BRILLIANT STUDENTS FORM 4 END TERM 2 SERIES 3 EXAMS *(ALL SUBJECTS TESTED)*



BRILLIANT STUDENTS FORM 4 END TERM 2 SERIES 3 EXAMS

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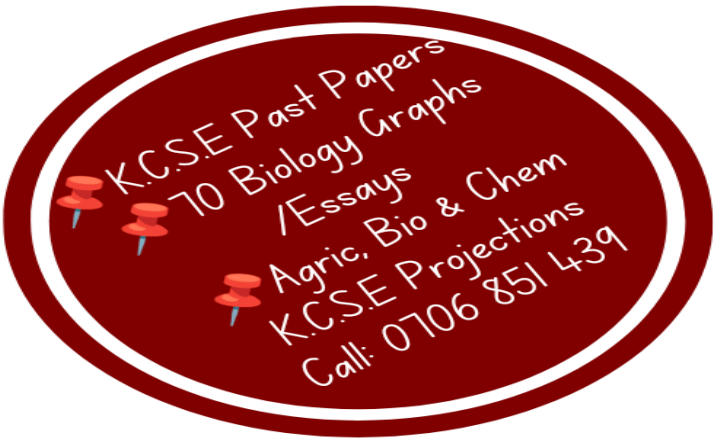
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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

443/1

AGRICULTURE

Paper 1

2 HOURS

Instructions to candidates

This paper has three sections **A , B** and **C.** Answer all questions in section A and B in the spaces provided.

Answer any Two questions in section **C** in the spaces provided.

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Section	**Question**	**Maximum Score**	**Candidates Score**
A	1 -19		
B	20 – 22		
C			
	TOTAL		

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SECTION A (30 Marks)

Answer all questions in this section in the spaces provided.

1 (a) What is a production function**?** **(1mk)**

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b) Name three types of production function. **(1 ½ mks)**

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2 Give three disadvantages of shifting cultivation. **(1 ½ mks)**

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3 Name two types of metal pipes used to convey water in the farm**.** **(1mk)**

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4 State four factors that determine seed rates in the farm**.** **(2mks)**

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5 List three methods of breaking seed dormancy**.** **(1 ½ mks)**

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6 Give four ways of improving labour productivity in a dairy farm. **(2mks)**

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7 State three reasons for treating water in the farm. **(1 ½ mks)**

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8 (a) Give four characteristics of crops grown for green manure. **(2mks)**

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(b) State four factors that determine the quality of farm yard manure. **(2mks)**

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9 List three forms in which water is available in the soil. **(1 ½ mks)**

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10 State four effect of soil structure on crop production. **(1 ½ mks)**

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11 State four most important aspects of rainfall that influence crop production. **(2mks)**

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12 What is biological weed control? **(1mk)**

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13 Give three reasons for mulching crops**.** **(1 ½ mks)**

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14 State three disadvantages of Tractor Hire services to farmers. **(1 ½ mks)**

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15 Outline three ways in which grass help conserve soil**.** **(1 ½ mks)**

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16 State four disadvantages of communal land tenure system**.** **(2mks)**

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17 Why is it advisable to apply a nitrogenous fertilizer to a crop of maize at Knee height or at the height of 30cm – 45cm**.** **(½mk)**

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18 Give two signs of blight disease in a field of tomatoes**.** **(1mk)**

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19 Name the storage organ used to propagate the following plants

(i) Sisal **(½ mk)**

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(ii) Pyrethrum. **(½ mk)**

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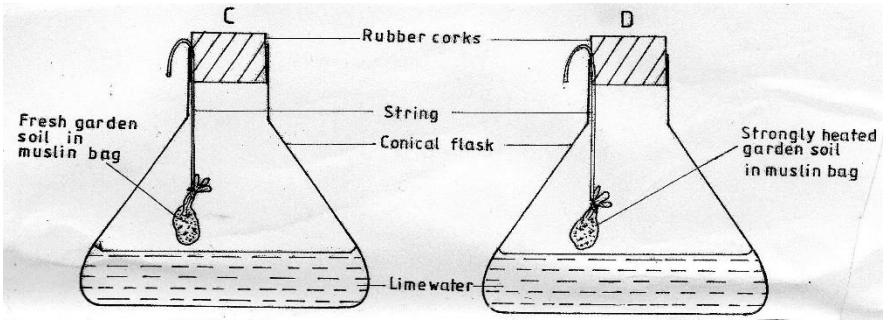
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SECTION B (20 Marks)

Answer all questions in this section in the spaces provided

19 The diagram below show a set of an experiment to study an aspect of soil. The set up was left undisturbed for twenty four hours (24hrs). Study it and answer the questions that follow.



(a) What was the aim of the experiment? **(1mk)**

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(b) State one observation that was made in each conical flasks labeled **C** and **D. (1mk)**

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(c) Give a reason for each of your answers in (b) above. **(2mks)**

C……

D……..

20 Below is a diagram of a crop pest. Study it and answer questions that follow.



(i) Identify the pest**.** **(1mk)**

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(ii) Name two parts of crop damaged by the pest above**.** **(1mk)**

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(iii) Give three methods of controlling the above pest. **(3mks)**

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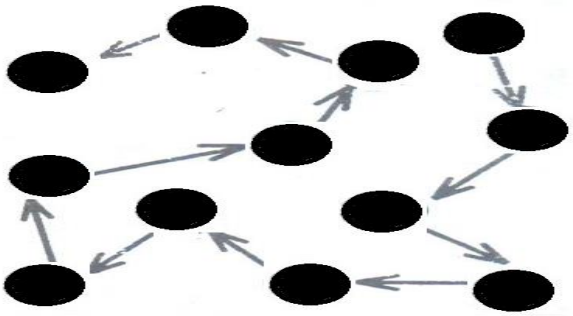
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21 (a) A farmer has 9 acres of land in which 3 acres are under tea. 3 acres is fallow. He wants to establish cotton in the remaining 3 acres. Casual labour hiring would demand 40 man- days per acre at 100/= per man – day. Hiring a tractor would cost ksh. 1,800/= per acre. Use of a tractor would improve cotton yield from 600kgms to 750kgms. Seed cotton per acre worth ksh.40/= per kgm if well cultivated and timely planted. Harvesting costs kshs. 100/= per 100kgms seed cotton. Prepare a partial budget indicating whether the change is worthwhile or not**.** **(5mks)**

22 Study the illustration below and answer questions that follow.



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Identify the method of soil sampling illustrated above**.** **(1mk)**

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(i) Describe the process of soil sampling**.** **(5mks)**

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SECTION C (40 Marks)

Answer any Two questions in this section in the spaces provided.

23 (a) State five pieces of information contained in a receipt. **(5mks)**

(b) Describe the process of transplanting a cabbage seedling**.** **(5mks)**

(c) State and explain five factors that influence supply of cabbages in a market**.** **(10mks)**

24 (a) Explain five factors that determine the spacing to be used in crops. **(10mks)**

(b) Describe seven the nursery practices carried out while seedlings are still growing. **(7mks)**

(c)Outline three precautions taken in harvesting tea. **(3mks)**

25 (a) Explain six ways in which farmers overcome risks and uncertainties in farming. **(6mks)**

(b) Discuss ten advantages of land consolidation to a farmer. **(10 mks)**

(c) Explain four advantages of grafting in oranges. **(4mks)**

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NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

K.C.SE AGRICULTURE PAPER 2

Time: 2 hours

INSTRUCTIONS TO CANDIDATES

- *Write your name, index number, school, admission number and class in the spaces provided.*
- *Sign and write the date in the spaces provided above.*
- *Answer all the questions in section A and B.*
- *Answer any two questions in section C.*
- *Answers should be written in the spaces provided.*

FOR EXAMINER'S USE ONLY

SECTIONS	QUESTIONS	MAXIMUM SCO	ANDIDATES SC
A	1 – 17	30	
B	18 – 21	20	
C	22 – 24	40	
		40	
TOTAL		**90**	

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SECTION A (30 MARKS)

Answer ALL questions in the spaces provided

1. Give **three** qualities that make the merino breed popular. **(1 ½ marks)**

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2. Name **four** breeds of rabbits. **(2 marks)**

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3. State **three** reasons that a farmer would prefer to use an ox-cart instead of a tractor-drawn trailer. **(2 marks)**

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4. State **four** factors that influence the quality of honey. **(2 marks)**

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5. Outline **four** management practices that would ensure maximum harvest in a fish pond. **(4 marks)**

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6. State **six** factors that may determine the quantity of silage eaten by dairy cows.**(3 marks)**

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7. Name **two** predisposing factors to foot rot disease in sheep. **(1 mark)**

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8. Give **two** reasons why wells of dairy sheds should be white washed instead of painting with water or oil paints. **(1 mark)**

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9. Give **two** reasons why tsetsefly control is considered a land reclamation method. **(1 mark)**

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10. (a) What is the immediate host for liver fluke. **(½ mark)**

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(b) What is the duration of oestrus cycle in a cow? **(½ mark)**

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(c) What term is used to refer to the condition during calving in which the hind legs come out first? **(½ mark)**

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11. (a) Give **two** causes of soft shells in eggs. **(1 mark)**

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(b) How should the feeding of bees be supplemented during a dry season?**(½ mark)**

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12. State **four** reasons for keeping livestock healthy. **(2 marks)**

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13. Give **four** qualities of a good …… **(2 marks)**

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14. State **four** disadvantages of inbreeding in livestock. **(2 marks)**

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15. Outline **four** benefits of steaming-up in livestock. **(2 marks)**

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16. Name **four** reasons for castrating male calves. **(2 marks)**

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17. Outline **four** uses of solar energy in a farm. **(2 marks)**

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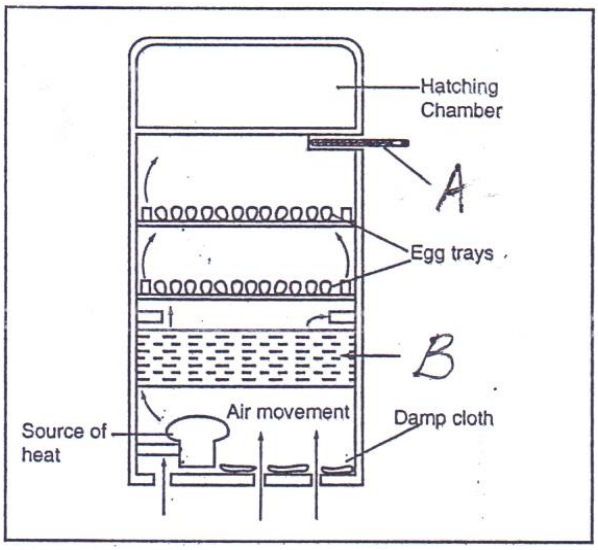
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SECTION B (20 MARKS)

Answer ALL questions in this section in the spaces provided

18. The following is a diagram of an artificial incubator. Study it and answer questions that follow.



(a) Identify the following parts shown by letters **A** and **B**. **(2 marks)**

A ……

B ……

(b) State **three** conditions that are necessary for a successful hatching. **(3 marks)**

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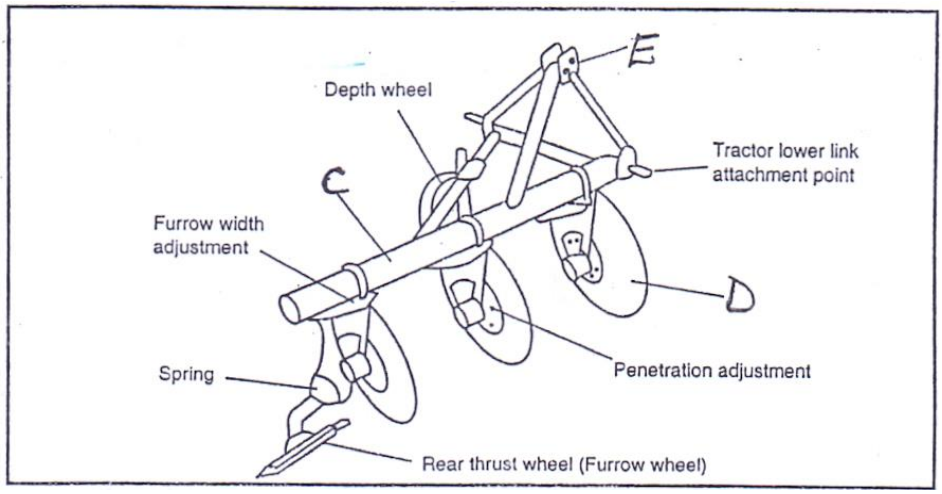
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19. Study the following farm implement and answer the questions below.



(a) Identify the above implement. **(½ mark)**

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(b) Identify the parts shown by letters **C**, **D**, **E**. **(1 ½ marks)**

C ……..

D ……..

E ……..

(c) Give **three** reasons that make the implement better in land preparation.**(3 marks)**

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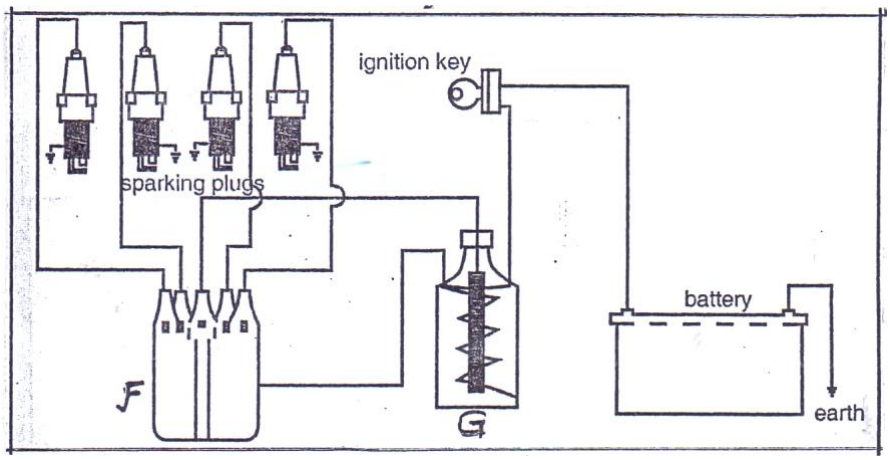
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20. The following diagram is a petrol engine of a tractor ignition system, study it and answer the questions that follow.



(a) Identify the following parts **F** and **G**. **(1 mark)**

F ……..

G ……..

(b) What is the role of part **G**? **(1 mark)**

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(c) State **three** maintenance that should be done to the tractor battery. (**3 marks)**

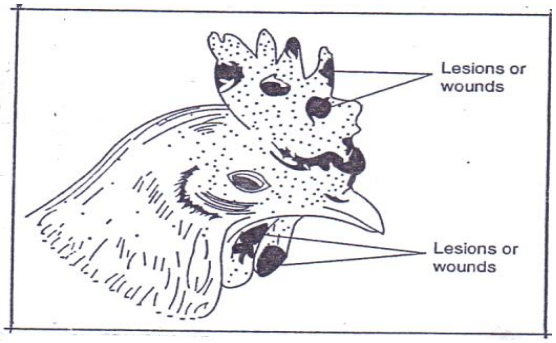
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21. Study the following diagram and answer questions below.



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

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(b) What causes the above disease? **(1 mark)**

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(c) Give **two** predisposing factors of the disease. **(2 marks)**

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(d) Give **one** control measure of the disease. (1 mark)

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SECTION C (40 MARKS)

*Answer any **two** questions from this section.*

22. (a) Explain **eight** functions you can carry out in a crush. **(8 marks)**

(b) Describe **six** advantages of rotational grazing. **(6 marks)**

(c) Describe **six** effects of parasites on livestock. **(6 marks)**

23. (a) Describe **nine** short term services that should be done to a farm tractor. **(9 marks)**

(b) Explain **five** reasons for maintaining farm tools and equipment. **(5 marks)**

(c) Explain **six** maintenance commonly done to farm tools and equipment. **(6 marks)**

24. (a) Describe **ten** uses of fences on a farm. **(10 marks)**

(b) Explain **five** factors a farmer should consider in the construction of farm structures. **(10 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

231/1

BIOLOGY

FORM 4

2 HOURS

Kenya Certificate of Secondary Education
BIOLOGY

Paper 1

Instructions to candidates

- Answer ***ALL*** the questions in the spaces provided.

For Examiner's Use Only

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 27		

1. State the meaning of the following terms as used in biology. **(2 mark)**

(a) Embryology

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(b) Ornithology

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2. (a) Name **two** systems of classification of living things common to Biologists. **(2 marks)**

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(b) A banana plant was classified as *Musa parasidiaca* by a taxonomist. Identify the taxonomic units represented by the following words. **(2 marks)**

Musa **……...**

parasidiaca **……...**

3. (a) The cell is the basic structural and functional unit of a cell. State three properties of cell membrane in a living cell. **(3 marks)**

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(b) State **two** major functions of centriole in animal cells. **(2 marks)**

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(c) Name two types of vacuoles in an amoeba cell. **(2 marks)**

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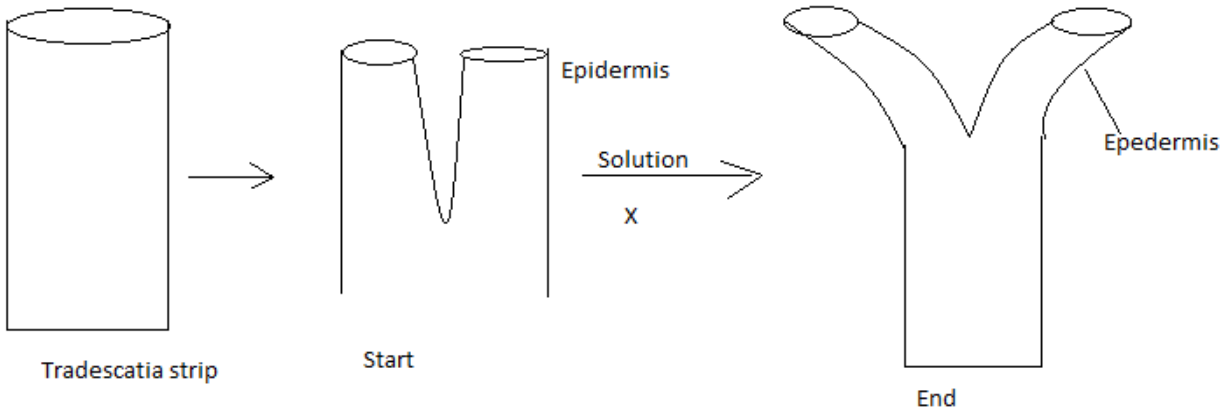
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4. A strip of a herbaceous Tradescantia was cut longitudinally as shown below and placed in solution X. After one hour, the strips appeared as shown below.



(a) What was the nature of solution X? **(1 mark)**

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(b) What physiological process was being investigated? **(1 mark)**

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(c) Account for the results at the end of experiment after one hour. **(3 marks)**

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5. State **two** raw materials required to produce energy in cells for the process of active transport. (2 marks)

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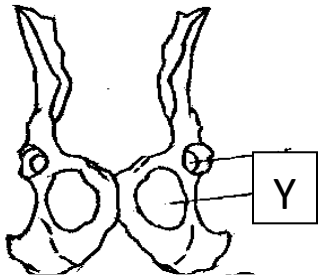
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6. The pelvic girdle of a mammal is shown below. Study it and answer the questions that follow.



(a) (i) Name the part labelled Y.

