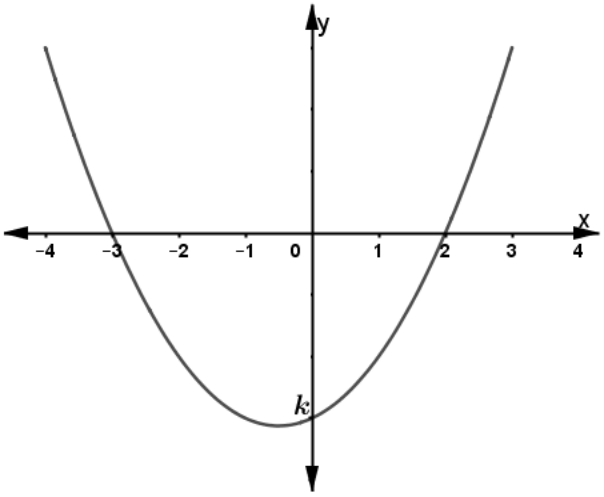
$$\sqrt[3]{\frac{0.4 \times 1.28}{0.0608 + 0.0032}}$$

2. Find the exact value of $2.\dot{3}\dot{4} - 1.\dot{9}\dot{1}$ **(4mks)**

3. The HCF and GCD of three numbers are 7920 and 12 respectively. Two of the numbers are 48 and 264. Using factor notation, find the third number if one of its factors is 3^2. **(3mks)**

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4. The graph below (not drawn to scale) is a plot for the function $y = ax^2 + bx + k$ where a, b and k are constants.



Determine the values of a, b and k. **(3mks)**

5. Three camps, P, Q and R shared 875 bags of beans donated by a charitable organization such that the ratio of P to Q was 2: 3 and that of R to Q was 5: 4. Find the number of bags of beans received by camp Q. **(3mks)**

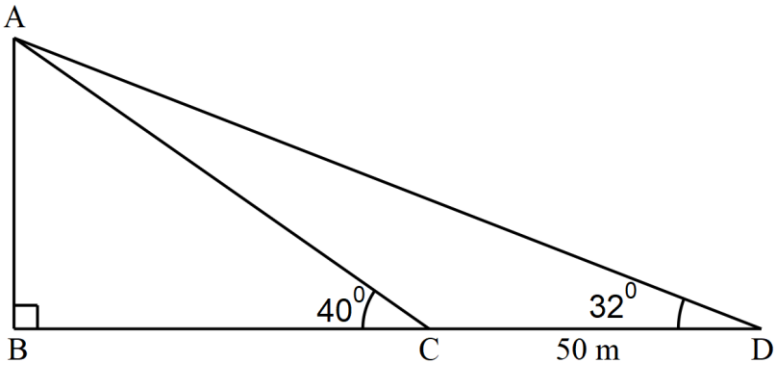
6. Find the number of revolutions made by cylindrical roller of diameter 1.02 m and thickness 1.3 m if it rolls over a surface area of 291.72 m^2. Use $\pi = \frac{22}{7}$ **(3mks)**

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7. Dr. June needs to import a car from Japan that costs US dollars (USD) 5 000 outside Kenya. He intends to buy the car through an agent who deals in Japanese Yen (JPY). The agent charges a 20% commission on the price of the car and a further 80 325 JPY for shipping the car to Kenya. Find the amount in Kenya shillings that Dr. June will need to send to the agent to get the car given that: **(3mks)**

1 USD = Ksh 120
1 USD = 135 JPY

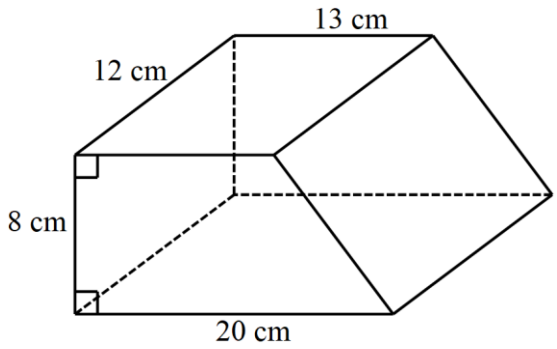
8. The figure below shows a vertical mast AB. The angles of elevation of the top of the mast from two points C and D on the level ground are 40^0 and 32^0 respectively. The distance CD is 50 metres.



Calculate the distance BC, of the tower correct to 1 decimal place **(3mks)**

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9. The figure below shows a solid with the given dimensions.



Calculate the mass of the solid to in kilograms given that its density is 3.5 g/cm^3. **(3mks)**

10. Solve for x in the equation **(3mks)**

$9^{x+1} + 3^{2x} = 810$

11. A lampshade is in the shape of a frustum of a cone such that its slanting height is 30 cm while the top and bottom radii of the lampshade are 10 cm and 17.5 cm respectively. Calculate the surface area of the material used to make the lampshade. **(4mks)**

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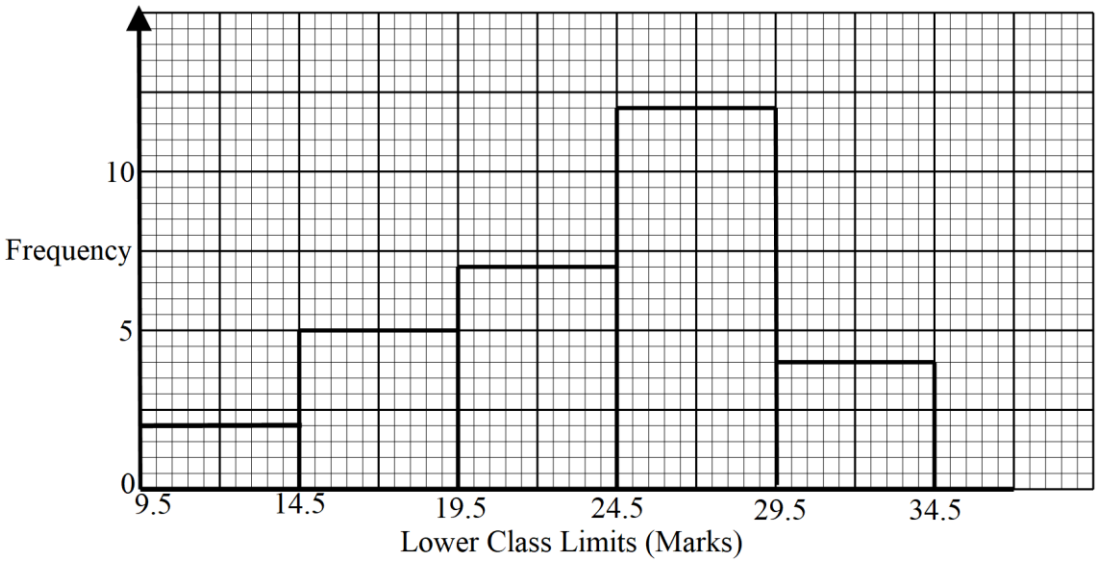
12. (a) Find the range of values of x which satisfies the following inequalities simultaneously **(2mks)**

$4x - 9 \leq x + 6$

$4 + x \geq 8 - 3x$

(b) Represent the range of values of x in (a) above on a number line. **(1mk)**

13. The graph below is a histogram showing the marks scored by students in a Mathematics contest.



Prepare a frequency distribution table for the above data, hence determine the total number of students who did the contest. **(3mks)**

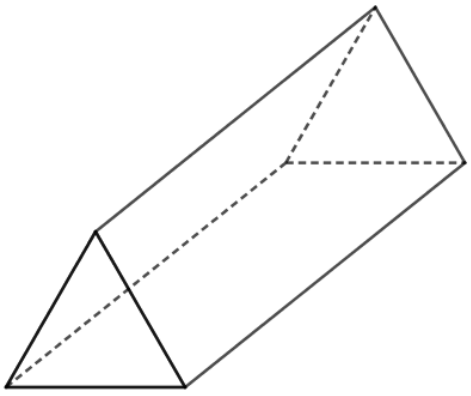
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14. Use logarithms only to evaluate **(4mks)**

$$\left(\frac{7.089 \times 124.5}{(86.73)^2}\right)^{\frac{1}{3}}$$

15. A sales lady earns a basic salary of Ksh 12 400 per month. In addition, she gets a 2% commission on the first Ksh 80 000 worth of good and a further 3% commission on goods worth over Ksh 80 000. In a certain month, she earned a total of Ksh 20 000. Calculate the value of the goods sold that month. **(3mks)**

16. The figure below shows a triangular prism whose cross-section is an equilateral triangle



(a) On the prism, show the positions of the lines of symmetry. **(1mk)**

(b) Draw the net of the prism. **(1mk)**

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SECTION II (50 Marks)

Answer any five questions in this section

17. A straight line l_1 has a gradient $-\frac{1}{2}$ and passes through the point $P(-1, 3)$. Another line l_2 passes through the points $Q(1, -3)$ and $R(4, 5)$

Find:

(a) (i) The equation of l_1 in the form $y = mx + c$, where m and c are constants **(2mks)**

(ii) Hence find k given that $S(0, k)$ **(1mk)**

(b) (i) The gradient of l_2 **(1mk)**

(ii) The equation of l_2 in the form $ax + by = c$, where a, b and c are integral values. **(2mks)**

(c) The equation of a line l_3 passing through a point $T(0, 5)$ and perpendicular to l_2. **(3mks)**

(d) Calculate the acute angle that l_3 makes with the x-axis. **(1mk)**

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18. Water flows through a cylindrical pipe of diameter 7 cm at a rate of 15 m per minute.