Name : ..... **(1 mark)**

(ii) State the three functions of part Y named in (a) (i) above. **(3 marks)**

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7. (a) Name **two** elements required by plants for the synthesis of chlorophyll pigment. **(2 marks)**

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(b) What name is given to plants whose leaves turn yellow due to lack sunlight and the two elements above? (1 mark)

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8. Name **two** types of curves obtained during measurement of growth in living things. **(2 marks)**

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9. State three adaptations of xylem vessels to transportation of water. **(3 marks)**

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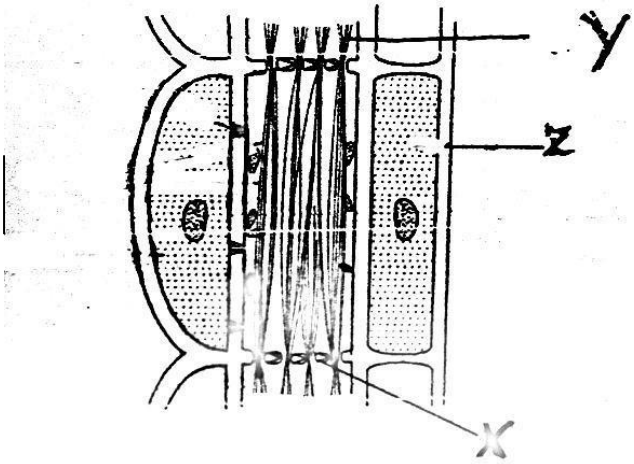
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10. The structure below is the phloem tissue.



(a) Name the two main components of the tissue. (2 marks)

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(b) Name the part labelled **Y** and state its function. **(2 marks)**

W ……

Function:

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11. State and explain the role of Heparin in the blood. (2 marks)

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12. State the adaptations of a respiratory surface in terrestrial animals. **(3 marks)**

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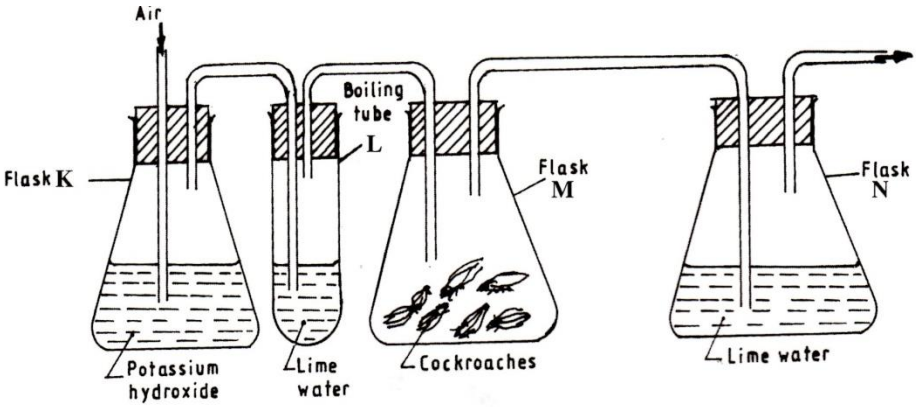
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13. The diagram below illustrates gaseous exchange in animals.



(i) Why was air passed through potassium hydroxide in **flask K**? **(1 mark)**

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(ii) Explain the observations made in **Flask N**. **(2 marks)**

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(iii) Why is there no oxygen gas in the air exiting flask N? **(2 marks)**

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14. (a) Name **three** gaseous exchange surfaces in plants. **(3 marks)**

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(b) Name the gas released by plants to the atmosphere at night? **(1 mark)**

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(c) What is the effect of dust on gaseous exchange in terrestrial plants? **(1 mark)**

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15. Name the major physiological process of respiration that take place;

(a) At the cytoplasm of the mitochondrion. (1 mark)

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(b) At the matrix of the mitochondrion. (1 mark)

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16. (a) State **two** significance of R.Q values to a biologist. (2 marks)

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(b) The equation below is a respiratory reaction of a certain substrate. Study it and use it to determine its R.Q value. **(2 marks)**

$$C_{20}H_{40}O_{20} + 20\,O_2 \longrightarrow 20\,CO_2 + 20H_2O + \text{Energy}$$

17. (a) State **two** types of variations in the study of genetics. **(2 marks)**

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(b) Which of the two types of variations mentioned above is influenced by the genotype of an individual only? **(1 mark)**

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(c) What is a gene locus in genetics? **(1 mark)**

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18. (a)Explain the biological reasons behind large volume of urine produced by fresh water Tilapia in Lake Victoria. **(2 marks)**

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(b) Why do insects and birds produce uric acid and not urea as in man? **(2 marks)**

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19. Name **two** types of diabetes that inflict man. **(2 marks)**

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20. State using root structures only how you can identify and group a plant as either a dicotyledonae or monocotyledonae using both morphological and anatomical structures. **(2 marks)**

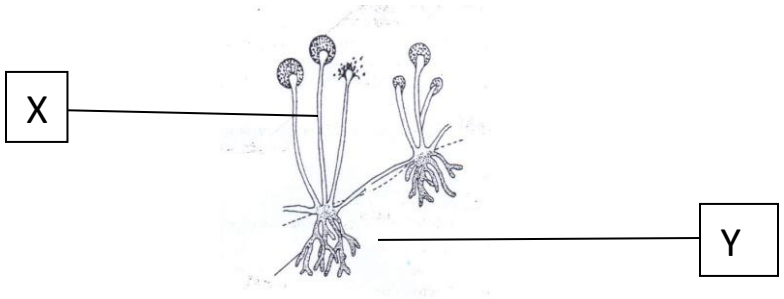
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21. The organism below is found in kingdom Fungi.



(a) Using structures X and Y only, why does the organism not qualify as a plant? **(2 marks)**

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(b) What division does the moss and liverwort belong to in kingdom plantae? (1 mark)

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22. Name **two** branches of Ecology. (2 marks)

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23. What is a receptor? (1 mark)

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24. State **two** adaptations of each of the following structures to reproduction in animals.

(a) Ovuduct **(2 marks)**

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(b) Epididymis **(2 marks)**

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25. State the functions of each of the following cells in the testes. **(2 marks)**

(a) Sertoli cells

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(b) Interstitial cells

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26. Name **two** bacterial diseases that are sexually transmitted as infections. **(2 marks)**

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27. Name the chemical substances in plants that; **(3 marks)**

(a) Promote ripening of fruits ……

(b) Flowering in plants ……

(c) Leaf fall in plants ……

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

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231/2
BIOLOGY
PAPER 2
TIME: 2 HOURS

Biology
Paper 2
INSTRUCTIONS TO CANDIDATES:

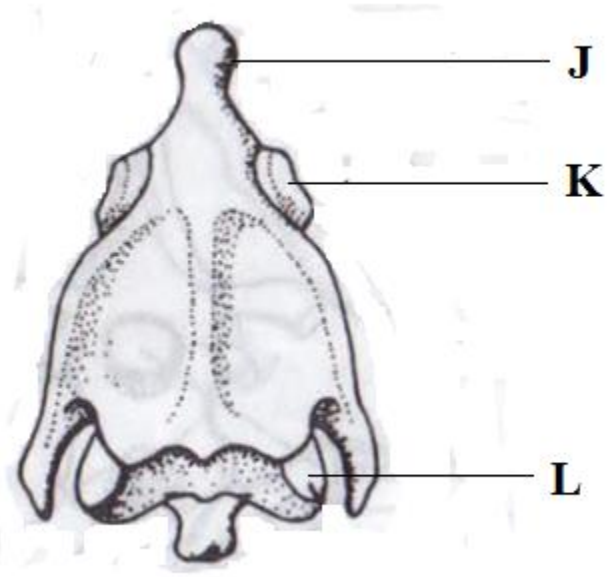
- *Write **your name** and **index number** in the spaces provided.*
- *Answer **all** the questions in Section **A** in the spaces provided.*
- *In section **B** answer questions **6** (compulsory) and either question **7** or **8** in the spaces provided*

For Examiner's Use Only:

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1	8	
	2	8	
	3	8	
	4	8	
	5	8	
B	6	20	
	7	20	
	8	20	
	TOTAL	**80**	

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1.Study the vertebra diagram below and then answer the questions that follow.



(a)(i) What is the identity of vertebra? **(1 mark)**

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(ii) Identify the view presented by the diagram. **(1 mark)**

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(b) Label the parts shown as:

(i) J.....(1 mark)

(ii) K.....(1 mark)

(iii) L.....(1 mark)

(c) Name the vertebra that

(i) Anteriorly articulates the part **K.....(1 mark)**

(ii) Posteriorly articulates with part **L.....(1mark)**

(d) Name the resulting movement attained by the articulation referred to in c(i) **(1 mark)**

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2. (a) Distinguish between a genotype and a phenotype. **(1 mark)**

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(b) A couple with normal skin pigmentation had three children but their second born was an albino. Using letter A to represent the gene for normal skin colour,work out the genotypes of their children using a genetic cross.**(4 marks)**

(c) Apart from albinism, state other three disorders in humans caused by gene mutation. **(3marks)**

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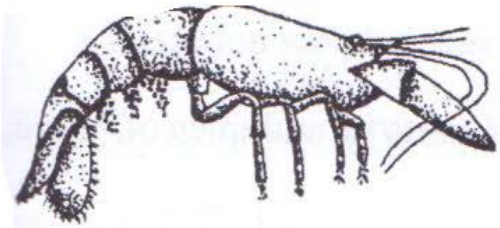
3. Examine the drawings of the organisms shown below.

(a) Construct a dichotomous key that can be used to distinguish the organisms using the following observable features**only.** **(6 marks)**

(i) Wings

(ii) Pair of antennae

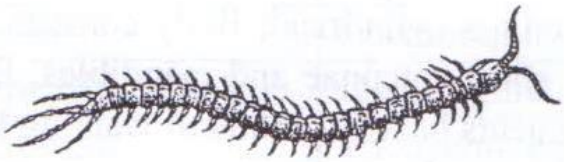
(iii) Legs per segment.



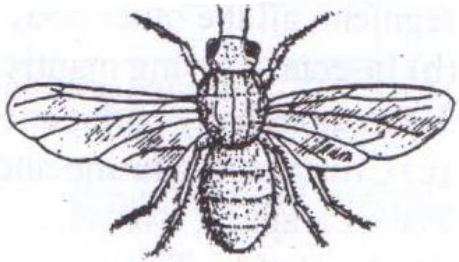
A



B



C



D

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(b) Give two distinguishing features common to the organisms shown above in (a**). (2 marks)**

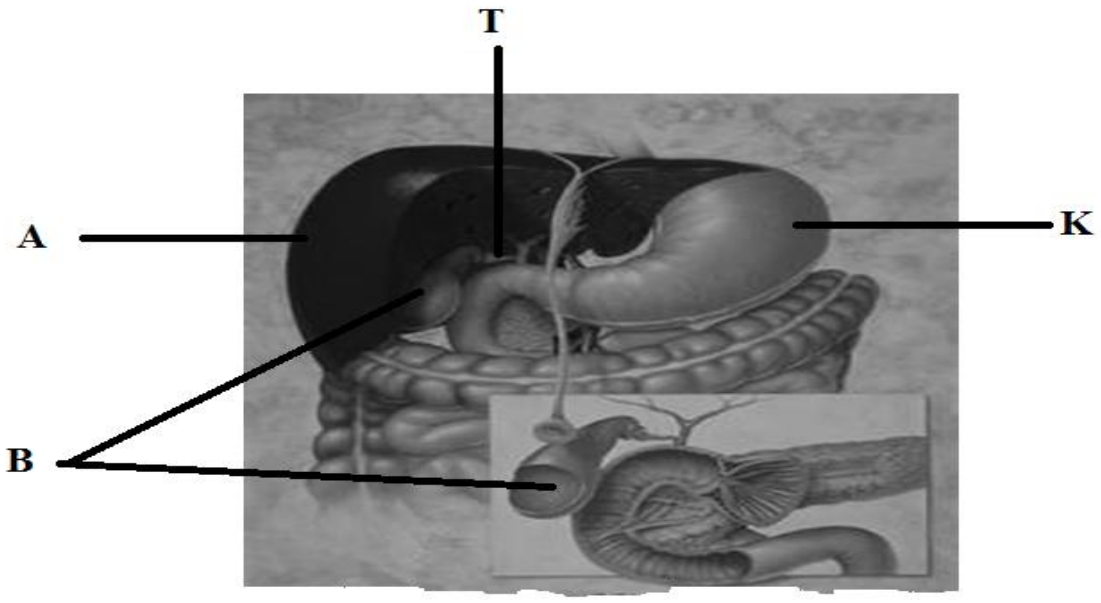
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4. Use the photograph of mammalian digestive system and associated organs to answer the questions that follow.



(i) Name the structures marked **A**, **R**, **K** and**T**. **(4marks)**

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(ii) Name an acid found in the structure labelled **K**. **(1mark)**

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(iii) Name the juice stored in the structure labelled **B** and give its function. **(2marks)**

Juice ……..……..

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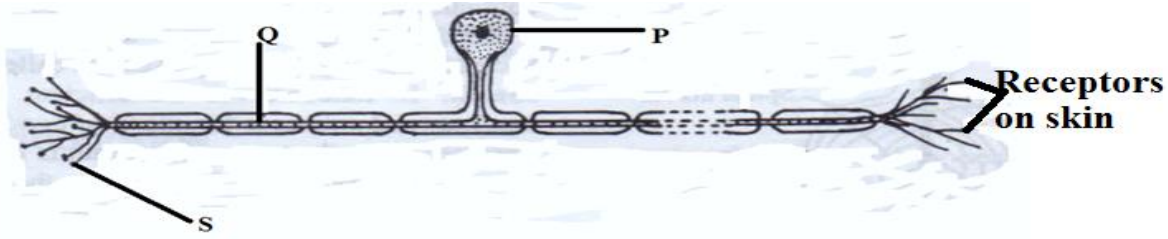
Function

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(iv) Label with letter **D** part where function named in (iii) above takes place. **(1 mark)**

5.The diagram below represents a neurone.Use it to answer questions that follow.



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

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(b) Using an arrow,show the direction of impulse. **(1 mark)**

(c)Name the parts labelled.

(i)Q..... (1 mark)

(ii)P.....(1 mark)

(iii)S..... (1 mark)

(d) Name the neurotransmitter substance released at part S. (1 mark)

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(e) Identify the damaged parts of the brain that would exhibit the following symptoms.
(i) Loss of memory. **(1 mark)**

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(ii) Inability to maintain proper body balance and posture.(1 mark)

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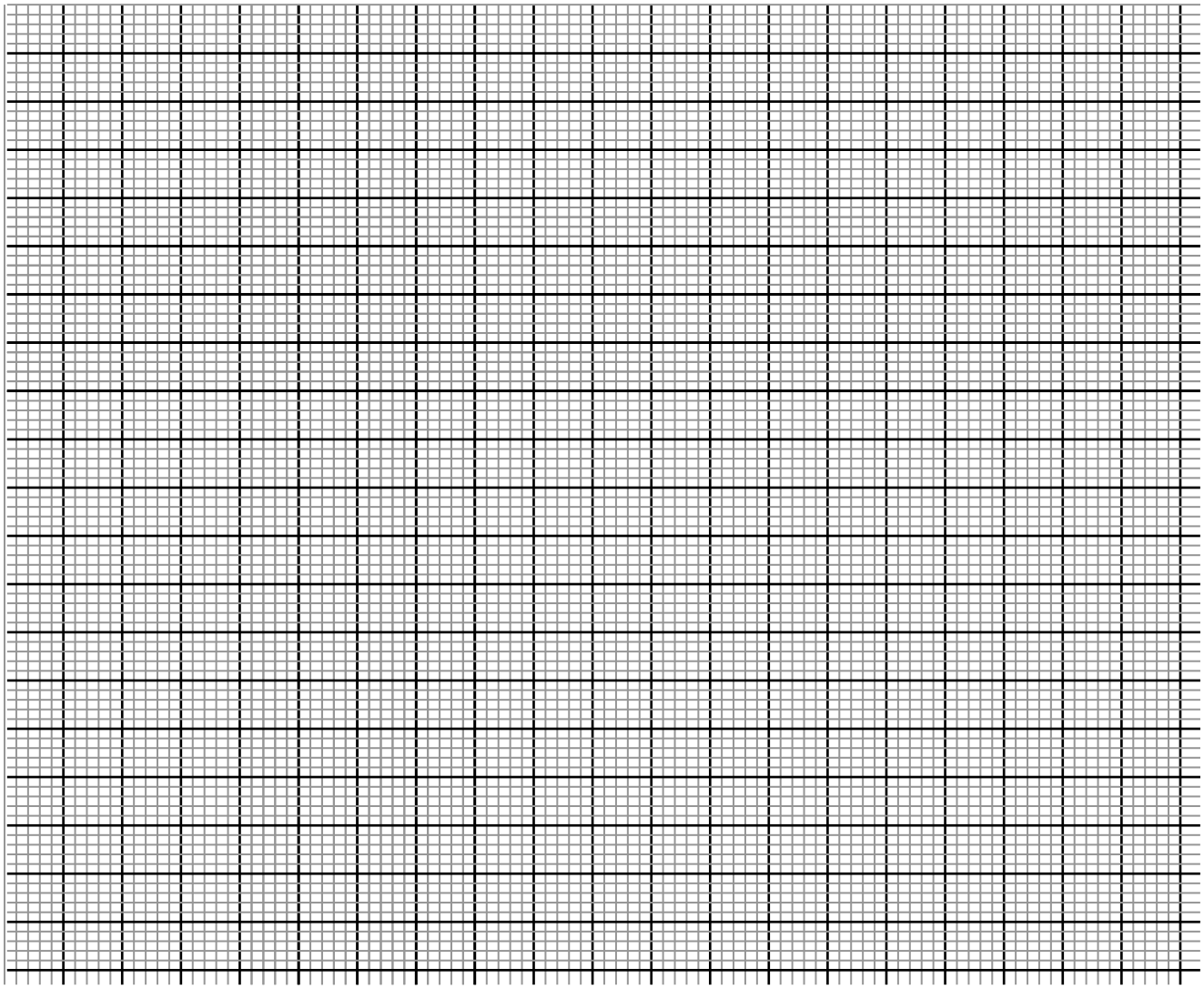
SECTION B: 40 (MARKS)

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

6. An investigation was carried out to determine the concentration of various substances in a river following the discharge of untreated sewage into the river. The results are shown in the table below.

Distance downstream in kilometers	0.0	0.5	1	2	4	6	8	10	12	14	16
Concentration of oxygen(mg/L)	10.0	10.0	8.8	5.8	5.0	4.0	5.0	6.0	8.2	9.4	10.0
Concentration of organic matter(mg/L)	10.0	10.0	16.0	15.2	14.2	13.4	12.6	12.4	11.6	10.0	10.0
Concentration of nitrates(mg/L)	10.0	10.0	10.6	12.2	14.2	15.0	15.2	14.6	12.6	11.4	10.0

(a) Using the same axes, draw graphs of concentration of named substances in the water against kilometers.
(8 marks)



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(b) Identify the point of sewage discharge. **(1 mark)**

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(c) Account for the changes in the concentration of;

(i) Organic matter. **(2 marks)**

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(ii) Dissolved oxygen**.** **(2 marks)**

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(d) Nitrates**.** **(2 marks**)

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(e) Explain how heavy metals in industrial effluents may accumulate in bodies of humans to toxic levels. **(2 marks)**

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(f) State four human activities that affect population of animals in game parks. **(4 marks).**

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7. (a) Describethe forces involved in the transport of water up the stem to the leaves. **(12 marks)**

(b) Describe the adaptations of the proximal convoluted tubule to its function. **(8 marks)**

8. (a) State the possible application of the following plant hormones in agriculture.

(i) Auxins.

(ii) Gibberellins.

(b) Explain how each of the following serves as evidence of organic evolution:

(i) Fossil records**.** **(3 marks)**

(ii) Comparative anatomy. **(6 marks)**

(iii) Geographical distribution**.** **(3 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

231/3 BIOLOGY

PAPER 3 PRACTICAL

1 ¾ HOURS

1.You are provided with 6 test tubes, solution C, droppers, a white tile, iodine solution, 0.1% sodium chloride, 1.4% sodium chloride, Benedicts solution, solution A, water bath and labels.

a) Label three tests S, T and U. Into each test-tube, place 3ml of solution C.

b) Put a drop of solution C on a white tile and add a drop of iodine solution.

Record your observation. **(1mk)**

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C) Add 3 drops of 0.1% sodium chloride solution and 2ml of solution A to test tube T.

To test-tube U add three drops of 1.4% sodium chloride solution and 2ml of solution A. Sodium chloride is a source of sodium ions. Place the test tube S, T and U in a water bath maintained at $37^{o}C$ for 30 minutes. Using a drop of the solution from each test-tube repeat the procedure in (a) above and spare the rest for the next question. Record your observation in the table below. **(3mks)**

Test-tube	**Observation at the end of experiment**
S	
T	
U	

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c) i) Put $2cm^3$ of solution from test-tube S in a clean test-tube and add $2cm^3$ of Benedict solution, shake then heat the mixture to boil. Record your final observations in the table below. Repeat the procedure for solution T and U. **(3mks)**

Test-tube	**Observation at the end of experiment**
S	
T	
U	

ii) Account for your results in test-tube T and U. (3mks)

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d) Why was the test-tube S included in the experiment? (1mk)

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e) Suggest the identity of solution A. (1mk)

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f) Why was the water bath maintained at 37^oC. (1mk)

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2.You are provided with specimen labelled M.

a) Using floral parts and the leaves, classify the plant from which part M was obtained into class and give reasons.

Class **……**

Reasons - **(3mks)**

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b) Suggest the pollinating agent for the specimen M and give reasons.

Pollinating agent **……(1mk)**

Reasons (**2mks)**

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c) Dissect the flower longitudinally into two equal parts and examine one of the parts using a hand lens.

Describe the following parts

i) Androecium **(3mks)**

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ii) Gynoecium **(3mks)**

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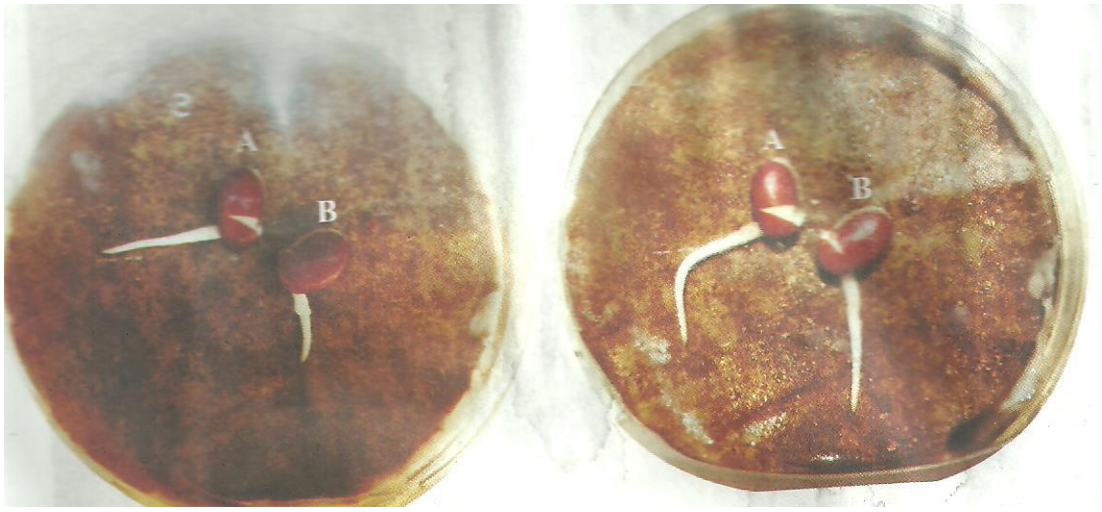
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d) Use the hand lens to observe the pistil closely, draw the pistil only and label the parts. **(3mks)**

3.The photographs below show an experiment that was set to investigate a certain response in bean seedlings. Examine them.



At the beginning **after 24 hours**

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a) Which response was being investigated? **(1mk)**

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b) Account for the observed results for seedling A after 24 hours. **(5mks)**

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c) Explain why in seedling B the root continued growing straight down. **(2mks)**

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d) Explain the significance of the response you stated in (a) above to the plant. **(2mks)**

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b) Below is a photograph of a mammalian bone, labelled Q.



i) Identify the bone **(1mk)**

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ii) State how the bone is adapted to its functions. **(3mks)**

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iii) Name the bone that articulates with the bone Q at part labelled X. **(1mk)**

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iv) Name the specific type of joint formed at this articulation. **(1mk)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: …….. DATE: ……..

BUSINESS STUDIES
PAPER 1
565/1

TIME: 2HOURS

INSTRUCTIONS TO CANDIDATES.
Answer all the questions on the spaces provided.

For Examiners use only.

QUESTION	1	2	3	4	5	6	7	8	9	10	11	12
SCORE												

13	14	15	16	17	18	19	20	21	22	23	24	25

TOTAL SCORE

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1. Outline four aspects of demographic environment that influences the operations of business**.(4 marks)**

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2. Highlight four unethical practices that business may get involved in. **(4 marks)**

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3. Highlight four merits that will accrue to a business by adopting the internet as a means of communication **(4marks)**

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4. State four conditions necessary for successful development planning to take place in a country.**(4 marks)**

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5. Outline four channels of distribution for exported Agricultural products. **(4 marks)**

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6. Highlight four ways in which an efficient transport system can enhance trade. **(4 marks)**

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7. State whether the following business transactions increases, decreases or has no effect on the assets, liabilities or capital. **(4 marks)**

Transaction	Assets	Liabilities	Capital
Bought furniture on credit			
Paid creditors by cash			
Investment by the owner			
Purchase stock by cheque			

8. Highlight four features of oligopoly market structures. **(4marks)**

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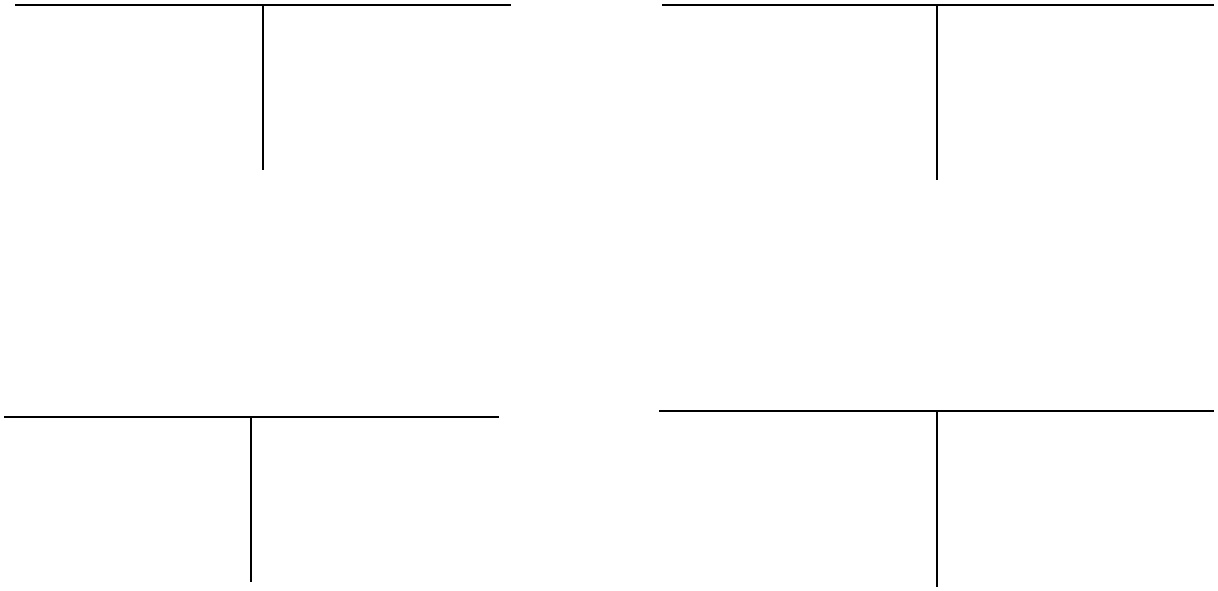
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9. The following transactions relate to Mutinda traders for the month of January 2008.

January 8 purchased goods on credit from Furaha traders worth sh.12000

12 Sold goods to Jane traders worth sh.20000

Record the transactions in the ledger accounts given below. **(4 marks)**



10. The statements below contains descriptions relating to some type of warehouse. In the space provided, state the type of warehouse to which each description refer to. **(4 marks)**

Description Type

a)Used to store exports and imports……

b).Anybody can rent spaces in it for storing goods temporary……

c) Operated for owners exclusive use ……

d) Owned and operated by farmers and manufacturers……

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11. Highlight four functions of Non-banking financial institutions. **(4 marks)**

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12. State four reasons why consumers must make a choice when satisfying competing wants. **(4 marks)**

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13. Outline four assumptions used to explain the circular flow of income in a two sector economy **(4 marks)**

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14. State four characteristics of subsistence production in Kenya. (4marks)

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15. The following table shows the price of 2kg of maize flour 1 loaf of bread, and 1 packet of milk in 2013 and 2014 with their weights. (4 marks)

Items	Prices		Weights
	2013	2014	
Flour	80	85	2
Bread	50	60	1
Milk	40	60	3

Required:

Calculate Consumer Price Index (C.P.I) for the year 2014 for the basket of goods composed of the three items using the Weighted Average Method and determine rate of inflation

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16. State four disciplines in Business studies. **(4marks)**

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17. Name the document that matches the following descriptions. **(4 marks)**

	Description	Document
(a)	Prepared by an exporter giving details about the country where goods are imported from	
(b)	Shows prices charged as certified by the importing country's officials	
(c)	An order sent by an importer to an agent in the exporting country	
(d)	Enables the importer to initiate clearing of customs duty early enough to avoid delays.	

18. Highlight four features of a mail order stores in home trade. **(4 marks)**

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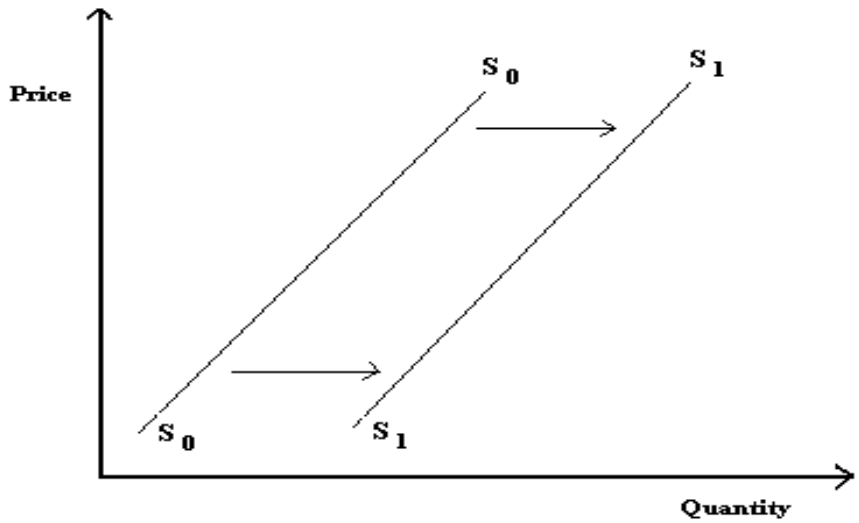
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19. The diagram below shows a shift in the supply curve of a given commodity**.(4 marks)**



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State four reasons for the shift in the supply curve. **(4 marks)**

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20. Identify the types of unemployment described below. **(4 marks)**

a)**……..**is a type of unemployment that occurs when demand for labor declines due to either change in the method of production or decrease in supply of goods and services.

b)**……**is a type of unemployment which occurs when workers full capabilities are not fully utilized.

c)**……**is a type of unemployment which occurs to those employed on contract basis

d)**……..**occurs when a country goes through economic activities alternating from boom to recession

21. Highlight four circumstances under which an insurance contract may be terminated. **(4 marks)**

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22. State four negative effects of an ageing population. **(4 marks)**

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23. State four importance of balance sheet. **(4marks)**

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24. Outline four reasons as to why a cheque is returned to the payee while indicated "refer back to the drawer."

(4 marks)

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25. The following balances were extracted from Mwangaza traders' books of accounts.

	Shs.
Opening stock	25,000
Closing stock	35,000
Purchases	190,000
Mark - up	20%

Calculate:

a) Cost of sales **(1mark)**

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a) Gross profit **(1 mark)**

b) Sales **(1 mark)**

c) Rate of stock turnover(ROSTO) **(1 mark)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

BUSINESS STUDIES

565/2

PAPER 2

2 ½ HOURS

Instructions to candidates

- This paper consists of six questions
- Answer any five questions
- All questions carry equal marks
- Write your answers in the answer booklet provided.

For Examiner's Use Only

Question	Maximum score	Candidate's Score
	20	
	20	
	20	
	20	
	20	
Total Score		

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1.a) Explain **five** benefits enjoyed by a business that operates with a business plan **(10 Marks)**

b) Describe **five** types of advertising techniques used in product promotion. **(10 Marks)**

2.a) Explain **five** advantages of trade liberalization. **(10 Marks)**

b) Explain **five** internal diseconomies of scale to a firm as a result of expansion. **(10 Marks)**

3.a) Explain **five** Benefits of an enclosed office plan. **(10 Marks)**

b) On 1st July, 2016 Ekalale Traders had cash in hand sh. 85,200 and cash at bank sh.40,000 (Cr). During the month, the following transactions took place:

July

2	cash sales sh. 42,630 was paid directly into the bank
5	Received a cheque of sh. 14,100 from Ruth in full settlement of her account.
9	Bought goods worth sh. 26,240 cash.
12.	Cash sales sh. 42,950 payment received by cheque
15	Paid Ndoigo's account of sh. 25,000 in cash less 5% cash discount.
17.	Paid wages sh. 24,000 in cash
18	Withdrew sh. 16,000 from bank for office use.
20	Bought stationery sh.850 cash
22	Cheque received from Ruth was dishonoured.
28	Received a cheque of sh. 9,500 from Kemamo after he deducted a 5% cash discount
31	All cash was banked except sh.10,000.

Required:

Prepare a three column cash book duly balanced. **(10 Marks)**

4.a) With the aid of a suitable diagram, explain the effects of a decrease in supply on the equilibrium price and quantity of a product **(10 Marks)**

b) Describe **five** government initiated methods that help in the protection of consumers from exploitation by dishonest traders **(10 Marks)**

5.a) Outline **five** differences between a partnership form of business organisation and a public limited company. **(10 Marks)**

b) Explain **five** causes of cost-push inflation **(10 Marks)**

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6. a) Explain **five** demerits of direct taxation **(10 Marks)**

b) Masaku Investments operates a wholesale business. The following transactions took place in the month of May 2016.

May	3	Sold goods on credit to Kyalo sh. 60,000
"	8	Purchased goods on Credit from Musau Stores sh. 120,000
"	12	Returned goods to Musau Stores worth sh. 6,000
"	16	Purchased goods on Credit from Musau Stores 160,000
"	22	Sold goods on Credit to Musyoki Retailers sh. 150,000
"	23	Bought a new Motor Van from Mashariki Motors worth shs. 3,200,000
"	24	Kyalo returned goods worth sh. 10,000.
"	29	Sold equipment worth sh. 840,000 on credit to Chap Chap Limited.

Required:

Record the above transaction in the relevant books of original entry for Masaku Investments. **(10 Marks)**

Prefer Calling Amobi Group of Examiners @ 0743 333 000 or 0706 851 439 for Marking Schemes

BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/1
CHEMISTRY
Paper 1
THEORY
Time: 2 hours

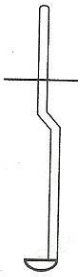
Instructions to Candidates

- *Write your name and index number in the spaces provided above.*
- *Sign and write the date of the examination paper.*
- *Answer **ALL** the questions in the spaces provided in the question paper.*
- *ALL working **MUST** be clearly shown where necessary.*
- *Mathematical tables and silent electronic calculators may be used.*
- *Candidates should check the paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

1.Name the following apparatus and state their use **(2mks)**

a) b)





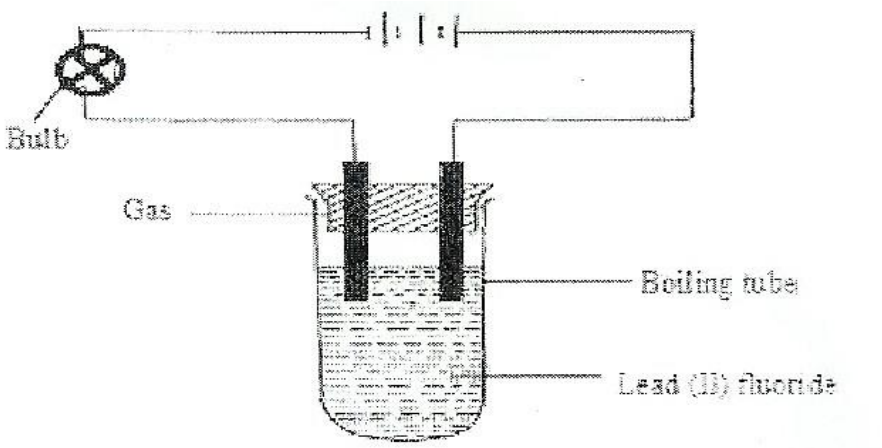
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2.The diagram below shows an experiment for investigating electrical conduction in lead (II) fluoride. Study it and answer the questions that follow.



a) Complete the diagram by indicating the condition that is missing and must be present for electrical conductivity to take place. **(1mk)**

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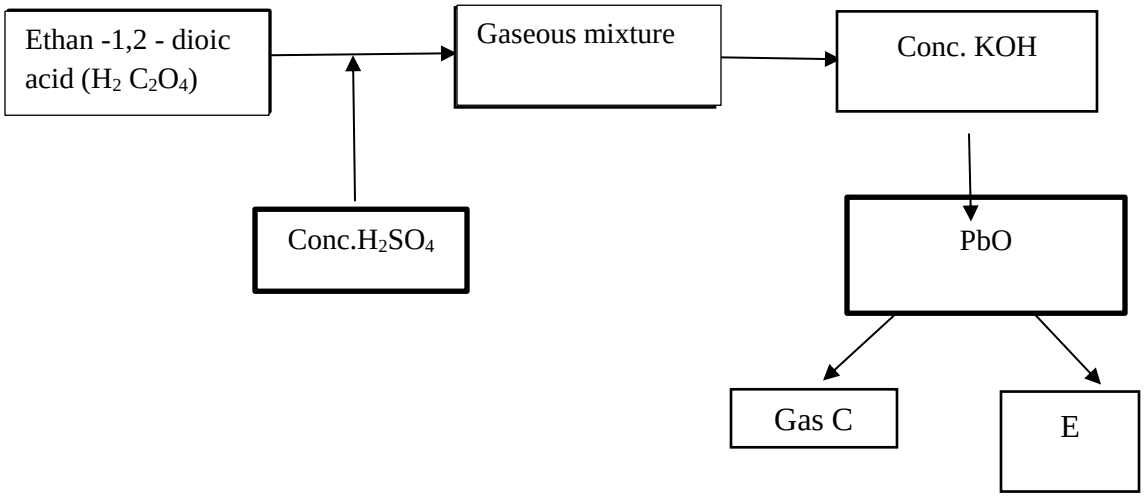
b) State the observation made at the anode. **(1mk)**

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c) On the diagram show the direction of movement of electrons **(1mk)**

3.Use the scheme below to answer the following questions



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a) Name the type of reaction which takes place between Ethan -1,2 – dioic acid and concentrated sulphuric (VI) acid **(1mk)**

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b) Why is the gaseous mixture passed through concentrated KOH. **(1mk)**

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c) Write the equation for the reaction producing C and E **(1mk)**

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4.Describe how you would prepare crystals of sodium sulphate starting with 200 cm^3 of 2 M sodium hydroxide. **(3mks)**

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5.Using dots (.) and cross (X) diagrams show the bonding in the following;

a) Phosphonium ion (PH_4^+) (P=15,H=1) **(1mk)**

b) Compound formed between element A and B given the atomic numbers of (A= 11,B = 8) **(1mk)**

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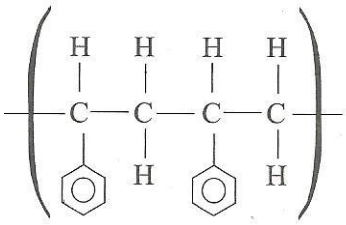
6.A sample of hydrogen chloride was dissolved in water to make 250 cm^3 of a solution. 25cm^3 of the solution required 1M sodium hydroxide for complete neutralization. Determine the mass of hydrogen chloride gas dissolved to make 250 cm^3 of solution
(H = 1 ,Cl = 35.5) **(3mks)**

7.Draw the structures of the following compounds. **(2mks)**

i) Ethylbutanoate

ii) 3-ethyl – 3 – methyl hexane

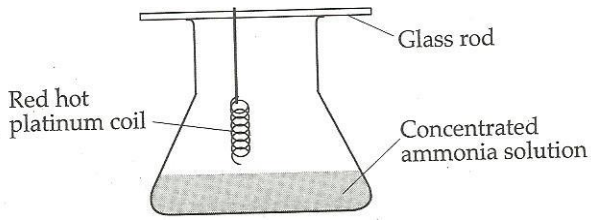
iii) The structure below represents a portion of a polymer.