(a) Calculate the capacity of water delivered by the pipe in one minute in litres. Use $\pi = \frac{22}{7}$. **(3mks)**

(b) A storage tank that has a circular base and depth 12 m is filled with water from this pipe and at the same rate of flow. Water begins flowing into the empty storage tank at 6.30 a.m. and is full at 1310 hours. Calculate the area of the cross-section of this tank in square metres. **(4mks)**

(c) A school consumes the capacity of this tank in one month. The cost of water is Ksh. 100 for every 1 000 litres and a standing charge of Ksh 1 950. Calculate the cost of the school's water bill for one month. **(3mks)**

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19. (a) Find $\mathbf{A^{-1}}$ given that $\mathbf{A} = \begin{pmatrix} 8 & 12 \\ 9 & 15 \end{pmatrix}$ **(1mk)**

(b) An ICT firm bought 8 printers and 12 copiers for a total of Ksh 294 000. Had the firm bought 1 more printer and 3 more copiers, it would have spent Ksh 43 500 more.

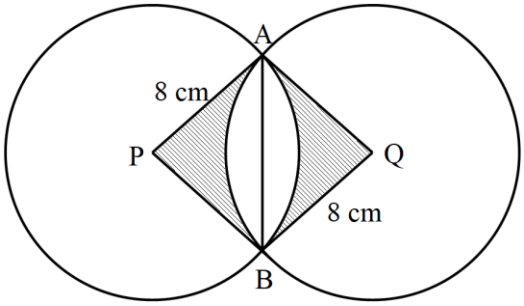
(i) Form two equations to represent the information above. **(2mks)**

(ii) Hence, using $\mathbf{A^{-1}}$ in (a) above, calculate the cost of each item. **(4mks)**

(c) A two-digit number is such the that difference between tens and ones digit is 1. If the digits are reversed, the sum of the two numbers is 165. Find the original number **(3mks)**

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20. Two equal circles with centres P and Q and radius 8 cm intersect at points A and B as shown below.



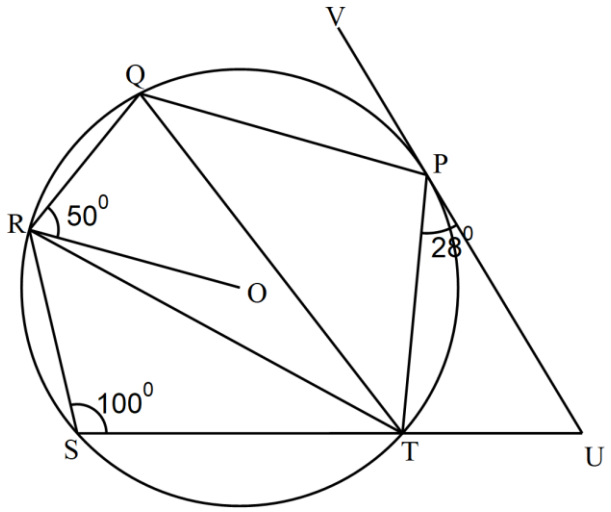
Given that the distance between their centres is 12 cm, find, correct to 4 significant figures;

(a) The length of chord AB **(2mks)**

(b) The area of the shaded region . Use $\pi = 3.142$ **(8mks)**

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21. In the figure below, P, Q, R, S and T lie on the circumference of a circle centre O. Line UPV is a tangent to the circle at P. Chord ST of the circle is produced to intersect with the tangent at U. Angles UPT, RST and ORQ are 28^0, 100^0 and 50^0 respectively.



(a) Determine the sizes of the following angles;

(i) RTP **(3mks)**

(ii) QTP **(3mks)**

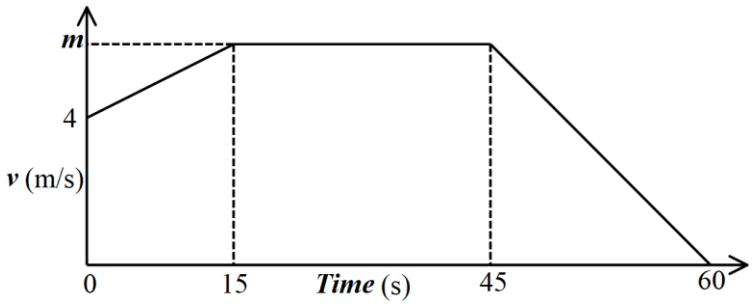
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(b) Given that PQ = 6 cm, calculate correct to 1 decimal place, the radius of the circle. **(4mks)**

22. (a) Two trains, A and B are such that they are 40 m long and 160 m long respectively. Their speeds are 60 km/hr and 40 km/hr respectively. The two trains are 100 m apart and moving towards the same direction in a pair of parallel tracks. Calculate the time in seconds it takes train B to completely overtake train A. **(4mks)**

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(b) The figure below (not drawn to scale) shows a velocity time graph for a robot in a robotic challenge.



(i) If the distance covered by the robot in the first 15 seconds was 180 metres, calculate the value of m **(3mks)**

(ii) Describe the movement of the robot between the 15^{th} and 45^{th} seconds. **(1mk)**

(iii) Calculate the deceleration of the particle in the last 20 seconds. **(2mks)**

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23. A farmer wanted to make a trough for cows to drink water. He had a metal sheet of dimensions 240 cm by 120 cm and 1 cm thick. The density of the metal sheet is 2.5 g/cm^3. A square of sides x cm is removed from each corner of the rectangle and the remaining part folded to form an open cuboid.

(a) Sketch the sheet after removing the squares from the four corners, showing all the dimensions. **(2mks)**

(b) Calculate

(i) the value of x, to the nearest whole number, that maximizes the volume of the cuboid **(5mks)**

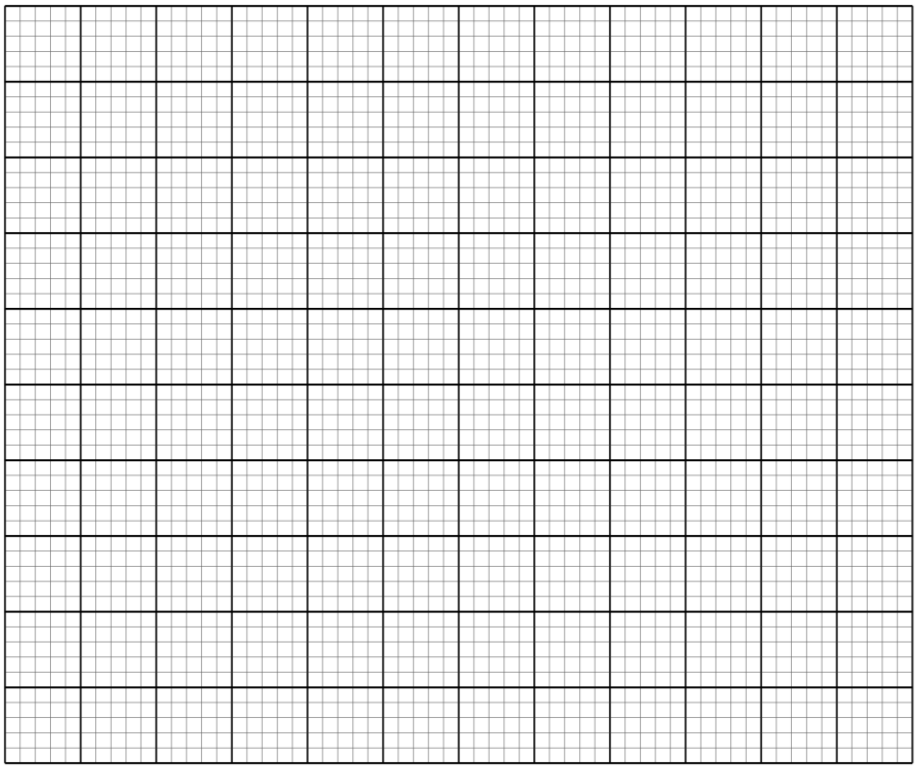
(ii) hence calculate the maximum volume of the box . **(3maks)**

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24. (a) Complete the table below for the curve $y = x^3 - 5x^2 + 2x + 9$ for $-2 \leq x \leq 5$. **(2mks)**

x	-2	-1	0	1	2	3	4	5
y			9					

(b) On the grid provided, draw the graph of $y = x^3 - 5x^2 + 2x + 9$ for $-2 \leq x \leq 5$. **(3mks)**



(c) Use the graph in (b) above to find the roots to the following equations:

(i) $x^3 - 5x^2 + 2x + 9 = 0$ **(2mks)**

(ii) $x^3 - 5x^2 + 6x = -5$ **(3mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……

ADM NO: ……. SIGN: ……..… DATE: ……..