Draw the structure of the monomer and name it. **(1mk)**

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8.The apparatus below was set up to show the catalytic oxidation of ammonia. Study it and answer the questions that follow.



a) State and explain two observations made in the above experiment. **(2mks)**

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b) Write the equation for the reaction that took place during oxidation of ammonia. **(1mk)**

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c) Write the formula of the complex ion formed when excess ammonia gas is passed through a solution containing Zn^{2+}. **(1mk)**

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9.The molecular mass of water is 18 and that of hydrogen sulphide is 34. Boiling point of water is 100˚C and that of hydrogen sulphide is -61˚C . Explain the difference in the boiling point for the two compounds. (2mks)

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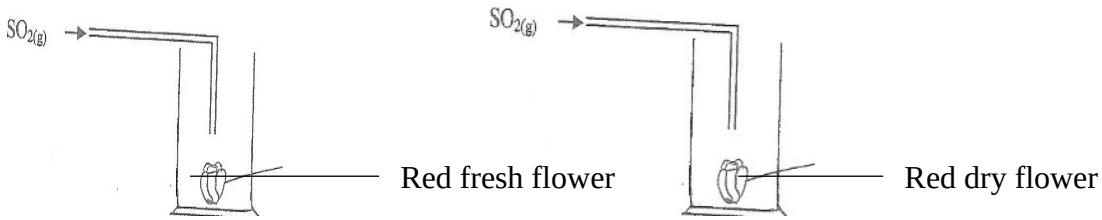
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10. When 0.11 mole of a certain hydrocarbon was burnt in oxygen,19.36 g of carbon(IV) and 5.94 g of water were formed. Determine the molecular formula of the hydrocarbon.
(C =12,O=16,H=1) **(3mks)**

11. The diagrams below were used to investigate the effect of Sulphur (IV) oxide.



State and explain the observations made in diagrams (I) and (II) **(3mks)**

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12. In the equation below identify the reagent that act as an acid and give a reason. **(2mks)**

$H_2O_{(l)} + H_2O_{2(aq)} \longrightarrow H_3O^+_{(aq)} + HO_{2(aq)}$

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13. A fixed mass of gas has a volume of 150 cm^3 at 25 ˚C and 650 mmHg. Calculate the temperature at which the gas will have a volume of 75 cm^3 and a pressure of 700 mmHg. **(3mks)**

14. Below is a formula of a cleansing agent obtained from alkylcarboxylic acid $H_3(CH_2)_{15}COONa$. Would it be possible to use this cleansing agent to wash clothes containing a dissolved bleaching powder, calcium hypochlorite ($CaOCl_2$)? **(2mks)**

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15. In preparation of bleaching agent excess chlorine gas was bubbled into 15 litres of cold 2 M sodium hydroxide.

a) Write an equation for the reaction between chlorine gas and cold dilute sodium hydroxide. **(1mk)**

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b) Calculate the mass in kilograms of the bleaching agent formed. **(2mks)**

16. Study the information in the table below and answer the questions that follow (The letters do not represent the actual symbols of the elements)

	Ionization Energy_kJ/Mole		
Element	**Electronic configuration**	**1st ionization energy**	**2nd ionization energy**
A	2.2	900	1800
B	2.8.2	736	1450
C	2.8.8.2	590	1150

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a) What is ionization energy **(1mk)**

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b) Explain why the 2^{nd} ionization energy is higher than the 1^{st} ionization energy. **(1mk)**

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c) An element K has relative atomic mass of 40.2. It has two isotopes of masses 39 and 42. Calculate the relative abundance of each isotope. **(3mks)**

17. The equation below represents the contact process for the manufacture of Sulphuric (VI) acid.

$$2SO_{2(g)} + O_{2(g)} \longrightarrow 2SO_{3(g)} \quad \Delta H = -197 \text{ Kj/mol}$$

Suggest two changes that can improve the yield of SO_3 **(2mks)**

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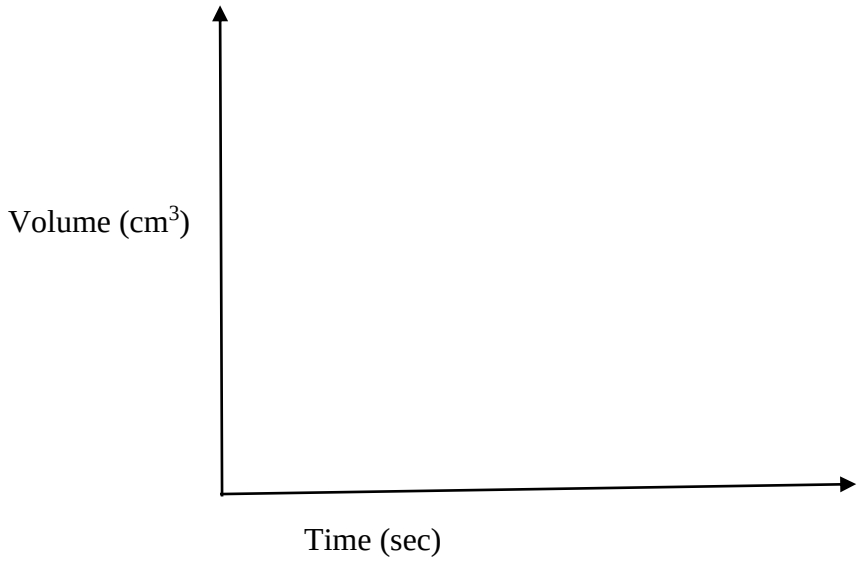
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18. In a experiment involving the reaction between magnesium and 1 M HCl, the volume (cm^3) of hydrogen gas produced after t (seconds) was measured. The experiment was repeated using the same amount of magnesium reacting with 2 M HCl. On the axis below draw and label the two curves that would be obtained from the two experiments. (**2mks)**



19. A radio isotope X decays by emitting two alpha (α) particles and one beta (β) particle to form $^{214}_{83}Bi$.

a) What is the atomic number of X. **(1mk)**

b) After 112 days $^{1}/_{16}$ of the mass of X remained. Determine the half-life of X. (2mks)

20. Use the equations below to answer questions that follow.

$K^+_{(g)} + Cl^-_{(g)} \longrightarrow KCl_{(s)}$ $H_1 = -70kJ/mol$

$KCl_{(s)} \longrightarrow K^+_{(aq)} + Cl^-_{(aq)}$ $H_2 = +15kJ/mol$

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a) What name is given to H_1 **(1mk)**

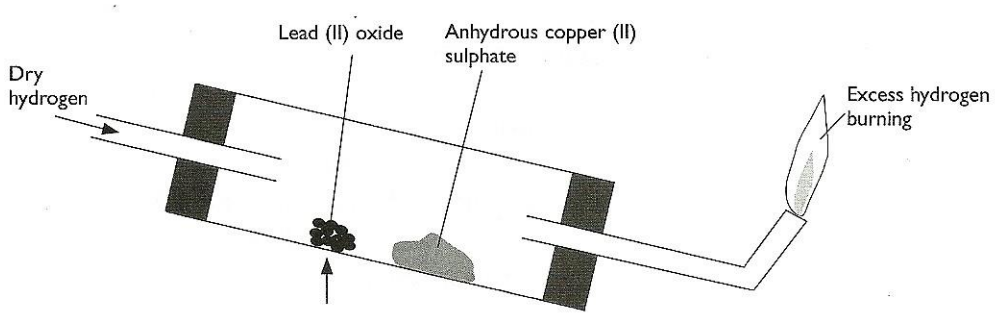
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b) Calculate the heat change for the process **(2mks)**

$$K^+_{(g)} + Cl^-_{(g)} \xrightarrow{H_2O} K^+_{(aq)} + Cl^-_{(aq)}$$

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



a) After the experiment has been running for some time, record two major observations made in the tube. **(2mks)**

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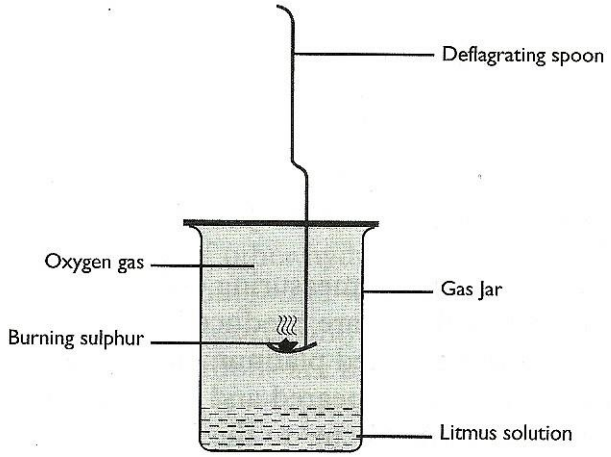
b) Write an equation for the reaction that takes place in the dish containing lead (II) oxide. **(1mk)**

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22. A piece of burning Sulphur was lowered into a gas jar filled with oxygen and containing aqueous litmus solution as shown.



a) State two observations made during the experiment. **(2mks)**

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b) Write an equation for the burning of Sulphur in air. **(1mk)**

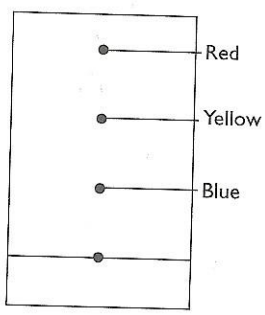
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23. A solution containing 9.2 g 0f solute A in 30 cm^3 of water. When cooled, crystals begin to appear at 25˚C . Calculate the solubility of solute A at 25 ˚C. **(2mks)**

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24. The chromatogram below shows the constituents of flower extract using an organic solvent.



a) Describe how you would obtain a solid sample of the red pigment. **(2mks)**

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b) State one property that makes the red pigmet move the furthest. **(1mk)**

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25. a) Name two ores of iron. **(2mks)**

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b) Give the name of the suitable method used in extracting iron from the ore. (1mk)

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c) Name one impurity present in pig iron and state one effect of the impurity in the physical property of the physical properties of iron. **(2mks)**

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26. Give a reason for the following safety precautions in the laboratory. **(1mk)**

a) Why water should not be poured directly to concentrated sulphuric(VI)acid during dilution.

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b) Why sodium metal should not be handled with bare hands.

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27. Catalytic converters found in car exhaust system converts pollutant gases to relatively harmless gases.

a) Name two pollutant gases and the harmless gases they are converted to. **(2mks)**

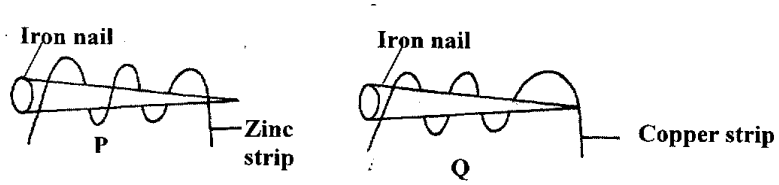
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28. Use the diagram below to answer the questions that follow.



a)In which set – up will the iron – nail rust? Explain **(2 mks)**

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29. A group of students dissolved $20cm^3$ of 2M HCl in water and methylbenzene respectively.

The resulting solutions were shaken thoroughly and used for reactions with various reagents.

(a) Fill the table below with the correct observations that were made during the experiment.

	Reagent	**Solution of hydrogen chloride in water**	**Solution of hydrogen chloride in methylbenzene**
(i)	**Methyl orange**	**(½ mk)**	**(½ mk)**
(ii)	**Anhydrous sodium carbonate**	**(½ mk)**	**(½ mk)**

(ii) Explain the difference in the observations made for the two solutions. **(1 mk)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/2
CHEMISTRY
Paper 2
Time: 2 hours

Kenya Certificate to Secondary Education

CHEMISTRY PAPER 2

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

- *Write your name, admission number, date and school in the spaces provided.*
- *Answer **all** the questions in the spaces provided.*
- *All working must be clearly shown where necessary.*
- *Scientific calculators may be used.*

For examiners use only

Question number	Marks	Candidates score
1	10	
2	12	
3	12	
4	13	
5	12	
6	10	
7	12	
Total	**80**	

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This paper consists of **16** printed pages. Candidates are advised to check and to make sure all pages are as indicated and no question is missing.

1. The table below gives several samples of mixtures. Study the table and answer the questions that follow

Mixture 1 component	**Mixture 2 components**	**Mixture 3 components**	**Mixture 4 components**
Magnesium Sulphate	Water	Silver Chloride	Iron (III) Chloride
Water	Magnesium Sulphate	Lead Chloride	1ron (III) Oxide
Silver Chloride	Magnesium Nitrate	water	-

a). state **one** way in which the composition of a mixture differs from that of a compound **(1mk)**

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b) Describe how **Mixture 1** and **Mixture 2** can be separated into its components

i. Mixture **1** **(2mks)**

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ii. Mixture **2** **(2mks)**

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c). State the main property that makes components of **Mixture 3** separable **(1mk)**

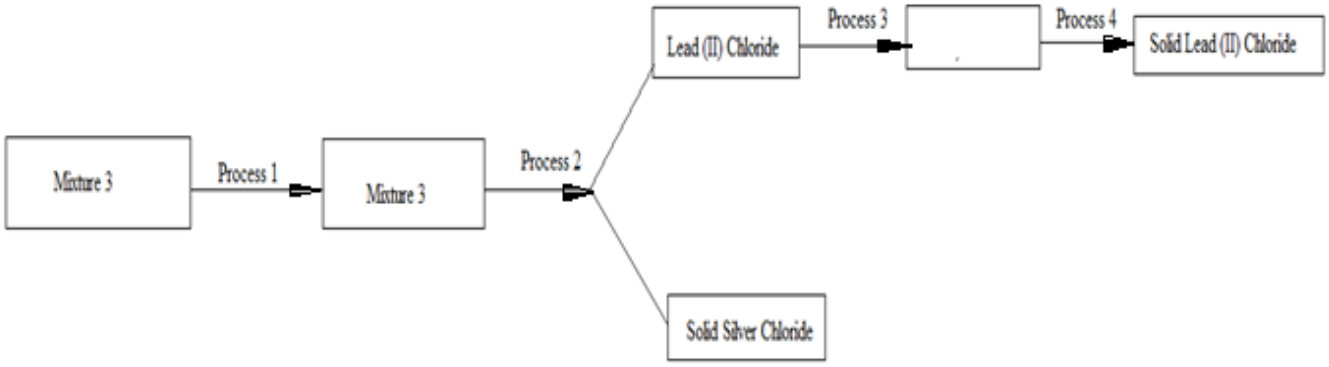
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d). Draw a well labeled diagram of a simple laboratory set up which can be used to separate the components of **Mixture 4** **(2mks)**

e). the chart below gives a summary of steps which can be used to separate the components of mixture 3. Study it and answer the questions that follow



Identify the processes labeled 1,2,3,4

Process 1 **(½mk)**

……

Process 2 **(½ mk)**

……

Process 3 **(½mk)**

……

Process 4 **(½mk)**

……

2. Ethan dioic acid can be used in the laboratory preparation of Carbon (II) Oxide.

a). Name the other reagent and the condition required for the production of Carbon (II) Oxide in this process.

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i. Name of reagent **(1mk)**

……

ii. Condition **(1mk)**

……

b) The volume of gas produced reduces when the gas is passed through an aqueous solution of

Potassium hydroxide

i. Explain why the volume reduces (1mk)

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ii. What will be the total volume of carbon (II) Oxide produced if 0.6moles of Ethan dioic acid is used in the reaction (all volumes measured at s.t.p, molar gas volume = $22.4dm^3$) **(2mks)**

iii). State two reasons as to why Carbon (II) Oxide is not easy to detect **(1mk)**

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c). Using dots (●) and crosses (x) to represent electrons, show how bonding occurs

between Carbon and Oxygen in Carbon (II) Oxide (1mk)

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d). i). Carbon (II) Oxide can be converted into Carbon (IV) Oxide, state one observation made when Carbon (II) Oxide is being converted to Carbon (IV) Oxide (1mk)

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ii). What is the role of carbon (IV) Oxide in the Solvay process (1mk)

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iii). Besides Carbon (IV) Oxide, name another gaseous substance that is used in the Solvay process (1mk)

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e). Sodium Carbonate is extracted from Trona which is a double salt with the formula $Na_2CO_3.NaHCO_3.2H_2O$

i). write down a balanced equation to show how Sodium Carbonate is obtained from trona **(1mk)**

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ii). State why trona is classified as a double salt **(1mk)**

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3. a). A compound **D** of molar mass 88 was found to have the following composition by mass.

Carbon = 54.54 %, Hydrogen =9.09 % and the rest was Oxygen. Find the molecular formula of the compound. **(3mks)**

……....

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b). Draw the structural formula of compound **D** **(1mk)**

c). Describe how compound **D** can be used to distinguish between Calcium Carbonate and Calcium Sulphate **(1mk)**

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d). i). Name and give the molecular formula of the next member of the homologous series to which compound **D** belongs (2mks)

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e). compound **D** reacted with another compound with the formula NH_2CONH_2.

i). Name two by-products of the reaction **(2mks)**

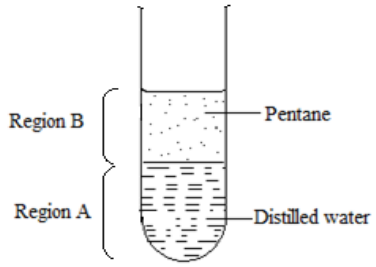
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ii). Draw the structural formula of the organic compound formed **(1mk)**

f). About 5 cm^3 of compound **D** was added into a boiling tube containing a mixture of distilled water and pentane. The mixture was shaken and then allowed to stand for about 2 hours. The figure below represents the set up at the end of the 2 hours.



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The P^H of the liquid obtained from region **B** at the end of the experiment was found to be 7.0. Explain this observation **(2mks)**

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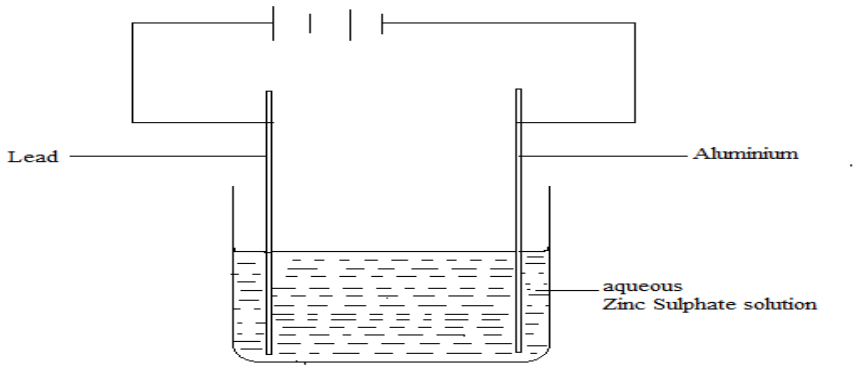
4. Zinc metal can be extracted from its ores by reduction using carbon or through electrolytic process.

a). Apart from Zinc blende, name another ore from which Zinc metal is extracted **(1mk)**

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b). In the electrolytic process, an electric current is passed through a series of cells containing aqueous solution of pure Zinc Sulphate. The figure below represents one of the cells used in the electrolytic process



i). Write down a balanced equation of reaction that takes place at the:

Anode **(1mk)**

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Cathode **(1mk)**

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ii). Name one major by-product of this electrolytic process **(1mk)**

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iii). A current of 15 Amperes was passed through the cell for 24 hours and 16 minutes. Calculate the moles of the product at the cathode (I F=96500C) **(2mks)**

iv). State **one** environmental effect which can be associated with the extraction of Zinc from its ores **(1mk)**

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c). The equation given below represents a redox reaction involving elements **X** and **Y**.

$$\mathbf{Y}^{2+}_{(aq)} + \mathbf{X}_{(s)} \longrightarrow \mathbf{Y}_{(s)} + \mathbf{X}^{2+}_{(aq)}$$

i). with a reason, identify the reduced species **(1mk)**

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ii). Write down the cell representation for the cell that will formed between the two elements **X** and **Y** (1mk)

……

……

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iii). Draw an electrochemical cell involving the half cell of element **X** and the half cell of Hydrogen **(2mks)**

d). The reaction between Chlorine and aqueous Potassium Iodide can be resented as shown by the equation below

$$Cl_{2\,(g)} + 2KI_{(aq)} \longrightarrow 2KCl_{(aq)} + I_{2(s)}$$

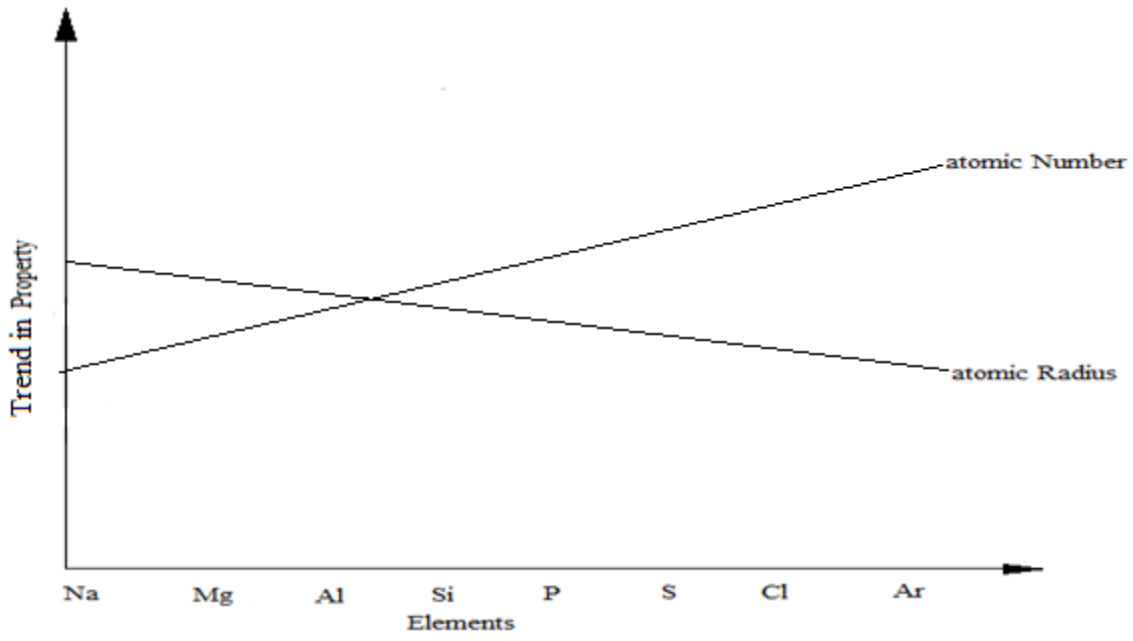
i). Explain why formation of Iodine is described as an Oxidation process **(1mk)**

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5. The figure below represents trends of some properties of period three elements. Study it answer the questions that follow.



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a). explain the trends shown by the atomic numbers and the atomic radii

i). Atomic number **(1mk)**

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ii). Atomic radii **(2maks)**

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b). on the same axes, sketch the trend of reactivity across the period **(1mk)**

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c). write down the electronic configuration of phosphorous and sulphur in the following compounds

i). H_3PO_4 (P=15) **(1 mk)**

……....

ii).$Na_2S_2O_3$ (S=16) **(1mk)**

……....

d). i). One of the elements given in the figure above is stored under water. Identify the element and give a reason as to why it is stored under water **(1mk)**

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ii). State **one** use of aluminium that can be associated with its malleability (1mk)

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e). Explain the observation that would be made if the chloride of Phosphorous is exposed to moist air **(2mks)**

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f). distinguish between the terms electro negativity and electron affinity as used in chemistry **(2mk)**

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6. A radioactive isotope of Uranium $^{238}_{92}U$ Undergoes decay by emitting a beta particle.

a). write down a balanced nuclear equation to show this decay process **(1mk)**

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b). i). The half life of Uranium -238 is 4.5 x10^9 years.

What is meant by the term half -life **(1mk)**

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ii). A sample of Uranium with 720 radioactive atoms decayed for 22.5 x 10^9 years. On the grid provided, plot a graph of number of radioactive atoms of uranium -238 against time in years

(3mks) **(PROVIDE A GRAPH PAPER)**

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iii). Use the graph to determine the number of radioactive atoms when time is 16.0×10^{9} years **(1mk)**

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c). Describe **two** ways in which a nuclear reactions differ from a chemical reaction **(2mks)**

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d). Explain the source of electrons in a radioactive process **(1mk)**

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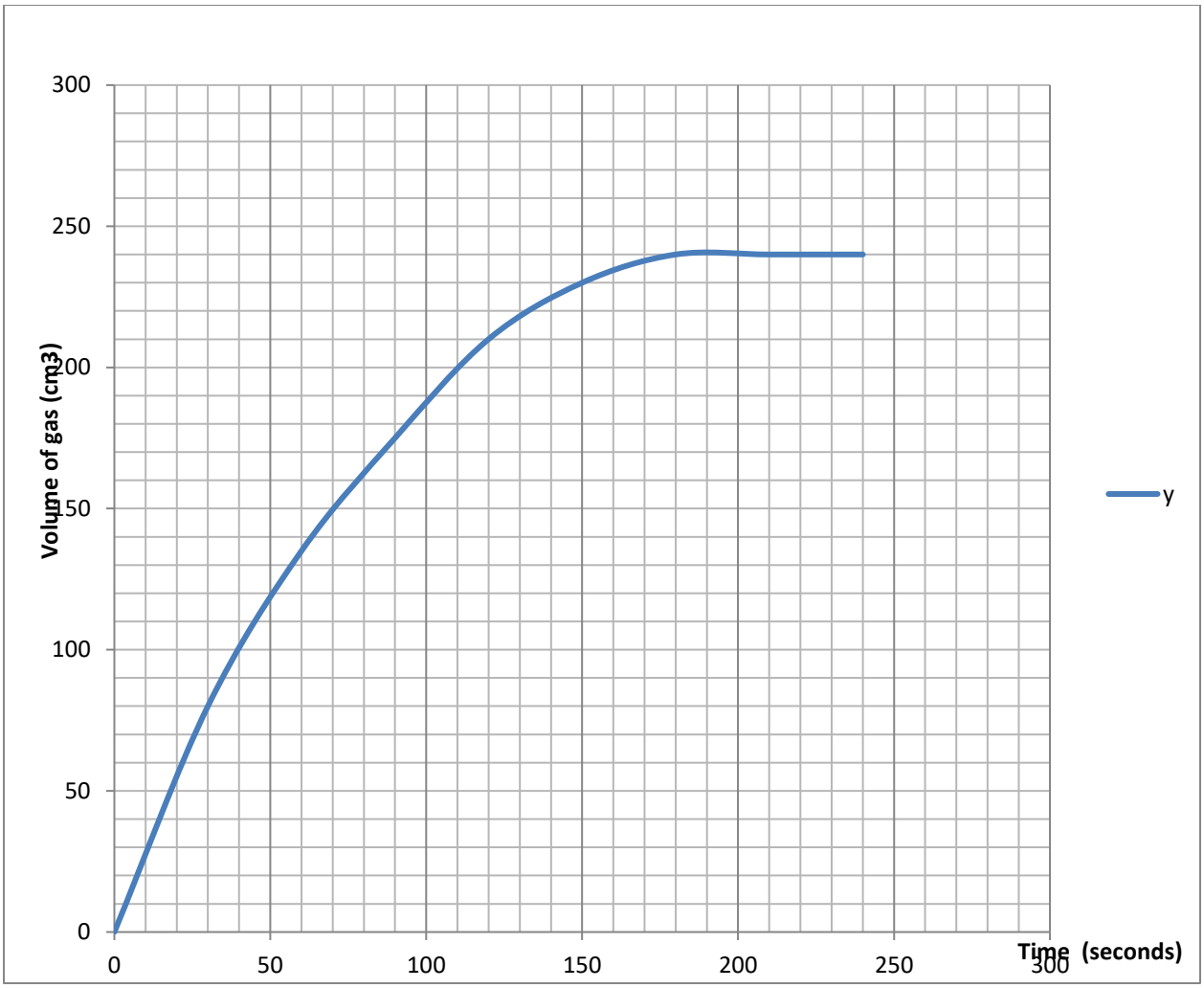
e). state one application of half life **(1mk)**

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7. In a class experiment to study the rate of reaction between Sodium Sulphite and dilute Hydrochloric acid, 1.26g of Sodium Sulphite was reacted with excess 2M Hydrochloric acid. The volume of Sulphur (IV) Oxide evolved was plotted against time as shown in the graph below.



a). Name one piece of apparatus that can be used to measure accurate volume of gas collected. **(1mk)**

……

b). What volume of 1.5M Hydrochloric acid would be needed to produce 4.76 litre of Sulphur

(IV) Oxide (all volumes measured at r.t.p, molar gas volume = 24.0dm^3) **(2mks)**

c). Use the graph to determine

i). The rate of production of gas at 120 seconds **(2mks)**

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ii). the rate of production of gas between 30 seconds and 140 seconds **(2mks)**

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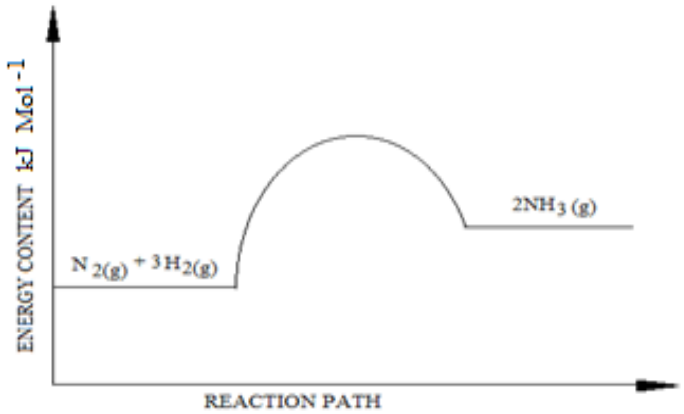
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d). On the same axes, sketch the graph obtained if the experiment was repeated using 15 cm^3 of 1.5M Hydrochloric acid. **(1mk)**

e). The reaction between Nitrogen and Hydrogen can be represented as shown in the energy cycle given below



Explain how the yield of Ammonia would be affected if

i). Temperature was reduced **(2mks)**

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ii). Pressure was increased (2mks)

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

233/3
CHEMISTRY
Paper 3 (PRACTICAL)
Time: 2 Hours 15mins

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided above.
- Sign and write the date of examination in the spaces provided.
- Answer **all** the questions in the spaces provided.
- KNEC mathematical tables and non-programmable electronic calculators may be used.
- All working **must** be clearly shown where necessary
- Candidates should check whether 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 Examiners Use Only

Question	Maxi. score	Candidate's score
1	24	
2	9	
3	7	
Total	40	

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1. **You are provided with:**
    - Sodium hydroxide solution **K**
    - **0.128M** hydrochloric acid solution **L**
    - Carboxylic acid solution **M**

Solution **N** is prepared by diluting **25**cm^3 of solution **K** with distilled water to 150cm^3 of solution.

You are required to;

a) Standardize solution **N** with solution **L**
b) Determine the reaction ratio between sodium hydroxide solution **K** and the carboxylic acid solution **M.**

Procedure I
Fill the burette with solution **L**. Pipette **25**cm^3 of solution **N** into a clean conical flask. Add **two** drops of **phenolphthalein** indicator and titrate with solution **L**.
Record your results in the table below. Repeat the titration two more times and complete the table below.

Table I

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

(4mks)

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

b) Calculate

i) The concentration of sodium hydroxide in mole per litre in solution **N** **(2mk)**

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ii) The concentration of sodium hydroxide in moles per litre in solution K **(2mk)**

Procedure II

Using a clean burette, place **16** cm^3 of solution **M** into a boiling tube. Take its initial temperature and record it in the table below. Using a clean measuring cylinder, place **4** cm^3 of solution **K** in the boiling tube. Stir the mixture immediately with thermometer and record the maximum temperature reached.

Repeat the experiment with other set of volume of **M** and **K** to complete table **II**.

N/B: Rinse the thermometer and boiling tube after each experiment.

Table II **(6mks)**

Volume of solution **M** (cm^3)	16	12	8	6	4	2
Volume of solution **K** (cm^3)	4	8	12	14	16	18
Final temperature (^oC)						
Initial temperature (^oC)						
Change in temperature (Δ**T**)						

a) On the graph paper provided plot a graph of Δ**T** against volume of sodium hydroxide solution **K** **(3mks)**

b) From the graph, determine the volume of sodium hydroxide, solution **K** required to neutralize the carboxylic acid **(1mk)**

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c) Calculate the volume of carboxylic acid solution **M** used for neutralization**.** **(1mk)**

d) Calculate:

i) Ratio between the volumes of solutions **K** and **M** **(2mks)**

ii) Concentration in moles per litre of carboxylic acid, solution **M.** (assume the volume ratio is the same as mole ratio) **(2mks)**

2. You are provided with:

- Solid **Q**
- Aqueous sodium hydroxide
- Dilute nitric (V) acid
- Wooden splint
- Potassium Iodide solution

Solid Q is **suspected** to be **lead (II) carbonate**.

a) From the reagents provided, select and describe three tests that could be carried out **consecutively** to confirm if solid Q is **lead (II) carbonate**. Write the tests and expected observations in the spaces provided.

i)

Test 1	Expected observations
(1mk)	(1mk)

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ii)

Test 2	Expected observations
(1mk)	(1mk)

iii)

Test 3	Expected observations
(1mk)	(1mk)

b) Carry out the tests described in (a) using solid Q and record the observations and inferences in the spaces provided

Test 1

Observations	Inferences
(½mk)	(½mk)

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Test 2

Observations	Inferences
(½mk)	(½mk)

Test 3

Observations	Inferences
(½mk)	(½mk)

3. You are provided with solid **T**.Carry out the tests and write your observations and inferences in the spaces provided.
   a) Place a third of solid **T** on a metallic spatula and burn it over a Bunsen burner flame

Observations	Inferences
(1mk)	(1mk)

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b) Place the rest of solid **T** in a boiling tube. Add about **8 cm^3** of distilled water. Shake the mixture well. Retain the mixture.

Observations	Inferences
(½mk)	

Divide the mixture into four portions of 2cm^3 each.

i) To the first portion of 2cm^3 of the mixture, add the **magnesium ribbon** provided.

Observations	Inferences
(½mk)	(½mk)

ii) To the second portion of the mixture, add about 1cm^3 of **acidified potassium dichromate (VI)** solution and warm.

observations	Inferences
(½mk)	(½mk)

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iii) To the third portion of the mixture, add 2 drops of **bromine water.**

Observations	Inferences
(½mk)	(½mk)

iv) Determine the **pH** of the mixture using the forth portion

Method used	Inferences
(1mk)	(½mk)

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

451/1
COMPUTER STUDIES
PAPER 1
TIME: $2^{1}/_{2}$ HOURS

Instructions to Candidates

- Write your name and Index Number in the spaces provided.
- This paper consists of two sections.
- Answer **ALL** questions in **section A**
- Answer **Question 16** and other THREE questions in section B.
- All answers MUST be written in the spaces provided on this question paper.

Section	Question	Maximum Scor	Actual Scor
A	1 - 15	40	
B	16	15	
	17	15	
	18	15	
	19	15	
	20	15	
TOTAL		**100**	

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SECTION A (40 MARKS)
ANSWER ALL QUESTIONS FROM THIS SECTION

1.Explain two ways in which computer can be used in the following areas. **(2mks)**

a) Entertainment industries

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b) Banking

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2.Write the following abbreviations in full. (2mks)

a) POST

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b) SVGA

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3.Suggest how in future the computer may be made user-friendly for persons who are visually challenged**. (1mk)**

……

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4.Explain three advantages of an inkjet printer. (3mks)

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5.Odhiambo a computer student at Lenana High School had the following problems.(2mks)

a) Headache

b) Backache

Give the likely cause of the above problems and give the likely solution for each problem.

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6.a) Highlight four factor to consider when choosing an input device. **(2mks)**

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b). State and explain **two** types of computer files **(2 mks)**

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Juma bought a computer with the following features.

i. 4. 0 GB primary storage
ii. 500.0 GB SATT HDDC
iii. Dual core processor
iv. 19^0 TFT VDU

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a) What do you understand by the term ***dual core*** computer? **(1mk)**

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7.Define a multimedia system and state two components of a multimedia system. **(2mks)**

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8.a) State the type of files which have the following file extensions and give an example for each **(2mks)**

i. . BAT……

ii. . XLS……

b) List four types of proof reading tools in a word process. **(2mks)**

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9.a) While Wekesa is editing a workbook data item, a ***# VALUE! Error*** occurred. Identify the cause of such error in the affected worksheet. **(1mk)**

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b) Distinguish between an embedded chart and a chart sheet. **(2mks)**

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10. State four importance of the internet to the society. **(2mks)**

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11. Draw a flowchart that can be used to find the area of a semi-circle. **(4mks)**

12. Define the following terms as used in desktop publishing **(2mks)**

i. Master page

……

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ii. Gutter

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……

13. Use two complements to complete the value of Y in eight bit binary notation. **(4mks)**

$$96_{10} + Y_{10} = 124_{10}$$

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14. a) Natural disaster can cause loss of data and programs. State two ways of ensuring that data and programs are not lost if a disaster strikes. **(2mks)**

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b) State two advantages of using robots in industries. (2mks)

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Section B (60 marks)

Answer Question 16 and any other three from this section.

15. a) State **three** functions of an assembler. **(3mks)**

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b) Highlight **three** characteristics of a good flowchart. **(3mks)**

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c) Give **two** examples of a ***web scripting*** languages. **(2mks)**

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d) Nekta company give a discount of **16%** for purchase worth **sh. 10, 000** and above; **10%** for purchase worth between **sh. 5000** and **10,000** and none for purchase worth sh. **5,000** and below.