MATHEMATICS (121/2)
PAPER 2
FORM FOUR (4)
Time: 2 ½ Hours

INSTRUCTIONS TO CANDIDATES

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

(l) *Write your school name, sign and write the date of the examination in the spaces provided above.*

(m)*This paper consists of **Two** sections: **Section I** and **Section II***

(n) *Answer **ALL** questions in Section I and **any five questions** from Section II*

(o) *Show all the steps in your calculations, giving your answers at each stage in the spaces provided below each question.*

(p) *Marks may be given for correct working even if the answer is wrong.*

(q) *Non-Programmable silent electronic calculators and KNEC Mathematical Tables may be used.*

(r) *This paper consists of **17** printed pages.*

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

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

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SECTION I

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

SECTION II

17	18	19	20	21	22	23	24	Total		Grand Total	

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SECTION I (50 Marks)

*Answer **all** the questions in this section*

1. Solve for x in the equation below without using a mathematical table or calculator. **(4mks)**

$(\log_{10} x)^2 = 3 - \log_{10} x^2$

2. The base of a right angled triangle is 4.1 cm and the height is 5.0 cm. Calculate the percentage error in the area of the triangle. **(3mks)**

3. Given that $\tan\theta = \frac{1}{\sqrt{5}}$, θ is an acute angle, without using a calculator or mathematical tables, find $\sin(90 - \theta)$, leaving your answer in simplified surd form. (2 marks)

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4.Find the interest on Ksh. 200,000 for 2 years at 14% per annum compounded semi-annually. **(3mks)**

5.Make v the subject of the formula **(3mks)**

$$S = \frac{dv}{\sqrt{cv^2 - f}}$$

6. A coffee trader buys two grades of coffee at Kshs. 80 and Kshs. 100 per packet. Find the ratio in which she should mix the two brands so that by selling the mixture at Kshs. 120 per packet, a 25% profit realized? **(3mks)**

7. A bakery prepares cakes for sale. It has 80 eggs and 10 cups of sugar for use. It bakes two cake types: P and Q. Type P cake requires 6 eggs and 2 cups of sugar while type Q cake requires 12 eggs and three-quarters cup of sugar. By letting type P cakes to be x and type Q cakes to be y, form all the inequalities that represent the above information. **(3mks)**

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8. Find the radius and the centre of a circle whose equation is given by $3x^2 + 3y^2 + 6x - 12y - 12 = 0$. **(3mks)**

9. The equation of a trigonometric function is $y = 2\cos(bx - 60)^0$. The period of the function is 120^0.

(a) Determine the value of b **(1mk)**

(b) Deduce the phase angle of the function. **(1mk)**

10. A point R is 2100 nautical miles to the east of another point Q (60^0N, 0^0), find the position of P. **(3mks)**

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11. An arithmetic progression is such that its first term is 200 and common difference 500. Given that $S_n = 80{,}100$, find the value of n **(4mks)**

12. (a) Expand $(3 + x)^5$ in ascending powers of x up to the term in x^3. **(1mk)**

(b) Use the expansion in (a) above to approximate the value of $\left(3\frac{1}{50}\right)^5$ correct to 4 decimal places. **(2mks)**

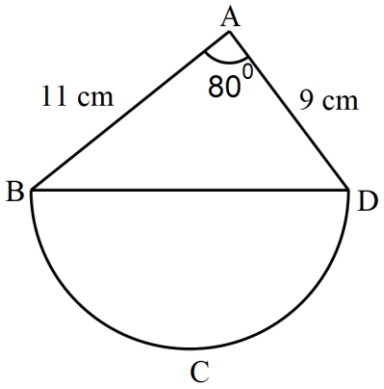
13. **P** varies as the cube of **Q** and inversely as the square root of **R**. If **Q** is reduced by 20% and **R** increased by 21%, find the percentage change in **P**. **(3mks)**

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14. Use tables of squares, reciprocals and square roots only to evaluate **(4mks)**

$$\frac{1}{2.345^2} + \sqrt{0.6789}$$

15. In the figure below, AD = 9 cm, AB = 11cm and angle BAD = 80^0. BD is the diameter of the semi-circle BCD.



Calculate the area of the semi-circle, correct to 2 decimal places. Use π = 3.142 **(4mks)**

16. Two regular polygons have sides n and $n + 3$. Given that the ratio of the sum of their interior angles is 1: 2, calculate the value of n. **(3mks)**

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SECTION II (50 Marks)

*Answer any **five** question in this section*

17. The table below shows income tax rates in a certain year.

Taxable Income (Ksh per month)	Tax Rate (%)
0 – 13 450	10
13 451 – 26 350	15
26 351 – 39 250	20
39 251 – 52 150	25
52 151 and above	30

In that year, the monthly earnings for Amilo were as follows: basic salary Ksh 35 500, house allowance – Ksh 12 600 and other allowances that amount to Ksh. 5 872 were exempted from taxation.
Amilo contributes 12.5% of her basic salary to a pension scheme. She is entitled to a personal tax relief of Ksh 1 845 per month.

Calculate:

(a) Amilo's taxable income in Ksh per month. **(2mks)**

(b) Amilo's P.A.Y.E that month. **(5mks)**

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(c) Amilo's net pay that month, given that the following are deducted monthly from her salary; NHIF – Ksh 1 000, Union dues – Kshs 455 and BBF – Ksh 200. **(3mks)**

18. A mode is in the shape of a polygon with vertices A, B, C, D and E such that; AB=4.4 cm, AE=10 cm, ED=5.2 cm and BC=7.9 cm. The bearing of B from A is 030^0 and A is due east of E, while D is due north of E and angle EDC=120^0

(a) Using a ruler and a pair of compasses only,

(i) Construct the accurate plan of the model. **(4mks)**

(ii) Measure DC. **(1mk)**

(b) A foundation plaque is to be placed closer to CD than CB, nearer to D than to E and not more than 6 cm from A.

(i) Construct the locus of points equidistant from CB and CD. **(1mk)**

(ii) Construct the locus of points equidistant from E and D. **(1mk)**

(iii) Construct the locus of points 6 cm from A. **(1mk)**

(c) Shade and label as R, the region within which the foundation plaque could be placed in the garden. **(2mks)**

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19. The probability that it rains on a certain day is 0.8. If it rains the probability that a school bus will be stuck in a traffic jam is 0.7 but otherwise it is 0.4. If the bus is stuck in the jam, the probability that students using it to school will arrive late is 0.6, otherwise the probability of students using the bus to arrive late is 0.3.

(a) Draw a tree diagram to represent this information. Use the letters R, J and L to represent the events of rain, jam and late respectively **(2mks)**

(b) Determine:

(i) The probability that it rains, the bus isn't held in the jam but the students arrive late in school. **(1mk)**

(ii) The probability that students arrive in school on time. **(3mks)**

(iii) The probability that the students arrive in school late. **(2mks)**

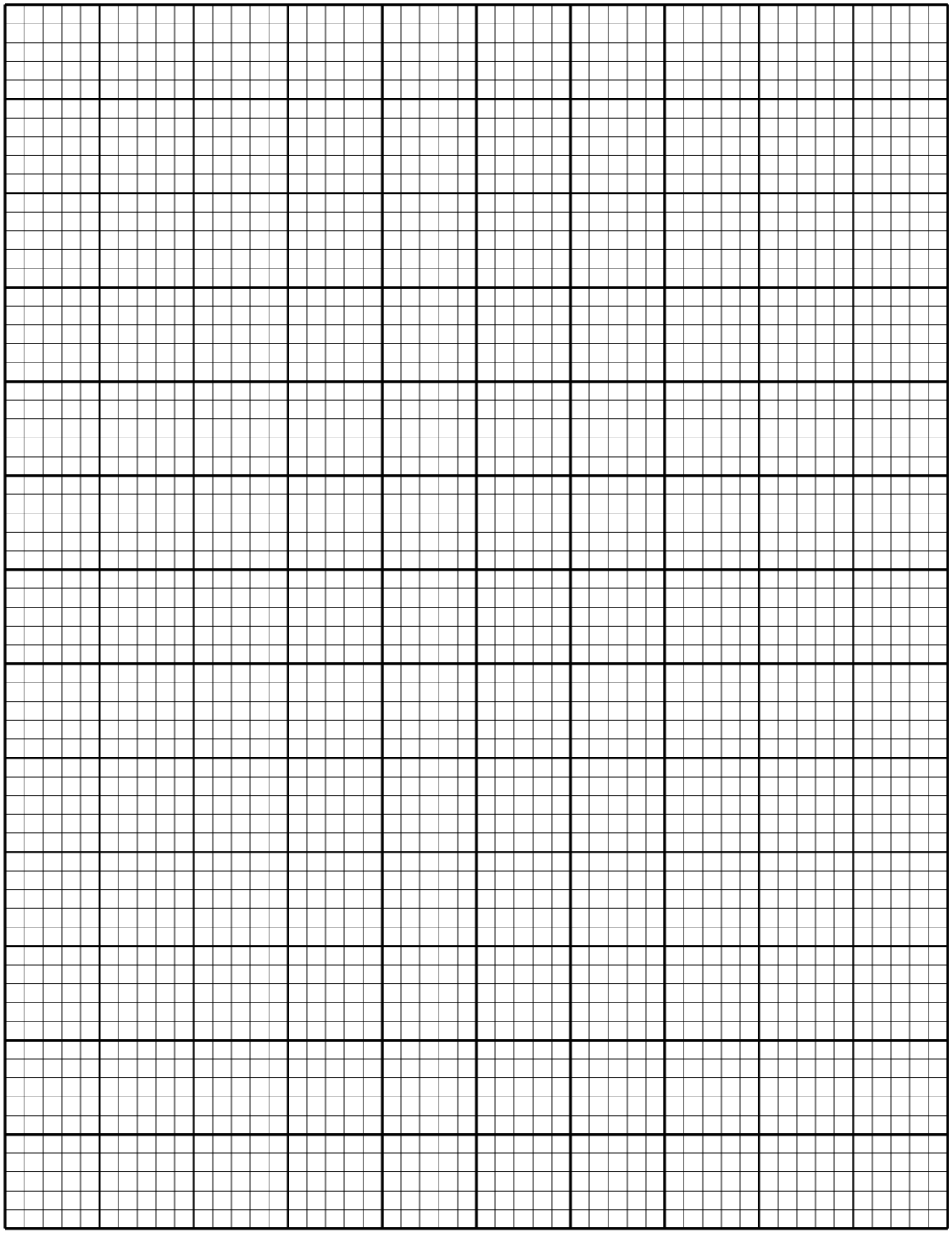
(iv) The probability that the bus is held in the jam. **(2mks)**