Write a pseudo code for a program that would accept the value of a purchase, compute the discount, then display the new amount to be paid by a customer. **(7mks)**

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16. a) What is meant be each of the following terms as used in data security and controls. **(2mks)**

i. Confidentiality

ii. Threats

b) Jane a form four student was advised to partition a hard disk for her computer.

Explain two reasons that may have necessitated this. **(4mks)**

c) If one table in a database contains the fields: **EMPLOYEE – ID, LAST – NAME, FIRST – NAME** and **HIRE – DATE** and another contains the fields **DEPARTMENT, EMPLOYEE – ID** and **SALARY**, it is possible to establish a relationship between the two tables.

i. Name the type of such a database. **(1mk)**

ii. What type of relationship can be established between the tables? **(1mk)**

iii. Provide the most appropriate data types for each of the fields. **(3mks)**

d) A publishing firm designed the following publication using a DTP software.



i. Give two reasons why the firm prefer using DTP instead of Word Processors. **(2mks)**

ii. Identify four formatting features used in the designing the publication. **(2mks)**

18.a) i) Give any TWO ways of representing a negative number in computer system**.(2 marks)**

ii) The following eight-bit pattern represents the two's complement of an integer: 110001001.

What is the decimal equivalent? **(2 marks)**

iii) Subtract the binary number 0011001 from 10110010. **(2 marks)**

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b) Describe the following types of errors in data processing, giving examples. **(3mks)**

(i) Truncated

(ii) Transposition

(iii) Transcription

c) Give the mode of processing that can be used in the listed situations. Explain your answer. (6 marks)

(i) Generating student's report forms at the end of the term.
(ii) Railway ticket reservation.
(iii) Point of sale terminal in a supermarket.

19. a) Explain the meaning of the following system characteristics. **(4Marks)**

i) Entropy
ii) Controls

b) State the three functions of an information system. **(3Marks)**

(c) The Ministry of Education is changing the education system in Kenya from 8-4-4 to a Competency Based Curriculum (CBC) system by using a few schools to test the new system.

a) Identify the type of change over system being used here. **(1 mark)**
b) What would be the advantage of using this changeover strategy? **(2 marks)**
c) State any three contents of a feasibility study report. **(3 marks)**
d) State two ways in which ICT has been used in the horticulture industry. **(2 marks)**

20. a) Describe **three** ways in which computers have positively impacted on education. **(3 marks)**

b) i. With aid of a diagram, describe a Star topology. **(4 marks)**

ii. State two advantages and two disadvantage of Star topology. **(4 marks)**

c) i. Define the term piconet. **(1 mark)**

ii. What is the function of a Repeater in networking? **(1 mark)**

d.Explain **two** factors you would consider before enrolling for an ICT course in a College. (2mks)

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

451/2
COMPUTER STUDIES
PAPER 2
(PRACTICAL)
TIME: 2 ½ HOURS
Instructions to candidates

- Type your name and Index No at the top right hand corner of each printout.
- Write your name and Index No on the CD
- Write the Name and version of software used in each question on the answer sheet
- Passwords should not be used
- Answer all the questions
- All answers must be saved in a CD
- Make printouts of the answers

Candidates should check the question paper to ascertain that all pages are printed and no questions are missing

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1. The following are the KCSE results for a certain school.

BARAKA HIGH SCHOOL													
NAME	**ENG**	**KSW**	**MAT**	**BIO**	**PHY**	**CHE**	**GEO**	**ART**	**COM**	**FRE**	**AVE. POINT MARK**	**OVERALL GRADE**	**RANK**
Njiru	B+	B	A	B-	A	B	B-	A-					
Manwa	C-	B+	A	A-	A	C	A-		A				
Kalulwe	B+	B	A	B+	A	B+	B	A					
Leonard	B+	A	A	C-	A	A-	C+		B+				
Fred	A	A	A	B	A	A	A-			B+			
Njogu	B+	B+	A	A-	A	A	A-	C+					
Muange	B+	B	B	A	A	A+	C+			A			
Kiprono	B	B+	A	A-	C	B+	A		A-				
Wekesa	B+	A	C+	A	B-	B	A		A				
Ndiragu	C+	B+	B	B	A	A	B+	D+					
Opiyo	A-	B	B+	D+	A-	B	B	B-		A-			
Mean													

a.i. Enter the data using the given values above in excel and save your work as KSSEXCEL **(15marks)**

ii. Two rows below the table above determine point scored by each student per subject. given that **(7marks)**

Grade	A	A-	B+	B	B-	C+	C	C-	D+
Value	12	11	10	9	8	7	6	5	4

iii. Rename sheet1 to "Broadsheet" **(1mark)**

b.Perform the following calculations.

i. Get the average point **(4marks)**

ii. Determine each student overall grade **(5marks)**

iii. Determine each students rank using the Ave. Point Mark. **(4marks)**

d. Calculate Subject Mean **(4marks)**

e. **Draw** a Column Chart to display Subject performance **(4marks)**

- Title as "SUBJECT ANALYSIS"
- **Place** the legend at the bottom of the graph **(2marks)**
- **Save** the chart on a new sheet and name it Subject Analysis **(2marks)**

f. Print

i) Broadsheet with formulae displayed **(3marks)**

ii) Subject Analysis **(1marks)**

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2. You are the database administrator of Malcolm Computer Company which has branches all over the country. To maximize its profits, the company closely monitors its branch performance using computer. As the database administrator you are to use database to maximize the information required by the company.

a. Create a database file and name it MALCOLM **(1Mark**)

b. Create two tables named branch details and sales details from fields listed below **(4Marks)**

Branch code	branch name	Item code	profit	county	item	no of employees

c. assign appropriate Primary key for the two tables and create relationship between them (3Marks)

d.(i) Create forms for Branch and sales Details tables and save as branch and sales form respectively **(5Marks)**

(ii) Use the forms to enter the records below **(10 Marks)**

Branch Code	Branch Name	County	No of Employees	Item Code	Item	Profit
20100	Millimani	Nairobi	20	207	Keyboard	
43200	Nakuru	Narok	35	304	Monitor	
32100	Westgate	Machakos	25	104	UPS	
67400	Wilmer	Eldoret	30	809	Mouse	
52700	Kathiani	Kondele	26	802	Printer	
73900	Langas	Kisumu	31	630	Switch	
81400	Ngamia1	Lodwar	15	307	Cat 6 cables	
90100	Mtwapa	Mombasa	20	876	Router	
43300	Shoppers	Mumias	15	743	Motherboard	

(iii) **(3 Marks)**

Branch code	Profit
20100	800,675
43200	1,210,256
32100	567,000
67400	750,555
52700	451,000
73900	741,200
81400	500,450
90100	678,500
43300	700,000

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e.(i) Create a query to calculate and display the sales from every county given that the profit is 12% the sales amount. Include all the necessary details/ fields in your query. **(5Marks)**

(ii) Save it as sales query **(2Marks)**

f. (i) Create another query to display counties with sales greater than 6 million. Include all the necessary details/ fields in your query. **(3 Marks)**

(ii) Save it as leading sales **(2 Marks)**

g.(i) Create a tabular report with portrait orientation from sales query. Display the fields in the following order; branch code, branch name and sales **(4 Marks)**

(ii) Compute the total sales and place it below the profit column **(2 Marks)**

(iii) Remove the report pagination and insert your name and index number and save the report as sales report **(2 Marks)**

h.Print the branch details table, Sales details form (only one page), sales query, leading sales and sales report **(5 Marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

313/1

CHRISTIAN RELIGIOUS EDUCATION

PAPER 1

TIME: 2½HOURS

INSTRUCTIONS TO CANDIDATES

- *Answer any **five** questions in this paper in the answer booklet provided*

Questions	1	2	3	4	5	6	Total
Score							

1.a) State seven reasons why the Bible is called the word of God. **(7mks)**

b) Outline the translation of the Bible from the original languages to the present local languages **(7mks)**

c) Identify six ways in which the Bible is misused in Kenya today. **(6mks)**

2.a) Outline the background to the call of Abraham. **(8mks)**

b) Give six instructions given to Abraham by God concerning the Jewish circumcision. **(6mks)**

c) Explain six reasons why circumcision was important to the Jewish. **(6mks)**

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3. a) Outline **seven** reasons why Samuel was against kingship in Israel **(7mks)**

b) Describe the contest between Prophet Elijah and prophets of Baal at Mount Carmel. (1st King 18:17 - 40) **(8marks)**

c) Give lessons learnt about the nature of God from the contest at Mount Camel **(5mks)**

4. a) Outline ways in which Prophetic messages were written**.** **(6mks)**

b) Identify any **four** visions of Amos and state their significance **(8mks)**

c) Identify ways in which God speak to Christians today. **(6mks)**

5. a) Identify seven evils condemned by Prophet Jeremiah during the temple sermon. **(7mks)**

b) Describe the fall of Jerusalem in Jeremiah 39. **(7mks)**

c) Outline six ways in which Christians can fight social evils in the society today. **(6mks)**

6. a) Outline seven methods used in choosing a marriage partner in traditional African community. **(7mks)**

b) Explain the Africans understanding of hierarchy of beings. **(7mks)**

c) Outline six moral values acquired during initiation in African traditional community. **(6mks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

CRE PP2

END TERM 2 EXAMS

1. (a) Outline ***seven*** prophecies made by prophet Jeremiah concerning the messiah. **(7 marks)**
   (b) Identify ***seven*** teachings of John the Baptist. **(7 marks)**
   (c) How do Christians prepare themselves for the second coming of messiah? **(6 marks)**

2. (a) Give ***seven*** reason why Jesus was rejected in His town of Nazareth**.(7 marks)**
   (b) Describe the forgiveness of the sinful woman in the house of Simon the Pharisee. (Lk 7:36-8:3) **(7 marks)**
   (c) State ***six*** reasons why Christians should forgive one another. **(6 marks)**

3. (a) Describe how Jesus celebrated the Last Supper with His disciples. Luke 22: 14 – 38. **(7 marks)**
   (b) Explain the teachings of Jesus on wealth and poverty. **(8 marks)**
   (c) Identify ***five*** ways in which Christians should use their wealth today.**(5 marks)**

4. (a) Outline Peter's teaching about Jesus in his Pentecost message. **(6 marks)**
   (b) Describe Paul's teaching on unity of Christians using the analogy of the Vine and Branches. **(7 marks)**
   (c) State ***seven*** ways of promoting unity of believers in the Christian community today. **(7 marks)**

5 (a) Identify **five** sources of Christian ethics. **(5 marks)**
   (b) Explain the Christian understanding of marriage. **(7 marks)**
   (c) State problems related to family life today**.** **(8 marks)**

6 (a) State ***Seven*** rights of citizens in Kenya. **(7 marks)**
   (b) What is the church doing to transform the society economically? **(7 marks)**
   (c) Give reasons why Christians oppose the death penalty as a form of punishment. **(6 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

101/1

ENGLISH

Paper 1

(Functional Skills)

Time: 2 Hours

Instructions to Candidates

- *Write your name and index number in the spaces provided above.*
- *Write the date of examination in the spaces provide.*
- *Answer **all** questions in this question paper.*
- *All your answers must be written in the spaces provided in this paper.*
- *Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.*

For Examiners Use Only

Question	Maximum Score	Candidate's Score
1	20	
2	10	
3	30	
Total Score		

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1.Functional Writing (20 marks)

You have just graduated from the university after pursuing your dream course. It is no mean feat because your life since childhood has been marked by multiple challenges which you have however, conquered

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2.Cloze Test (10 marks)

All the ordinary Kenyans and their leaders, irrespective of their political 1 _____, must fully 2_____ the war on drugs. The consequences of drug 3_____ are devastating, and many have been moved to tears on seeing young people wrecked by these substances. When these drugs are exported, 4_____have same effects on the users overseas. And this is why governments in the west, including the United States, invest heavily in 5_____drugs.

The extradition of two Kenyans and their suspected foreign accomplices to the US is a manifestation of the determination 6_____break up cartels that ruin American lives. It is, 7_____, unfortunate that anybody would wish to politicize such a 8_____matter. Kenya is bound by International conventions to co-operate and facilitate the arrest of criminals suspects on its own. If the suspects can prove they have 9_____to do with drug 10 _____, there is no reason they should not return home as soon as possible.

3.Oral Skills (30 marks)

a) Read the short poem below and answer the questions that follow.

Three Pool Player Seven at the Golden Shovel

We read cool. We
Left school. We
Lurk late. We
Strike straight. We
Sing sin. We
Thin gin. We
Jazz June. We
Die soon. *-Gwendolyn Brooks*

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a) List all the pairs of rhyming words in the poem. **(1 mark)**

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b) What effect is created by the rhyming words in the poem? (1 mark)

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c) Apart from the rhyming words, how else is the effect mentioned in *b)* above achieved in the poem. **(1 mark)**

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b) "*Come ye to me and I will* ***heel*** *your* ***soles.****"*

a) Classify the genre above. **(1 mark)**

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b) Give one function of the genre above. **(1 mark)**

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……

c) Identify one characteristics of the genre above. (1 mark)

……

……

c) Identify the silent letter (s) in each of the following words. (3 marks)

a) Mutton _____

b) Sachet _____

c) Sword _____

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d) From the following set of words identify the odd one out with regard to the pronunciation of the underlined letters. (3 marks)

a)	Critically	Occasionally	Academically
b)	Hop	rod	hope
c)	Soar	saw	so

e) Provide a homophone for each of the following words. **(3 marks)**

a) Choose _____

b) Quire _____

c) Story _____

f) The debate club of your school has been invited to participate in a debate contest at a school in Kisumu. After a lengthy discussion with the Principal, they were allowed to travel to Kisumu to participate in the contest. State four negotiation skills they might have used to convince the Principal. **(4 marks)**

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g) Imagine that the mayor of a city in Australia has visited your school to address the students. How would you introduce him to the audience? **(1 marks)**

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h) Against each of the following sentences state whether you would end with a rising or falling intonation. (3 marks)

a) Why did you oversleep? _____

b) What a tragic experience that was! _____

c) My younger sister has identical twins. _____

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i) Underline the stressed syllable in the following words. **(2 marks)**

a) Reply

b) Absent (*adjective*)

j) Read the following telephone conversation and then answer the questions that follow.

Secretary: (*phone rings*) Hello Masomo Secondary School. How may I help you?

Caller: I want to speak to my mother.

Secretary: May I know who your mother is please.

Caller: (*Impatient and irritated*) I have said I want to speak to my mother.

Secretary: Excuse me, I'm sorry I don't know who your mother is. Could you please tell me her name?

Caller: (*Shouting*) You have been working in that institution for the last ten years and you don't know Mrs Marita?

Secretary: (*politely*) Oh! Mrs Marita? She has just stepped out shortly. May I take a message for her please?

Caller: (*bangs the receiver*)

a) Identify any **three** instances that show the caller's lack of telephone etiquette**.** **(3 marks)**

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b) How can you tell that the secretary observes professional conversational skill in the above telephone conversation? **(2 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

101/2

ENGLISH

(COMPREHENSION, LITERARY

APPRECIATION AND GRAMMAR)

$2^1/_2$ HOURS

Kenya Certificate of Secondary Education

INSTRUCTIONS

- *Write your name and index number in the spaces provided above.*
- *Answer all the questions in this question paper.*
- *All answers must be written in the spaces provided in the question paper.*
- *Your responses must be written in English*

For examiner's use only

Question	Maximum Sco	Candidate's Score
1.	20	
2	25	
3	20	
4	15	
Total	80	

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Question 1: Comprehension

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

Meat is a common component of human diet. The health benefits of red and white meat have for long been the **centre of debates**. Many debaters favour white meat as a healthier option. However, dietitians argue otherwise. The nutritional component in meat is proteins and the content in proteins in white meat is the same as that of red meat. It is also important to note that most types of meat are considered white when they are indeed red. Pork is mistaken to be white meat while it is actually red.

What determines whether meat is red or white is the myoglobin concentration. Myoglobin is the equivalent of haemoglobin in edible animals. The iron available in red meat is higher and more readily available to the body than the kind found in white meat. If your intention is to boost your haemoglobin levels, it is important to include red meat in your diet. Meat is very essential in your diet, but it does not mean one cannot live without it.

Many people wonder whether meat leads to weight gain. Even though it is a source of proteins in the diet, if you exceed your requirements by eating larger portions, the extra is converted into fat for storage, which is what leads to weight gain. Meat consumption has also been associated with other unhealthy lifestyle habits especially alcohol intake. This is also a **catalyst** for weight gain. But for those working on losing weight, skipping meals is not an advisable strategy as it leads to rising levels of cholesterol or having a higher body-fat percentage.

Boiled, deep fried, fried or roasted meat, which is healthier? Whether you boil, fry or roast meat, what determines how healthy your meat is, is the leanness. Boiled meat with a lot of fat would be unhealthier compared to roasted lean meat. It is also known that roast meat is associated with cancer, but generally boiling would be a better option compared to frying and roasting as long as the meat is lean. For vegans, the most prominent nutrient in meat that they will lack is vitamin B12; in some instances, especially for strict vegetarians, they will also lack calcium which can be compensated with supplements.

Does refrigeration of meat affect nutritional value? Any food that you take should be as close as possible to its natural form because it always loses its nutritional value with time. Refrigeration does not prevent food from losing its nutrients either and, therefore, foods should be consumed while fresh. Refrigeration or freezing only slows the process of food degradation, but does not stop it completely.

On whether meat is carcinogenic, the World Health Organization categorizes processed meats as carcinogenic, but excess consumption of red meat is said to be a possible cause of cancer. **Processed** meat includes sausages, hams and hotdogs.

Adapted from Daily Nation, Tuesday October 27, 2020

QUESTIONS

a. From the first paragraph, what misconception do people have about pork? **(2marks)**

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b.Why do dieticians deny the claim that white meat is healthier than red meat? **(2marks)**

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c.Make notes to explain how meat eating is related to weight gain **(3marks)**

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d.What risk do vegans and strict vegetarians face in their diet? Briefly explain how they can overcome this challenge. **(3marks)**

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e. Why does the writer recommend consumption of fresh foods? (**2 marks)**

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f. According to the passage, what is the main difference between red and white meat? **(2marks)**

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g.In your opinion, can one live without eating meat? Explain your answer. **(2marks)**

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h. How does refrigeration help in preserving food? **(1mark)**

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

(i) Catalyst

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(ii) Centre of debates

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(iii)Processed

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. **Blossoms of the Savannah. Henry ole Kulet**

Read the excerpt below and answer the questions that follow. (20 marks)

Her dream was rudely and violently interrupted by a thunderous bang and a loud roar of laughter. She woke up with a start, jumped up to her feet and stared at the door with wide panic-stricken eyes. For a moment she could not figure out her surroundings and called out the name of her sister Taiyo. She was terrified. The door flung open and Olarinkoi staggered in. He was stone drunk. Resian stared at him **unblinkingly** as he walked towards her and

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she backed off terrified, squeezing herself flatly against the wall. He followed her there and got hold of her shoulders and shook her violently glaring at her with his glittering eyes.

"You silly thing," he thundered angrily. "I tell you to prepare food and you refuse to do so, eh? Today you will know who the owner of this home is. If you are still in doubt, let me tell you frankly that from today on you are my wife, hear that, eh? You are my wife. For a long time you have been sneering at me, showing how highly educated you are. Today we shall see how educated your body is! Yes, eh shall see!''

He got hold of her hand and began dragging her into the other room. At first she did not understand his intention until he began unfastening her buttons with his rough trembling hands. Then the truth came, and with it, terror and panic. She tried to get away from him, but he held her **effortlessly** as he brutally continued fumbling with her dress, trying to loosen it. She screamed as loudly as she could while she pushed him away and thrashed frantically about. But that did not deter him and he totally ignored her screams holding her more firmly with his strong arms. Against her loud protest, he tore her garments and began to push her towards the bed.