20. The vertices of a triangle ABC are $P'(-1,1)$, $B'(-5,4)$ and $C'(-1,2)$ under a transformation whose matrix is $\begin{pmatrix} -2 & 1 \\ 1 & 0 \end{pmatrix}$

(a) Find the coordinates of ABC **(3mks)**

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(b) On the grid provided, draw triangles ABC and $A'B'C'$. **(2mks)**



(c) Triangle $A''B''C''$ is the image of triangle $A'B'C'$ under a transformation represented by the matrix $\begin{pmatrix} -1 & 0 \\ 0 & -2 \end{pmatrix}$

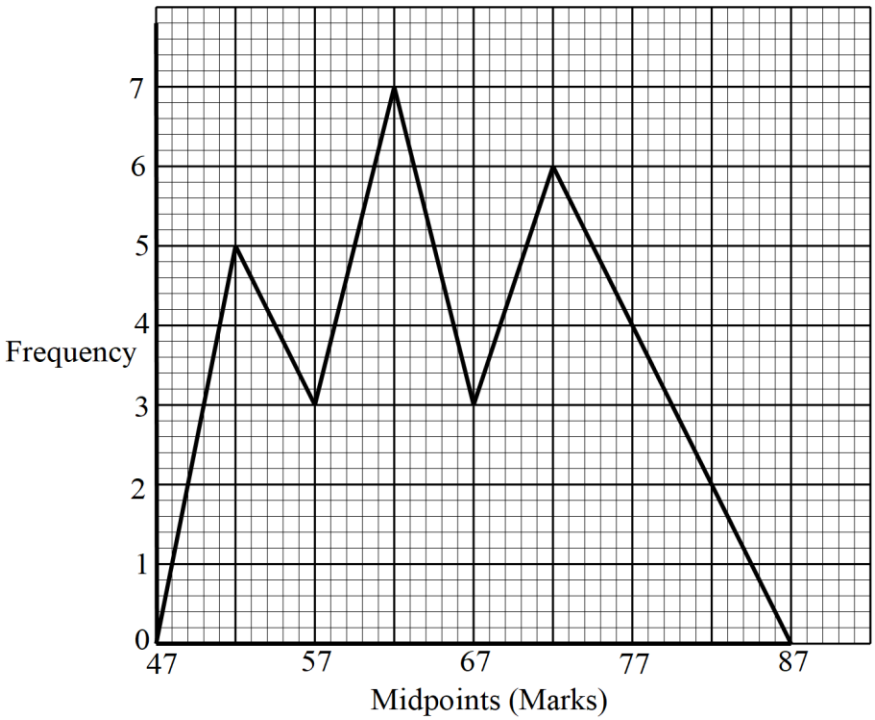
(i) Determine the coordinates of $\Delta A''B''C''$. **(2mks)**

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(ii) On the same grid, draw $\Delta A''B''C''$. **(1mk)**

(d) Another transformation $\boldsymbol{T}$ maps $\Delta A''B''C''$ on to $\Delta A'''B'''C'''$ such that $A'''(-1,-2)$, $B'''(-5,-8)$ and $C'''(-1,-4)$. Describe $\boldsymbol{T}$ fully. **(2mks)**

21. The figure below shows a frequency polygon representing the scores of Form 4 Green students in a History contest.



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(a) Generate the frequency distribution table for the data under the headings given in the table below. **(5mks)**

x	f	$d = \frac{x - 67}{5}$	fd	fd^2
	$\Sigma f =$		$\Sigma fd =$	$\Sigma fd^2 =$

(b) Calculate the standard deviation of the marks. **(3mks)**

(c) The mean weight of 11 babies in a clinic is 4.5 kg. If one more baby comes to the clinic, the total mass of the babies becomes 60 kg. Find the mass of the additional baby. **(2mks)**

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22. In a triangle OAB, $\boldsymbol{OA} = 12\boldsymbol{a}$, and $\boldsymbol{OB} = 12\boldsymbol{b}$. P and Q are points on OA and OB respectively such that $\boldsymbol{3OP} = \boldsymbol{OA}$ and $\boldsymbol{OQ} = \frac{1}{3}\boldsymbol{OB}$. M is the midpoint of AB.

(a) Express the following in terms of $\boldsymbol{a}$ and $\boldsymbol{b}$

(i) $\boldsymbol{OM}$ **(1mk)**

(ii) $\boldsymbol{PM}$ **(1mk)**

(b) $\boldsymbol{OM}$ and $\boldsymbol{BP}$ intersect at R such that $\boldsymbol{PR} = k\boldsymbol{PB}$ and $\boldsymbol{OR} = h\boldsymbol{OM}$.

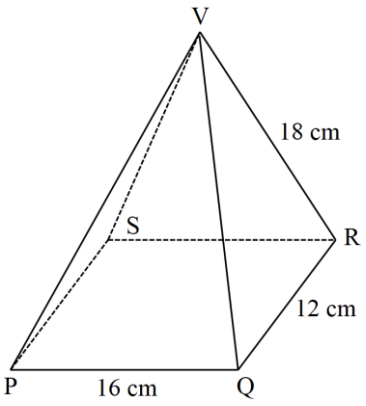
(i) Express $\boldsymbol{PR}$ in two ways **(2mks)**

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(ii) Hence find the values of h and k **(3mks)**

(c) Show that A, R and Q are collinear. **(3mks)**

23. The figure below represents a right pyramid with a vertex V and a rectangular base PQRS. VP=VQ=VR=VS=18 cm. PQ=16 cm and QR=12 cm. M and O are the midpoints of QR and PR respectively.



Calculate, correct to 2 decimal places;

(a) The length of the projection of the line VP on the plane PQRS **(2mks)**

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(b) The angle between the lines VP and the plane PQRS. **(2mks)**

(c) the angle between planes VQR and VPS. **(4mks)**

(d) The angle between the planes VQR and PQRS **(2mks)**

24. Two functions, $x + y = 4$ and $y = x^2 + 2$, intersec at C and D

(a) Determine the coordinates of C and D **(4mks)**

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(b) Using the trapezium rule with 6 trapezia, estimate the area bound by $y = x^2 + 2$, the x-axis and the vertical lines through C and D. **(4mks)**

(c) Find the exact area in (b) above. **(3mks)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……

SHOOOL: ……..……..…

ADM NO: ……. SIGN: ……..… DATE: ……..……..

PHYSICS (232/1)

FORM FOUR (4)

Time: 2 Hours

Instructions to candidates

- This paper consists of two sections ***A*** and ***B***.
- Answer **all** the questions in the two sections in the spaces provided after each question
- All working **must** be clearly shown.
- Electronic calculators, mathematical tables may be used.
- All numerical answers **should be expressed** in the **decimal** notations.
- You may use 'g' as $10m/s^2$

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SECTION	QUESTION	MAX MARKS	ANDIDATE'S SCO
A	1 – 13	25	
	14	13	
	15	13	
	16	14	
	17	07	
	18	08	
	TOTAL	80	

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SECTION A (25 MARKS)

1. Figure 1, shows a Vernier caliper of zero error 0.02 cm being used for measuring the diameter of a cylindrical container of height 10 cm. The scale reading of the Vernier is as shown alongside.

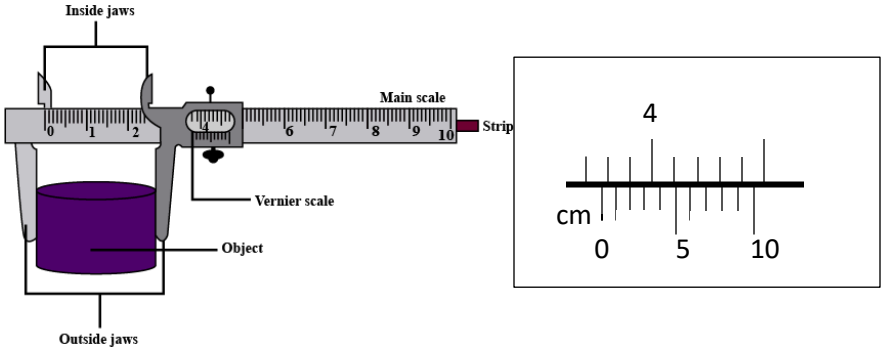


Figure 1

a. Determine the diameter of the container **(2mks)**

b. Estimate the volume of a liquid which can completely fill the container **(2mks)**

2. State **one** factor that affects the turning effect of a force on a body. (1 mark)

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3. **Figure 2** shows some air trapped by mercury in a glass tube. The tube is inverted in a dish containing mercury.

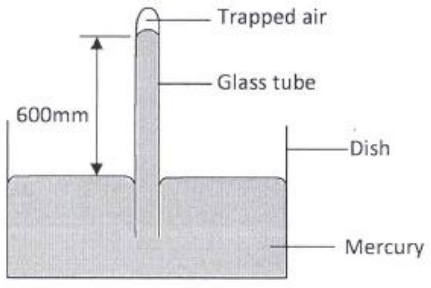


Figure 2

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Given that the atmospheric pressure is 760 mmHg and the height of mercury column in the tube is 600 mm, determine the pressure of the air trapped in the tube in mmHg. **(2mks)**

4.Figure 3 shows drops of mercury and water on a glass surface, Explain the difference in the shapes of the drops. **(2mks)**

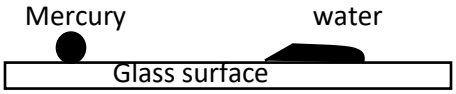


Figure 3

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5. A ball is thrown from the top of a cliff 20m high with a horizontal velocity of $10ms^{-1}$. Calculate the distance from the foot of the cliff to where the ball strikes the ground. **(3mks)**

6. Explain o**n**e advantage of mercury over alcohol as a thermometric liquid. **(1mk)**

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7. A body of mass **M** is allowed to slide down an inclined plane. State **two** factors that affect its final velocity at the bottom of the inclined plane. **(2mks)**

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8. A stopwatch reads 08:10:84 and 09:10: 90 before and after an experiment respectively. Determine the duration of the event in SI units. **(2mks)**

9.Explain the meaning of thermodynamics as a branch of physics. **(1mk)**

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10.

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

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b. Figure 4 shows identical spiral springs supporting a load of 90N. Each spring has a spring constant k = 200N/m

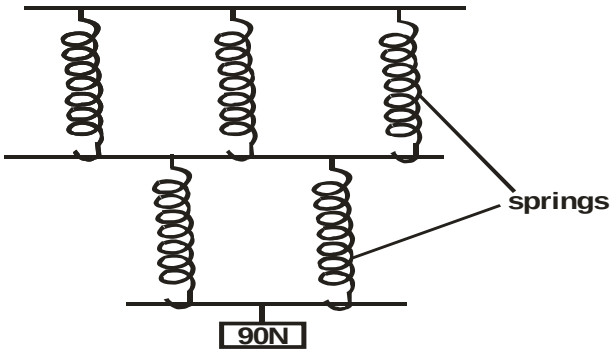


Figure 4

Determine the total extension of the system (take the weight of the cross bars and springs to be negligible) **(2mks)**

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11. Figure 5 shows a rectangular loop with a thin thread loosely tied and dipped into a soap solution.

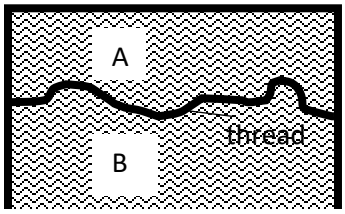


Figure 5

Draw on the space provided what is observed when point **A** is punctured. **(1mk)**

12. Two horizontal strings are attached to a block, resting on a frictionless surface, as shown in figure 6.



Figure 6

A force of 100N pulls on one string. The block does not move. Find the value of the force, F on the other string. **(1mk)**

13. A wooden bench feels neither warm nor cold when touched by your bare hands. Explain this observation. **(2mks)**

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SECTION B (55 MARKS)

14.

a) Explain why bodies in circular motion undergo acceleration even when their speed is constant. **(1mk)**

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b) A particle moving along a circular path of radius 5cm describes an arc of length 2cm every second.

Determine:

i. Its angular velocity. **(1mk)**

ii. Its periodic time. **(2mks)**

c) A stone of mass 150g is tied to the end of a string 80cm long and whirled in a vertical circle at 2rev/s. Determine the maximum tension in the string. **(3mks)**

d) State **one** factor affecting centripetal force **(1mk)**

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e) State the principle of conservation of linear momentum (1 mark)

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f) A bullet of mass 60g is fired horizontally with a velocity of 200 m/s into a suspended stationary wooden block of mass 2940g. Determine:

i. Common velocity of both the bullet and the block, if the bullet embedded into the block. **(2mks)**

ii. Height to which the block rises. **(2mks)**

15.

a) State two factors that affect the boiling point of a liquid **(2mks)**

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b) 100g of a liquid at a temperature of 10^0 C is poured into a well lagged calorimeter. An electric heater rated 50W is used to heat the liquid. The graph in figure 7 shows the variation of the temperature of the liquid with time.

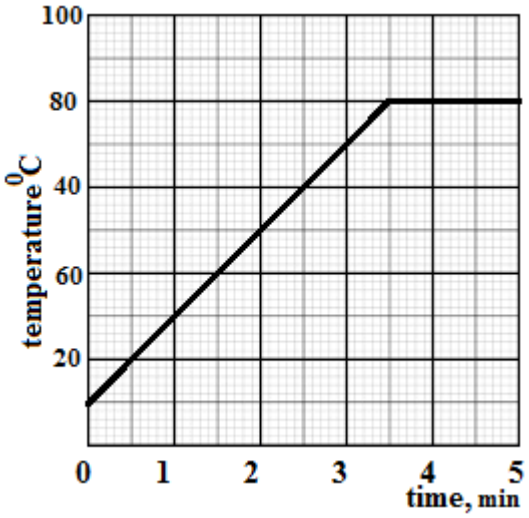


Figure 7

(i) From the graph, determine the boiling point of the liquid **(1mk)**

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(ii) Determine the heat given out the by the heater between the times t = 0.5 minutes and t = 5.0 minutes **(3mks)**

c) From the graph determine the temperature change between the times t = 0.5 minutes and t = 5.0 minutes, hence determine the specific heat capacity of the liquid **(3mks)**

d) 1.8 g of vapor was collected from above the liquid between the times t= 3.5 minutes and t= 4.5 minutes. Determine the specific latent heat of vaporization of the liquid **(4mks)**

16.

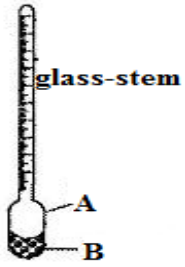
a) State the law of floatation **(1mk)**

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b) Figure 8 below shows a simple hydrometer



A .....

B .....

Figure 8

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i. Identify the parts labelled A and B **(2mks)**

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ii. State the purpose of the part labelled B **(1mk)**

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c) How would the hydrometer be made more sensitive? **(1mk)**

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d) Describe how the hydrometer is calibrated to measure relative density **(3mks)**

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e) Figure 9 shows a cork floating on water and held to the bottom of the beaker by a thin thread.

i. Name the forces acting on the cork **(3mks)**

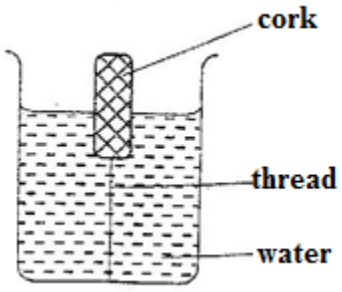


Figure 9

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ii. Describe how each of the forces mentioned in (i) above changes when water is added until the container is completely filled **(3mks)**

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17.

a) Figure 10 shows a graph of pressure against volume for a fixed mass of a gas at constant temperature.