Then desperately she took the last chance of self-defense and self-preservation. **Mustering** all her strength, she thrust his thumb the flesh like a ferocious animal and tenaciously held onto it, tugging at it fiercely like a lioness. She could feel the flesh tearing and she tasted the salt of his blood as it filled her mouth but she clung unto the thumb as Olarinkoi **howled** with pain.

Questions

a. Make notes on the content of Resian's dream just before the excerpt (4Mks)

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b. Discuss one character traits of Resian in this excerpt. (2Mks)

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c. What has greatly changed in Olarinkoi in this excerpt compared to his earlier conduct in the novel towards Resian? **(3Mks)**

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d. Identify and illustrate two aspects of style in this excerpt. **(4Mks)**

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e. Explain **two** major issues raised in the excerpt**.** **(4Mks)**

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f. Explain what happens immediately after the excerpt**.** **(3Mks)**

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g. "Today we shall see how educated your body is" Rewrite in reported speech**.** **(1Mk)**

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h. Explain the meaning of the following expressions in the passage**.** **(4 Mks)**

(i). Unblinkingly**…….**

(ii). effortlessly**…….**

(iii). Mustering **…….**

(iv). Howled **…….**

QUESTION 3: POETRY

Read the poem below and answer the questions that follow

TOUCH BY HUGH LEWIN

When I get out
I'm going to ask someone
Touch me
Very gently please
And slowly,
Touch me
I want
To learn again
How life feels

I've not been touched
For seven years
For seven years
I've been untouched
And I've learned
To know now
The meaning of
Untouchable.
Untouchable – not quite
I can count the things
That have touched me.

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One: fists
At the beginning
Fierce mad fists
Beating beating
Till I remember
Screaming
Don't touch me
Please don't touch me

Two: paws
The first four years of paws
Every day
Patting paws, searching
Arms up, shoes off
Legs apart-
Probing paws, systematic
Heavy indifferent
Probing away
All privacy.

I don't want fists and paws
I want
To want be touched
Again
And touch.
I want to feel alive
Again
I want to say
When I get out
Here I am
Please touch me.

(From poets to the people, edit by Barry Feinberg)

Questions

(a) Where do you think the person is? Briefly explain your answer. **(3marks)**

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(b) What do you the persona means by "touch"? **(3marks)**

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(c) Using two illustrations, describe the persona's experience during the seven years. **(4marks)**

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(d) What is the significance of the word 'paws'? **(2marks)**

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(e) Which device does the poet use to reinforce the theme? **(2marks)**

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(f) Explain the meaning of the following words as used in the poem. (2marks)

i) Prodding

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ii) Indifferent.

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(g) What does the poet use to reveal about human need? **(4marks)**

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Question 4: GRAMMAR (15 Marks)

a.Rewrite the following sentences according to the instructions given after each. Do not change the meaning.

i. Immediately the guests arrived, the choirs began singing. (Begin: No sooner…)

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ii. He was very angry. He would have resigned if I had not talked him out of it.(Begin : So…)

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iii. The students saw the uselessness of violence. They changed their strategy.

(Rewrite as one sentence using a participle)

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b.Change the following passive sentences into active. (3 marks)

I was called by the teacher.

……

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i.) Chinese is taught in many colleges now.

……

……

ii.) The winning team was given a trophy by the organizers

……

……

c.Complete the blanks with the given adjectives in their correct order. (3 marks)

i.) The house I bought has**…….**(old, leather, brown, comfortable) furniture.

ii.) You might have to buy the student **……..……..**(new, several, covered, exercise) books.

iii.) We were hosted by **……..…….**(tall, Nigerian, charming, three) gentlemen.

d.Complete the sentences using an auxiliary and the correct form of the verb given in brackets.

i.) Reports coming in indicate that a train **…….**(derail) at Kibwezi.

ii.) I **……** (lie) in bed thinking of getting up when the doorbell rang.

iii.) The students **……** (watch) the last episode of the soap opera.

e.Give a word that means the same as the underlined phrasal verb. (3 marks)

i.) I could not **<u>put up with</u>** the situation much longer

……

……

We were nearby when the bomb **<u>blew up</u>**.

……

……

ii.) It is time you **<u>gave up</u>** drinking

……

……

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

Kenya Certificate of Secondary Education

101/3 – ENGLISH – Paper 3

(Creative composition and essays based on set texts) 2 ½ hours

Instructions

a) Answer three questions only.

b) Question one and two are compulsory

c) In question three choose only one of the optional texts you have prepared on.

d) Where a candidate presents work on more than one optional text, only the first one to appear will be marked

e) Each of your essays must not exceed 450 words

f) All answers should be written in the answer booklet provided

For Official use only

Question	Maximum Score	Candidate's Score
1	20	
2	20	
3	20	
TOTAL	60	

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1.Imaginative Composition. **(20 MARKS)**

Either

a) Write a composition beginning with the following statement:

"As I got closer to my home that night, I realized that the commotion and noise I had heard on getting off the bus came from my elder brother's house.

b) Write a composition explaining the role of student leaders in a secondary schools.

2.**THE COMPULSORY SET TEXT**

Henrik Ibsen*: A DOLL'S HOUSE* **(20 MARKS).**

"Appearance can be misleading." Write an essay to show the validity of this statement drawing illustrations *from Henrik Ibsen's A Doll's House.*

3.OPTIONAL TEXTS

a) Memories we lost and other Stories by Chris Wanjala

Superstition can never solve a problem in life. Justify this statement basing your illustrations using Memories We lost by

b) Inheritance by David Mulwa

Betrayal by leaders makes subjects disillusioned. Discuss this statement.

The pearl by John Steinbeck

c)Social stratification in the society breeds inequality. Write a composition to show the truthfulness of this statement.

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: …….. DATE: ……..

312/1
GEOGRAPHY
Paper 1
Time: 2¾ hours

INSTRUCTIONS TO STUDENTS

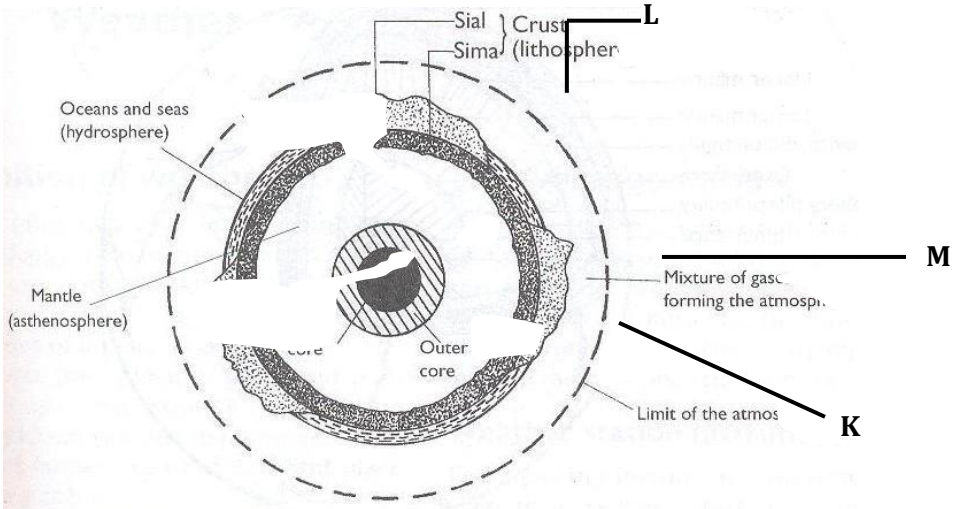
- *This paper has **two** sections **A** and **B***
- *Answer **ALL** the questions in section **A**. In section **B** answer questions **6** and any other **TWO** questions.*

SECTION A

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

1.(a) Name any ***two*** constituents of the atmosphere. (2 marks)

(b) The diagram below represent the structure of the earth. Use it to answer the questions that follow.



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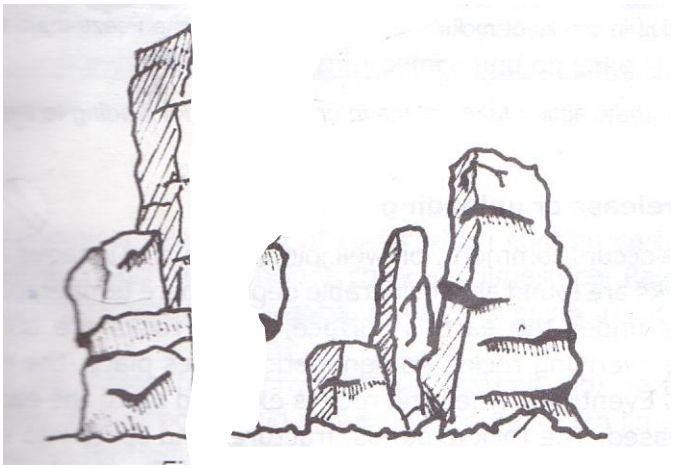
Name the parts marked**K, L**and **M.** **(3 marks)**

2.(a) State ***three*** characteristics of extrusive igneous rocks. **(3 marks)**

(b) Name the metamorphic equivalent of the following rocks. **(2 marks)**

- Peridotite
- Mud stone

3.Use the diagram below to answer the questions that follows.



(a) Identify the weathering process shown above. **(1 mark)**

(b) Describe how rocks are weathered through the above process. **(4 marks)**

4.(a) Differentiate between till deposits and fluvio-glacial deposits. **(2 marks)**

(b) Describe how roche mountonee is formed. **(4 marks)**

5.(a) State ***two*** conditions which influence wind erosion. **(2 marks)**

(b) Name ***two*** features from water deposition in arid areas. **(2 marks)**

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SECTION B

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

6. Study the map of Migwani 1:50,000 (sheet 151/1) provided and answer the questions that follow.

(a) (i) Give the six figure grid reference of Itoloni dam. **(1 mark)**

(ii) What is the bearing and direction of Muanzoa rock outcrop from Nzeluni school? **(1 mark)**

(iii) Give the position of Nzia hill by latitude and longitude. **(2 marks)**

(b) (i) Measure the distance of the All Weather Road loose surface from Migwani to the end in the North West near Thokoa. Give your answer in metres. **(2 marks)**

(ii) Calculate the area bounded by the dry weather road and the All Weather Road loose surface to the North West. **(2 marks)**

(c) (i) Name the ***three*** social functions of Migwani town. (**3 marks)**

(ii) Draw a sketch section along line JK. **(2 marks)**

On it, mark and name the following features:

- Dry weather road **(1 mark)**
- Steep slope **(1 mark)**
- Hill **(1 mark)**

(d) (i) Describe the relief of the area shown on the map extract. **(5 marks)**

(ii) Citing evidence from the map explain ***three*** factors that favour livestock keeping. **(6 marks)**

7.(a) (i) What is a weather station? **(2 marks)**

(ii) Explain ***two*** characteristics of Stevenson screen. **(4 marks)**

(b) (i) Describe how a hygrometer is used to measure relative humidity. **(3 marks)**

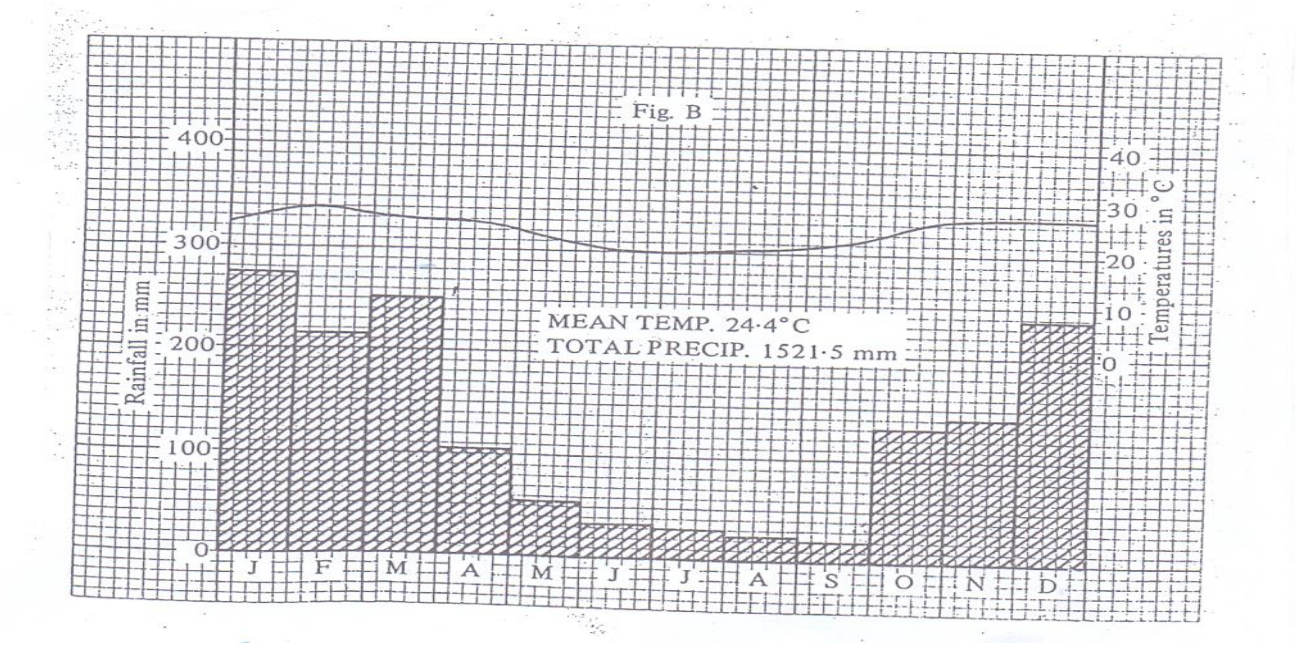
(ii) State ***two*** reasons why the recording of data at the school weather station may be inaccurate. **(2 marks)**

(iii) Give the reason why air cools as it rises. **(2 marks)**

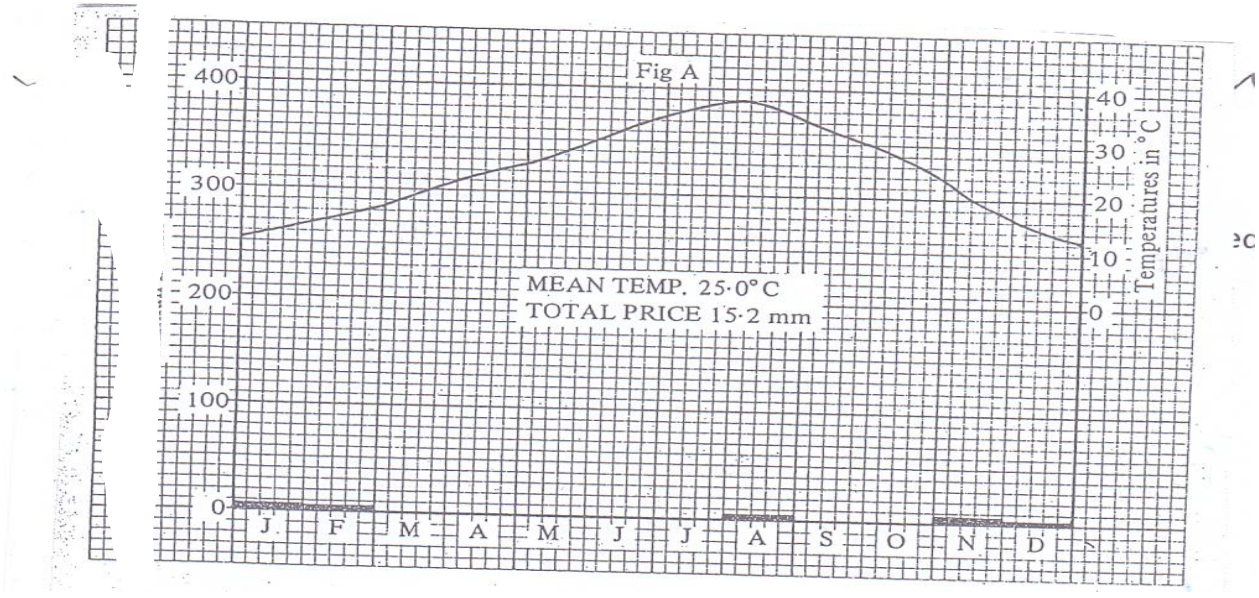
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(c) The graphs below shows climate characteristics of two stations in Africa. Use them to answer questions (i) and (ii).

GRAPH 1



GRAPH 2



(i) Name the type of climate represented by each graph. **(2 marks)**

(ii) Describe the characteristics of the climate represented by each graph. **(8 marks)**

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(iii) State ***two*** negative effects of desertification. **(2 marks)**

8.(a) Distinguish between orogenic and epeirogenic earth movements. **(2 marks)**

(b) Describe the origin of African plate according to the theory of continental drift. **(4 marks)**

(c) Explain how the following causes earth movement

- Convectional currents in the mantle **(3 marks)**
- Gravitative pressure **(3 marks)**

(d) State ***three*** factors influencing folding of sedimentary rocks. **(3 marks)**

(e) Identify the fold mountain ranges formed during the following orogenies.

- Alpine **(1 mark)**
- Hercynian **(1 mark)**

(f) With the aid of well labelled diagrams, describe how fold mountains are formed. **(8 marks)**

9.(a) Distinguish between river regime and river discharge. **(2 marks)**

(b) (i) State ***three*** factors influencing river transport. **(3 marks)**

(ii) Describe ***three*** processes through which a river transports its load. **(6 marks)**

(c) With the aid of a well labelled diagram, describe how a river braid is formed. **(6 marks)**

(d) Students of Sabaki Secondary School carried out a field study on river rejuvenation on River Athi.

(i) State ***three*** causes of river rejuvenation they found out. **(3 marks)**

(ii) Name ***three*** features formed by river rejuvenation they are likely to have identified. **(3 marks)**

(iii) Identify ***two*** problems they may have encountered during the field study. **(2 marks)**

10. (a) (i) What is soil? **(2 marks)**

(ii) Identify ***two*** components of soils. **(2 marks)**

(iii) Differentiate between soil structure and soil texture. **(2 marks)**

(iv) Name***two*** types of soil according to soil texture. **(2 marks)**

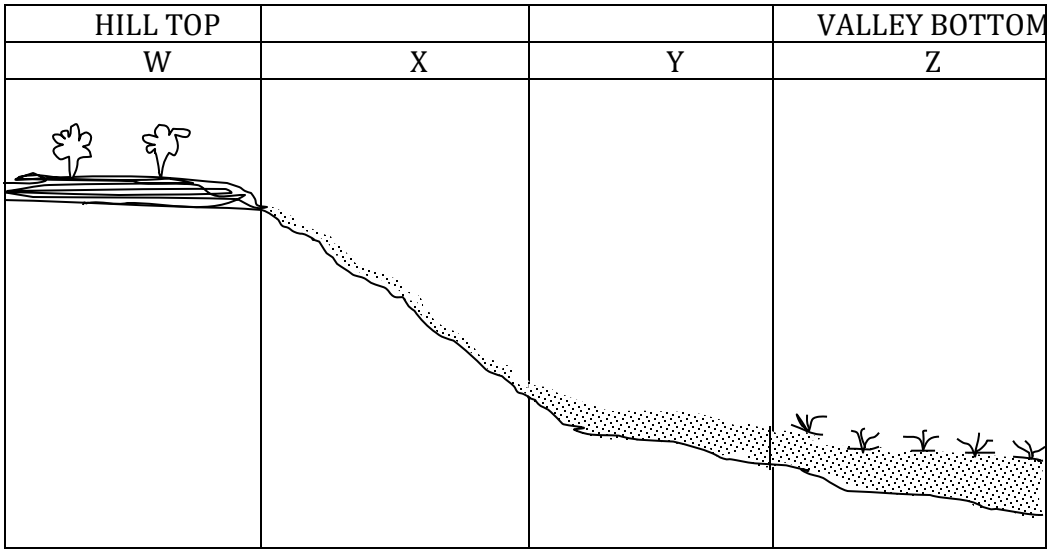
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(b) Explain how the following factors influence the formation of soil.