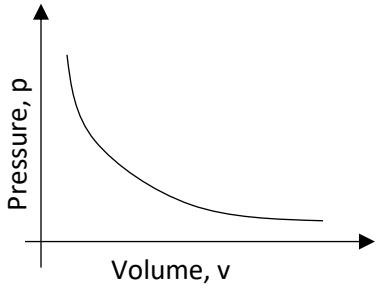


Figure 10

In the space provided, sketch a graph of pressure, p against $\frac{1}{v}$ **(1mk)**

b) Explain the pressure law using the kinetic theory of matter **(3mks)**

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c) $20cm^3$ of a gas exerts a pressure of 760mmHg at 25^0C. Determine the temperature of the gas when the pressure increases to 900mmHg and the volume decreases to 15 cm^3**.** **(3mks)**

18.

a) Define the term velocity ratio of a machine **(1mk)**

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b) The figure 11, below shows part of the hydraulic lift system. State any **one** property of the liquid under which the hydraulic system works **(1mk)**

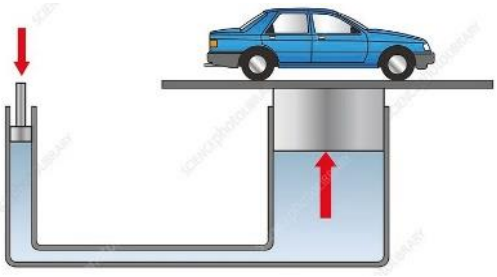


Figure 11

c) The hydraulic lift machine above has velocity ratio 45 and it overcomes a load of 4500 N when an effort of 135 N is applied. Determine:

i. The mechanical advantage of the machine **(2mks)**

ii. Efficiency of the machine **(3mks)**

iii. The percentage of work that goes to waste **(1mk)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..……

SHOOOL: ……..……

ADM NO: ……..……. SIGN: ……..……..… DATE: ……..

PHYSICS (232/2)

FORM FOUR (4)

Time: 2 Hours

Instruction to Candidates

(a) Write your name, index number in the spaces provided above.
(b) Sign and write the date of examination in the spaces provided above.
(c) This paper consists of **two** sections: **A** and **B**.
(d) Answer **all** the questions in sections **A** and **B** in the spaces provided.
(e) **All** working **must** be clearly shown.
(f) Silent non-programmable electronic calculators may be used.
(g) Candidates should answer the questions in English.

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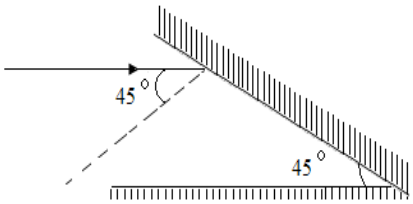
Section	Question	Maximum Score	Candidate's Score
A	1 – 11	25	
	12	12	
	13	12	
	14	12	
	15	9	
	16	10	
Total Score		**80**	

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SECTION A 25 MARKS

Answer all the questions in the spaces provided.

1. The figure below shows a ray of light incident on a mirror at an angle of 45°. Another mirror is placed at an angle of 45° to the first one as shown. Sketch the path of the ray until it emerges. **(2mks)**



2.State any two ways of reducing the magnetic force of attraction of a magnet **(2mks)**

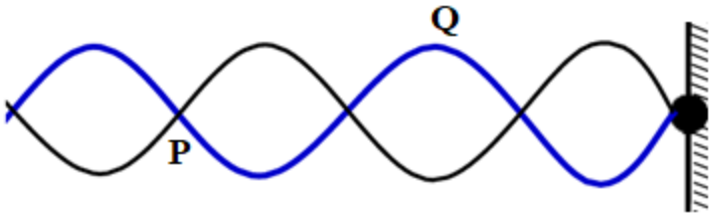
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3. The figure below shows a transverse stationary wave along a string.



Name P and Q and explain how each is formed. **(3mks)**

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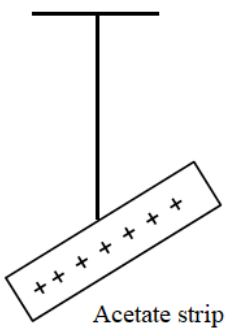
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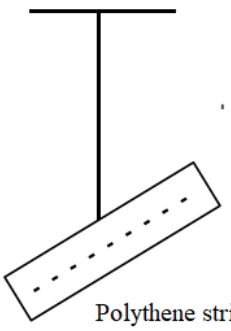
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4. The diagrams below show a positively charged acetate strip and a negatively charged polythene strip freely suspended and isolated.





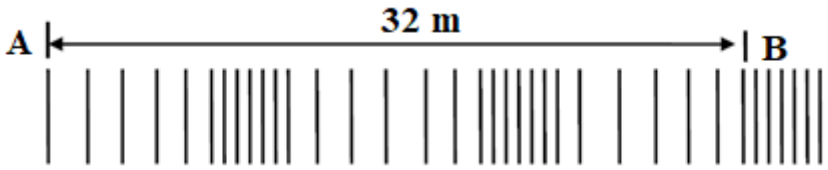
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Two rods X and Y are brought up in turn to these strips. X attracts the acetate strip but repels the polythene strip. Rod Y does not repel either the acetate or the polythene. State the type of charge on each rod.

X ..... **(1mk)**

Y ..... **(1mk)**

5. The diagram below shows waves generated from a tuning fork. If the wave takes 0.1 second to move from point A to B. determine the frequency of the wave. **(4mks)**



6. Name two detectors of microwave **(2mks)**

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7. Other than current state two other factors that affect the magnitude of force on a current carrying conductor placed in a magnetic field. **(2mks)**

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8. Give a reason why a concave mirror is not preferred as a driving mirror**.** **(1mk)**

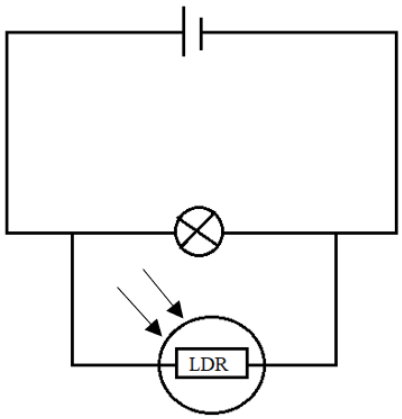
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9. A student connected the set up below in the laboratory. Explain the observation made on the bulb when the set-up below is taken to a dark room **(2mks)**



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10. A person standing 110 m from the foot of a cliff claps his hands and hears a sound 0.75 seconds later. Find the speed of sound in air. **(3mks)**

11. The figure below is part of electromagnetic spectrum.

A		Visible light	UV	

Identify radiation A and state its source. **(2mks)**

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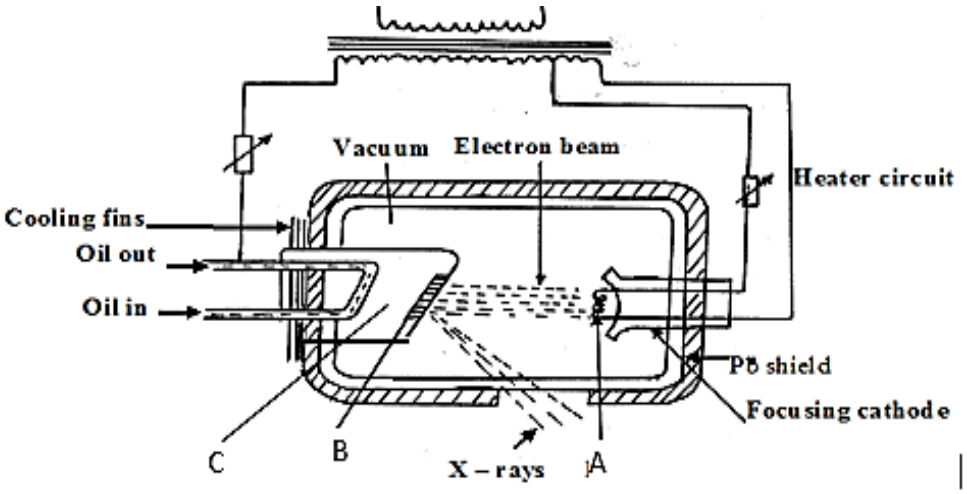
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SECTION B 55 MARKS

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

12. (a) The figure below shows a X-ray tube.



(i) Name the part labelled C **(1mk)**

……..

……..

(ii) State the property of the material labelled B on the diagram which makes it suitable for use in the X-ray tube. **(1mk)**

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(iii) Why is C inclined at an angle of 45^{o}? **(1mk)**

……..

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(iv) State the adjustment that can be made to vary

I. The quality of X-rays **(1mk)**

……..

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II. The quantity of the X-rays. **(1mk)**

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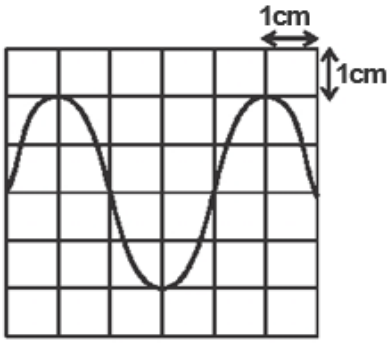
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(v) An x-ray tube has an accelerating potential of 100KV. Determine the maximum frequency of the x-rays produced.*(Plank's constant = 6.63×10^{-34} Js, e = 1.6×10^{-19}C)* **(3mks)**

(b) In a CRO, waveform given below was displayed on the screen when the sensitivity at the Y plate was10V/cm and time base set at 20 milliseconds/cm.



Determine:

(i) peak voltage **(2mks)**

(ii) frequency of the signal **(2mks)**

13. a) $_{88}^{226}Ra$ decays into $_{86}^{222}Rn$ by emission of an alpha particle. Write a nuclear equation for the decay **(1mks)**

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b) i) What do you understand by the term half-life of a radioactive substance? **(1mk)**

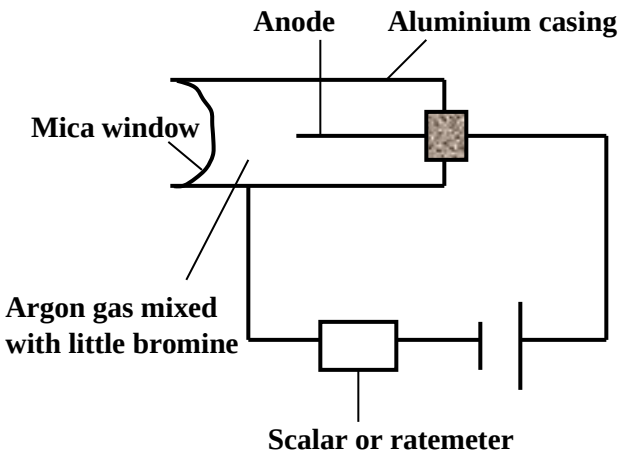
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ii)A G.M tube registers 20 counts. When a radioactive source is brought close to it, it registers 3220 counts and 120 counts 30 hours later. What is the half-life of this substance? **(3mks)**

c) The figure below shows a G.M tube.



i) What is the purpose of the mica window? **(1mk)**

……..

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……..

ii) Explain the purpose of the bromine **(2mks)**

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iii) Why should argon gas be kept at low pressure **(1mk)**

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iv) What is meant by the term "*dead time"* as used in GM tube **(1mk)**

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v) Briefly explain how GM tube works. **(2mks)**

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14. (a) State the Ohm's Law **(1mk)**

.....

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(b) You are provided a rheostat, 2 cells, a voltmeter, an ammeter, a switch and a fixed resistor.

i) Draw a circuit diagram that can be used to verify Ohm's law. **(2mks)**

ii) Describe how the above set up can be used to determine Ohms law. **(4mks)**

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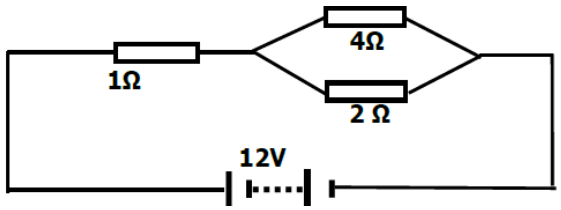
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(c) Study the circuit diagram below and answer the questions that follow.



Calculate

(i) Determine the total resistance in the circuit. **(2mks)**

(ii) The current through the 4Ω resistor **(3mks)**

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

……

……

……

b) A ray of light travelling from water to glass makes an angle of incident of 30^0. Find the angle of refraction in the glass. Refractive index of water $= \frac{4}{3}$. Refractive index of glass $= \frac{3}{2}$ **(3mks)**

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c) State the necessary and sufficient conditions for total internal reflection to occur. **(2mks)**

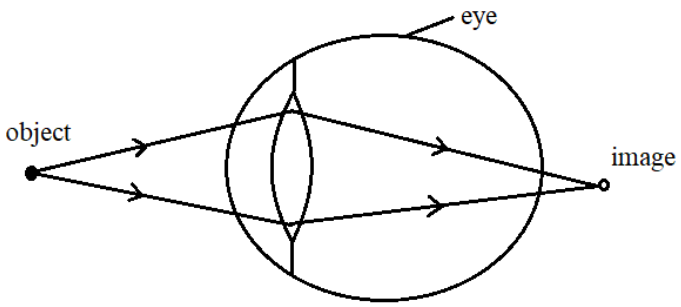
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d) The figure below shows a human eye defect.



(i) State one possible cause of this defect. **(1mk)**

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(ii) On the diagram, show how the defect is corrected. **(2mks)**

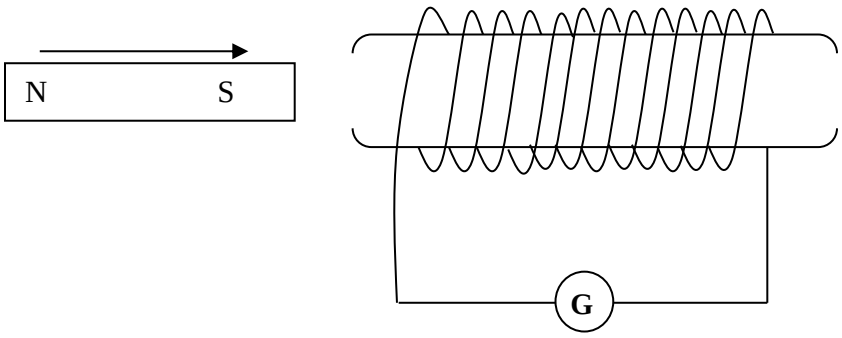
16. (a) State the Lenz's law of electromagnetic induction. **(1mk)**

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(b) A bar magnet is moved into a coil of an insulated copper wire connected to a zero centre galvanometer as shown below



(i) Show on the figure above the direction of the induced current in the coil **(1mk)**

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(ii) State and explain what is observed on the galvanometer when the south pole of the magnet is moved into and then withdrawn from the coil. **(2mks)**

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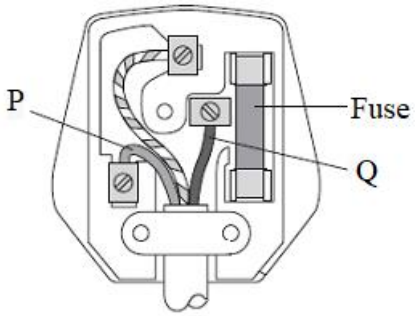
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(c) A transformer has 800 turns in the primary and 40 turns in the secondary winding. The alternating voltage connected to the primary is 240V and current of 0.5.A. If 10% of the power is dissipated as heat within the transformer, determine the current in the secondary coil. **(3mks)**

(d) The diagram below shows a three-pin plug.



(i) Name the colour of conductors P and Q **(2mks)**

……

……

……

(ii) Why is the earth pin longer than the rest in the three-pin plug shown above? **(1mk)**

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EXCELLING STUDENTS FORM FOUR
MOCK SERIES TWO EXAMS

NAME: ……..……

SHOOOL: ……...……

ADM NO: ……..……. SIGN: ……..……..… DATE: ……..

PHYSICS (232/3)

FORM FOUR (4)

Time: $2\frac{1}{2}$ Hours

INSTRUCTIONS:

- Answer all the questions in this paper
- You are supposed to spend the first 15 minutes of the $2\frac{1}{2}$ hours allowed for this paper reading the whole paper carefully before starting your work.
- Marks are given for clear record of the observations made, their suitability and accuracy and the use made of them.
- Candidates are advised to record observations as soon as they are made
- Mathematical table and electronic calculators may be used.
- **The earth's gravitational pull, $g = 10Nkg^{-1}$**

For Examiner's use only:

QUESTION	TOTAL MARKS	CANDIDATE'S SCORE
1	20	
2	20	
GRAND TOTAL	40	

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QUESTION ONE

You are provided with the following apparatus:

- Two new size 'D' dry-cells
- switch
- milli-ammeter
- voltmeter (0-3V)
- two enameled copper rods
- rheostat ($0 - 100\Omega$)
- eight connecting wires with at-least 4 fitted with crocodile clips
- Micrometer screw-gauge (to be shared)
- 50 ml beaker (labelled, A)
- 75 ml of distilled water (labelled, B)
- solid X
- Measuring cylinder
- Thermometer
- Glass-rod for stirrer
- Sand-paper

Proceed as follows:

a) Measure the temperature of the distilled water in beaker, B

Temperature, θ = **.....** **(1mk)**

b) Place the provided solid X into the beaker labelled, A. measure 50 ml of the distilled water and gently pour it into beaker A and stir gently until all the solid X is dissolved to form solution, C.

c) Measure the diameter, d of one of the copper rods.

i. diameter, d = **.....** m **(1mk)**

ii. determine the cross-section area, A of the copper rod **(2mks)**

A =

d) Using the sand paper, remove the insulating coating at the both ends of each of the copper rods. Now set-up the apparatus as shown in figure 1 below.

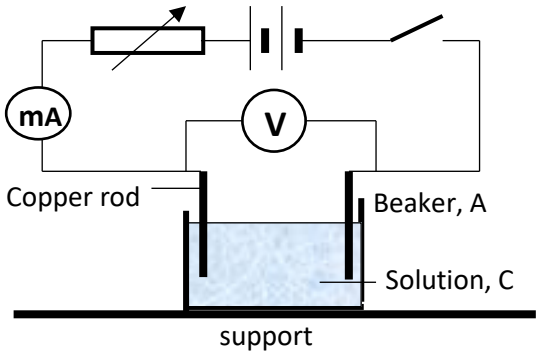


Figure 12

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e) With the help of the rheostat, set the current value to 30 mA and measure its corresponding voltage, V.

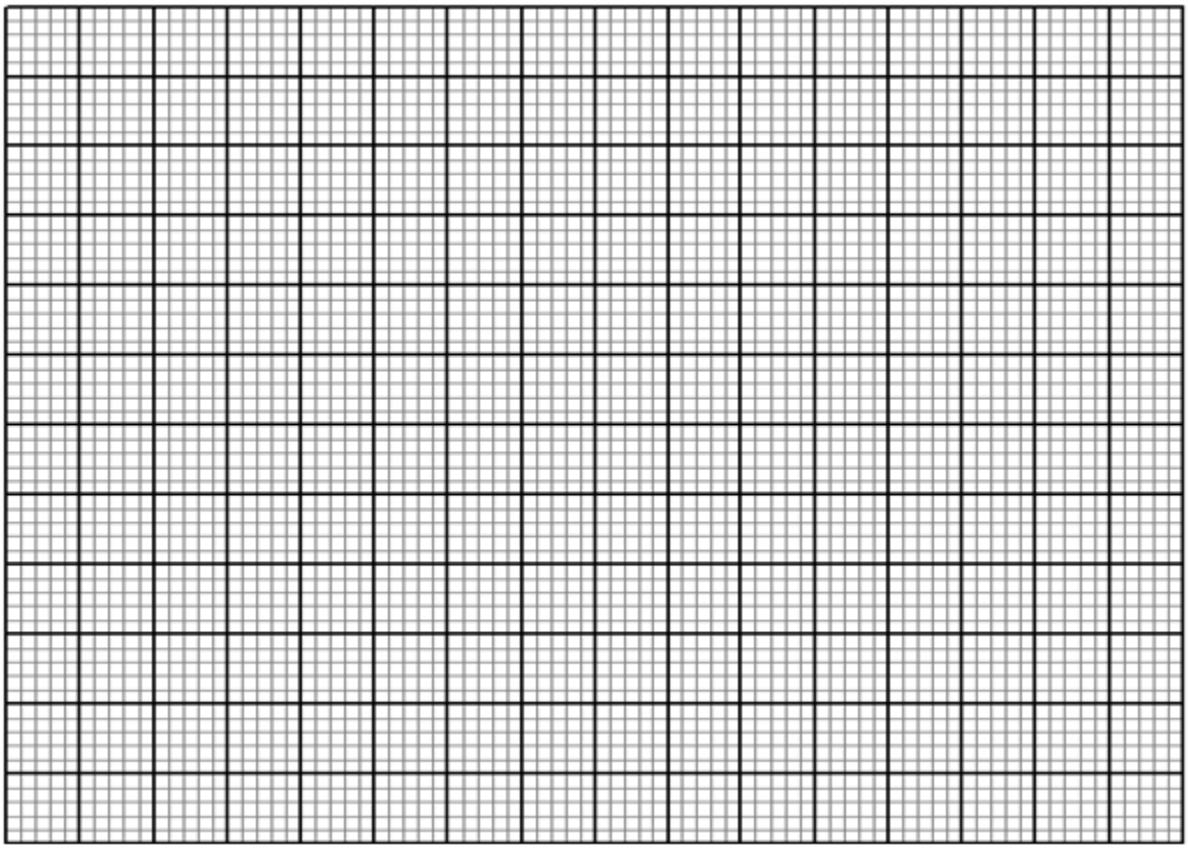
V = ... **(1mk)**

f) Repeat the above procedure for the values of current indicated in the table, 1 below and note their corresponding voltages. Complete the table. **(5mks)**

Table 1

Current, I (mA)	30	40	50	60	70
Current, (A)					
Voltage, V					

g) In the grid provided, plot a graph of voltage (y-axis) against current (A) (X-axis) **(5mks)**



h) Determine the slope, S of the graph **(3mks)**

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i) The voltage and current are related by the equation: $V - \frac{bI}{A} = 0$
Determine the value of b. **(2mks)**

$b =$ .....

QUESTION TWO

You are provided with the following apparatus:

- Complete retort-stand (clamp, boss and stand)
- Half metre-rule
- Metre-rule
- G-clamp
- Office pin
- Four 100g masses (or its equivalent)
- Some celotape
- Vernier calipers (to be shared)
- String/thread (about 30 cm long)
- One 50g mass
- Knife-edge

PART A

Proceed as follows:

a) Arrange the apparatus as shown in figure 2, below. Ensure the 10 cm mark of the half metre-rule is at the edge of the table and firmly held by the G-clamp while the pin (pointer) is at the 90 cm mark on the scale of the metre-rule. (The clamp should not be removed for the entire duration of carrying-out this experiment)

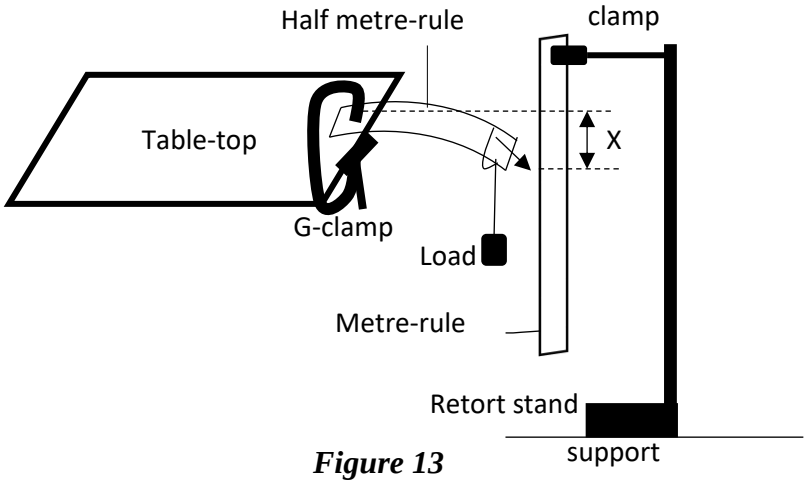


Figure 13

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b) Suspend one 100 g mass at the 49.5 cm mark and record the new pointer reading, P_1

P_1 =..... **(1mk)**

c) Continue adding the load in 100 g steps, each time recording the pointer position. Ensure that the half metre-rule is not overloaded.

d) Determine the amount of sagging, X and complete the table, 2 below. **(6mks)**

Table 2

Mass (g)	Load (N)	Pointer position (cm)	Amount of sagging, X (m)
100			
200			
300			
400			

PART B

Procedure

e) Use the Vernier calipers to determine the width, a and breadth, b of the half metre-rule

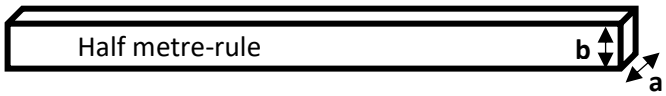


Figure 14

Width, a = **.....** cm **(1mk)**

breadth, b = **.....** cm **(1mk)**

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

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g) With the 50g mass fixed at that position adjust the position of the half-metre rule on the knife edge until it balances horizontally as shown in figure 4.

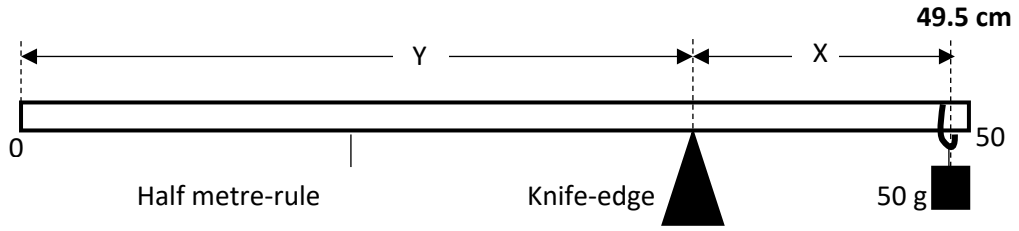


Figure 15

h) At the balance position, read off the length x and y and record in table 3.

i) Using the values of x and y obtained in 'h' above, determine the weight, W of the half metre-rule **(3mks)**

W = ...

j) Move the suspended mass 2cm towards the centre of the rule and repeat parts (g) and (h) to obtain other values of x and y so as to complete table 3. **(4mks)**

Table 3

Position of the mass of 50g	X (cm)	Y (cm)
49.5 cm mark		
47.5 cm mark		
45.5 cm mark		
43.5 cm mark		
41.5 cm mark		

k) Given that quantity, P is given by: $p = \frac{W}{g\,(5ab \times 10^{-5})}$; determine the value of P **(3mks)**

l) State the significance of the quantity, P **(1mk)**

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