(i) Climate **(2 marks)**

(ii) Topography **(2 marks)**

(c) The diagram below shows a soil catena.



(i) Name the type of soils found in position **W** and **Z**. **(2 marks)**

(ii) State ***two*** characteristics of soils found in section marked **W** and **Z.** **(4 marks)**

(d) Explain ***two*** causes of chemical soil degeneration. **(4 marks)**

(e) State ***three*** measures of conserving soils. **(3 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

312/2
GEOGRAPHY
Paper 2
Time: 2¾ hours

INSTRUCTIONS TO STUDENTS

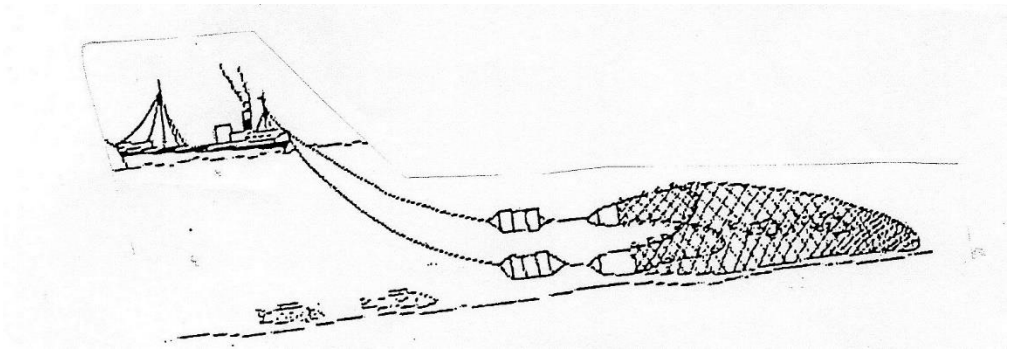
- *This paper has **two** sections **A** and **B***
- *Answer **ALL** the questions in section **A**. In section **B** answer questions **6** and any other **TWO** questions.*

1.State **five** ways in which the Kenya government assists dairy farmers **(5 marks)**

2.(a) What is polder? **(2 marks)**

(b) State **three** benefits of the Zuyder Zee project in the Netherland **(3 marks)**

3.(a) Identify the fishing method represented by the diagram below **(1 mark)**



(b) State **three** ways through which fish farming contributes to the economy of Kenya. **(3 marks)**

4.(a) State **three** ways of promoting Eco-tourism in Kenya **(3 marks)**

(b) State **two** reasons why domestic tourism should be encouraged in Kenya. **(2 marks)**

5.(a) Define is energy crisis? **(2 marks)**

(b) State **three** advantages of using Hydro-Electric power **(3 marks)**

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SECTION B

Answer question 6 and any other questions from this section.

6.The table below shows the prices of sugar in Kenya Shillings per ton in some countries in Africa. Use it to answer question (a)

YEAR	KENYA	SOUTH AFRI	TANZANIA	ZAMBIA
2014	95,400	61,927	68,702	84,447
2015	111,713	67,462	66,985	93,798
2016	110,878	65,173	90,649	86,832

(a) (i) Draw a divided rectangle 16cm long to represent the prices of sugar in the year 2016**. (8 marks)**

(ii) State two advantages of using compound bar graph to present statistical data. **(2 marks)**

(b) State three physical conditions that favours cocoa farming in Ghana. **(3 marks)**

(c) Describe stages involved in processing of cocoa from harvesting to marketing**. (8 marks)**

(d) Apart from making oil give four other uses of oil palm. **(4 marks)**

7.(a) (i) Distinguish between a forest and forestry. **(2 marks)**

(ii) Name two indigenous softwood trees species found in Western Region of Kenya. **(2marks)**

(b)(i) State three characteristics of planted forests. **(3 marks)**

(ii) Name two forest reserves in Western region of Kenya. **(2 marks)**

c) (i) State four characteristics of temperate hardwood forests. **(4 marks)**

(ii) Explain three problems which have limited exploitation of tropical hardwood in Africa **(6 marks)**

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

i) Tree species **(2 marks)**

ii) Mode of exploitation **(2 marks)**

iii) Marketing of product **(2 marks)**

8.(a) State two characteristics of the cottage industries in India **(2 marks)**

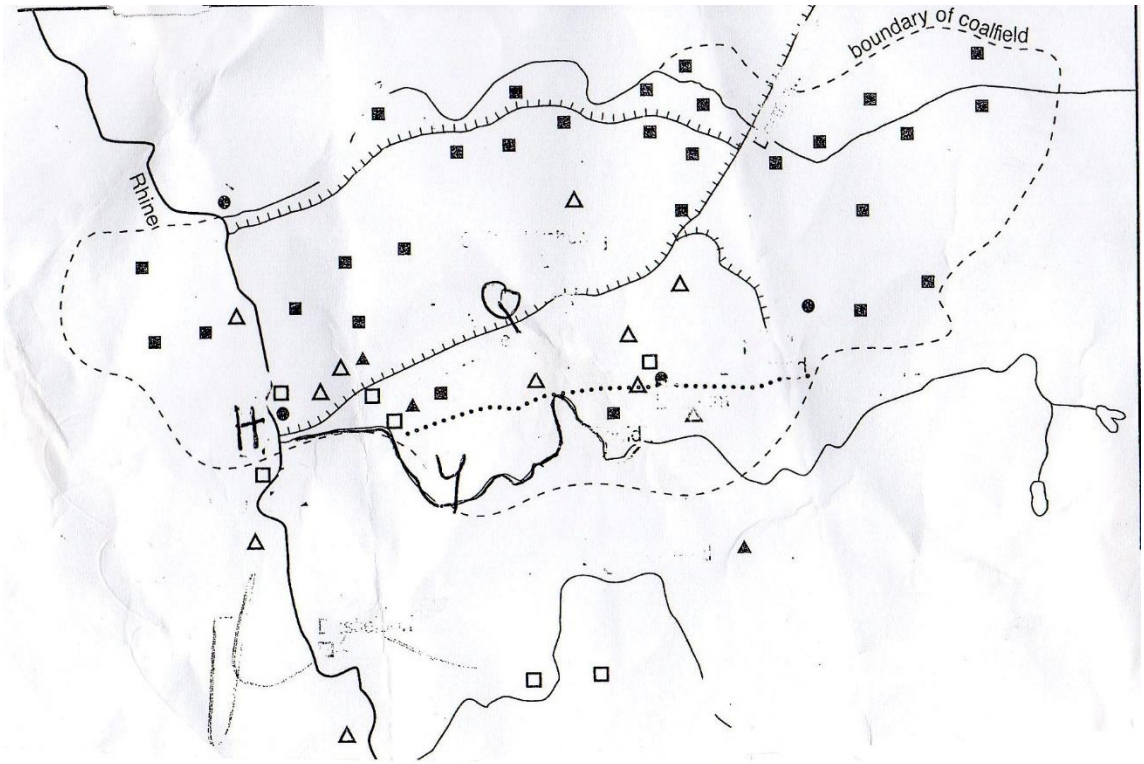
(b) Explain two ways in which each of the following factors influence the location of industries in Kenya

(i) Raw materials **(4 marks)**

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(ii) Government policy **(4 marks)**

(c) Use the map below to answer question (i), (ii) and (iii)



(i) Name river marked "y" **(1 mark)**

(ii) Name town marked "H" **(1 mark)**

(iii) Name the canal marked Q **(1 mark)**

(d)Explain three physical factors that favoured the location of iron and steel industries in Germany. **(3 marks)**

(e)Students intended to carry out a field study of a location Jua Kali industry in the local market centre.

(i) State two reasons why it would be necessary for them to visit the area of study in advance **(2 marks)**

(ii) State two items you would include in your working schedule**.** **(2 marks)**

(iii) Give two advantages of studying Jua Kali industry through field work. **(2 marks)**

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9.(a) Define the term population structure. **(2 marks)**

(b) State four causes of rural to rural migration **(4 marks)**

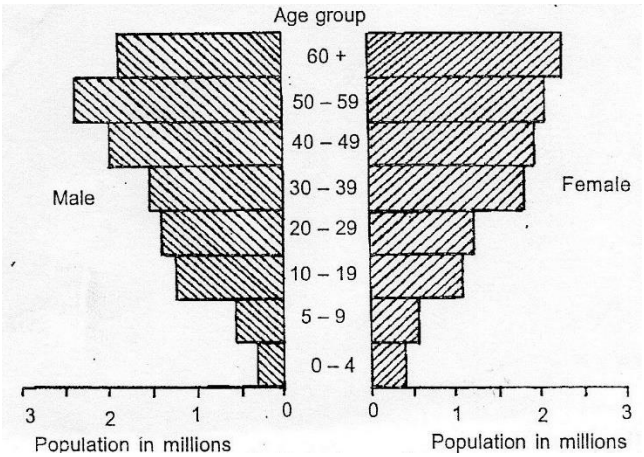
(c)Explain how the following factors have influence population distribution in Kenya.

(i) Relief **(2 marks)**

(ii) Diseases **(2 marks)**

(iii) Drainage **(2 marks)**

(d)The pyramid below represents population structure of a country.



(i) Identify the stage in the demographic transition which the country represented in the pyramid above falls. **(1 mark)**

(ii) Describe characteristics of the population as represented by the pyramid.

(iii) Explain four problems associated with the population represented by the above population pyramid represented by the above pyramid **(8 marks)**

10. (a)(i) Define the term environment **(2 marks)**

(ii) Name two components of environment that must be conserved. **(2 marks)**

b) (i) State four reasons why it is important to manage and conserve the environment**. (4 marks)**

ii) Apart from floods, name two common natural environmental hazards in Kenya**. (2 marks)**

c) Explain three causes of floods in Kenya. **(6 marks)**

d) Students from your school carried out a field study on environmental pollution in the country headquarters.

(i) Name two types of pollution they identified. **(2 marks)**

(ii) Give three findings of the high rate of land pollution in the town. **(3 marks)**

(iii) State four ways you would advise the local authority to control pollution in the town. **(4 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

311/1

HISTORY AND GOVERNMENT

PAPER 1

2½ hours

Instructions to candidates

*(a) This paper consists of **three** sections; **A, B** and **C.***

*(b) Answer **all** the questions in section **A, three** questions from section **B** and **two** questions from section C.*

(c) Answers to all the questions must be written in the answer booklet provided.

(d) This paper consists of 3 printed pages.

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

SECTION A (25 MARKS)

*Attempt **ALL** the questions in this section*

1.Give **two** economic reasons why the Cushites migrated from their original homeland into Kenya. **(2 marks)**

2.Give the **main** reason that led to the decline of the Gedi in the 15th Century. **(1 mark)**

3.Identify **one** way in which a Kenyan citizen can participate in the democratization process. **(1 mark)**

4.Identify **two** ways in which education promotes national unity in Kenya. **(2 marks**)

5.State **one** factor to consider when forming a constitution. **(1 mark)**

6.Mention **one** principle of democracy. **(1 mark)**

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7.State **two** terms of the Anglo-German agreement of 1890. **(2 marks)**

8.Identify **two** social effects of colonial rule to the Africans in Kenya. **(2 marks)**

9.State **one** reason why Africans in Kenya were not allowed to grow cash crops up to 1939. **(1 mark)**

10. Apart from Kenya African National Union (KANU) name **two** other political parties formed in Kenya between 1960 and 1963. **(2 marks)**

11. Who formed KPU in 1966? **(1 mark)**

12. What is the composition of the executive Arm of Government in Kenya? **(2 marks)**

13. Identify **one** national philosophy adopted at independence to promote social justice in Kenya. **(1 mark)**

14. State **two** factors that led to the introduction of multi-party democracy in Kenya in 1992. **(2 marks)**

15. Who are the members of a County's executive committee? **(2 marks)**

16. Who elects a governor in Kenya? **(1 mark)**

17. Identify **one** principle that guides public finance in the Kenyan Constitution. **(1 mark)**

SECTION B (45 marks)

*Answer any **three** questions in this section*

18. (a) Identify **three** communities that form the Western Bantu group in Kenya**.(3 marks)**

(b) Describe the political organization of the Agikuyu during the pre-colonial period in Kenya **(12 marks)**

19. (a) Give **three** characteristics of the culture of the Coastal city states in Kenya. **(3 marks)**

(b) Explain **six** effects of slave trade on the Africans up to 1900. **(12 marks)**

20. (a) State **three** factors which facilitated settler farming during the colonial period. **(3 marks)**

(b) Explain **six** impacts of colonial land policies in Kenya during the colonial period. **(12 marks)**

21. (a) Identify **three** education commissions formed after independence in Kenya. **(3 marks)**

(b) Explain the challenges faced by the health sector in Kenya today. **(12 marks)**

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SECTION C (30 marks)

Answer any two questions in this section

22. (a) Identify **three** limitations of freedom of expression in Kenya. **(3 marks)**

(b) Explain **six** rights of an accused person in Kenya. **(12 marks)**

23. (a) Identify **three** aspects of democracy. **(3 marks)**

(b) Explain **six** functions of The Kenya National Human Rights and Equality Commission (KNHREC) in Kenya. **(12 marks)**

24. (a) Identify **five** types of indirect taxes in Kenya. **(5 marks)**

(b) Explain **five** principles of public finance in Kenya. **(10 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

311/2

HISTORY AND GOVERNMENT

PAPER 2

2½ hours

Instructions to candidates

*(a) This paper consists of **three** sections; **A, B** and **C.***

*(b) Answer **all** the questions in section **A, three** questions from section **B** and **two** questions from section C.*

(c) Answers to all the questions must be written in the answer booklet provided.

(d) This paper consists of 3 printed pages.

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

SECTION A (25 MARKS)

*Attempt **ALL** the questions in this section*

1.What is the difference between an absolute monarchy and a constitutional monarchy**? (1 mark)**

2.Give the **main** factor that contributed to the evolution of organisms. . **(1 mark)**

3.Give **two** difficulties faced by European immigrants in North America in the pioneer years**. (2 marks)**

4.Identify **two** problems encountered by traders during the trans-Saharan trade. **(2 marks)**

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5.Mention **two** factors which undermine scientific advancement in the less developed countries**. (2 marks)**

6.Give **one** reason for the decline of Meroe as an early urban centre. **(1 mark)**

7.Give two similarities between the political organization of Asante and Shona. **(2 marks)**

8.Identify **one** source of British law. **(1 mark)**

9.What was the strategic factor for European colonization of Africa in the 19th **c** **(1 mark)**

10. Give **two** reasons which motivated Fredrick Luggard to use indirect rule in Nigeria. **(2 marks)**

11. Show how Portugal's poverty impacted negatively on her colonies. **(1 mark)**

12. What was the **main** factor that motivated USA to join the first world war? **(1 mark)**

13. Give **two** benefits of international relations. **(2 marks)**

14. Mention **two** reasons why NAM emerged among developing countries**.** **(2 marks)**

15. Identify **one** weapon used during the cold war. **(1 mark)**

16. Mention **one** merit of a federal system of government. **(1 mark)**

17. Identify **two** categories of persons who are denied to contest a constituency seat in Britain. **(2 marks)**

SECTION B (45 MARKS)

*Answer any **three** questions from this section.*

18. (a) Identify **three** characteristics of Aegypthopithecus. **(3 marks)**

(b) Describe the way of life of early man during the Upper Palaeolithic. **(12 marks)**

19. (a) Identify **three** uses of iron. **(3 marks)**

(b) What were the economic effects of industrial revolution in Europe? **(12 marks)**

20. (a) Identify **three** countries where the British applied indirect rule. **(3 marks)**

(b) Describe the characteristics of direct rule in Zimbabwe. **(12 marks)**

21. (a) Mention **three** principles of the Arusha declaration of 1967. **(3 marks)**

(b) Explain the political challenges facing the Democratic Republic of Congo. **(12 marks)**

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SECTION C (30 MARKS)

Answer any two questions from this section.

22. (a) Give **three** reasons that led to the failure of Von Schlieffen plan during the First World War. **(3 marks)**

(b) Explain why the Central Powers were defeated during World War 1**. (12 marks)**

23. (a) Name **five** organs of the East African Community – 2001. **(5 marks)**

(b) Explain five challenges facing the East African Community – 2001**. (10 marks)**

24. (a) How are the powers of the President of the United States of America Checked? **(5 marks)**

(b) What are the functions of the Monarch in Britain? **(10 marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

441/1
HOME SCIENCE
PAPER 1
THEORY
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

- *Answer all questions in section A in the spaces provided*
- *Section B is compulsory*
- *Choose any two questions from section C*
- ***This paper consists of 14 printed pages***
- ***Do not remove any pages from this booklet.***
- ***Answer all questions in English.***
- ***Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.***

FOR EXAMINERS USE ONLY

SECTION	Question	Maximum score	Candidate's score
Section A	1-27	40	
Section B	28	20	
Section C	29-31	40	

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SECTION A (40 MARKS)

1.Give four functions of vitamin C. **(2mks)**

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2.Mention **two** ways the social need of a patient recuperating at home can be abused. **(2mks)**

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3.State two ways of preparing a tin for baking. **(2mks)**

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4.Mention two importance of pressing during garment construction. **(2mks)**

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5.State **two** precautions to take when using wood as fuel. **(1mk)**

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6.Mention any **two** practices in the management of sprains. **(1mk)**

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7.Note down **two** causes of missing stitches during machining. **(2mks)**

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8.Name **two** desirable properties of storage facilities. **(1mk)**

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9.List down **two** laundry treatments which may be done during the rinsing stage other than starching. **(2mks)**

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10. State two reasons why sufficient ventilation is needed. **(2mks)**

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11. Highlight **two** factors that determine the specific nutritional needs of a sick person. (1mk)

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12. Identify the correct direction to press the following **darts** during garment construction. **(2mks)**

(i) Front shoulder dart _____

(ii) Bust dart _____

(iii) Elbow dart _____

(iv) Back waist dart _____

13. Describe how to identify silk using the burning test. **(2mks)**

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14. Identify **two** ways in which consumers can protect themselves from exploitation. **(2mks)**

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15. State **two** reasons why saucepans should have a thick base. **(1mk)**

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16. Give **two** scenarios where mechanical ventilation would be necessary. **(1mk)**

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17. Suggest two factors that can lead to a faulty pastry. **(1mk)**

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18. List **two** points on the importance of basting in cooking. **(1mk)**

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19. List **two** advantages of dry cleaning. **(1mk)**

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20. Name **two** vaccines administered orally. **(1mk)**

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21. Name **two** types of electric lamps. **(1mk)**

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22. State **two** reasons for blending fibres. **(1mk)**

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23. Give two disadvantages on the use of credit cards. **(2mks)**

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24. Highlight **two** reasons why weaning is done. **(1mk)**

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25. Mention two ways of ensuring tucks are well made **(2mk)**

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26. List **two** advantages of natural lighting. **(1mk)**

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27. State two different ways of attaching a collar to the neckline. **(2mks)**

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SECTION B (20 MARKS)

(COMPULSORY)

28. You are preparing to go back to school . Describe how you would:

(a)Clean a greasy glass mug . **(5mks)**

(b) Dry clean and finish your school polyester tie **.(7mks)**

(c) Launder a loose coloured nylon garment **(8mks).**

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SECTION C (40 MARKS)

29. (a) Outline four precautions to take when laundering baby's napkin .. **(4mks)**
(b) Identify **four** problems related to breast feeding and their remedies. **(4mks)**
(c) State four points to bear in mind when taking body measurements . **(4mks)**
(d) State **four** disadvantages of hoarding. **(4mks)**
(e) List **four** general rules to observe when making flour mixtures. **(4mks)**

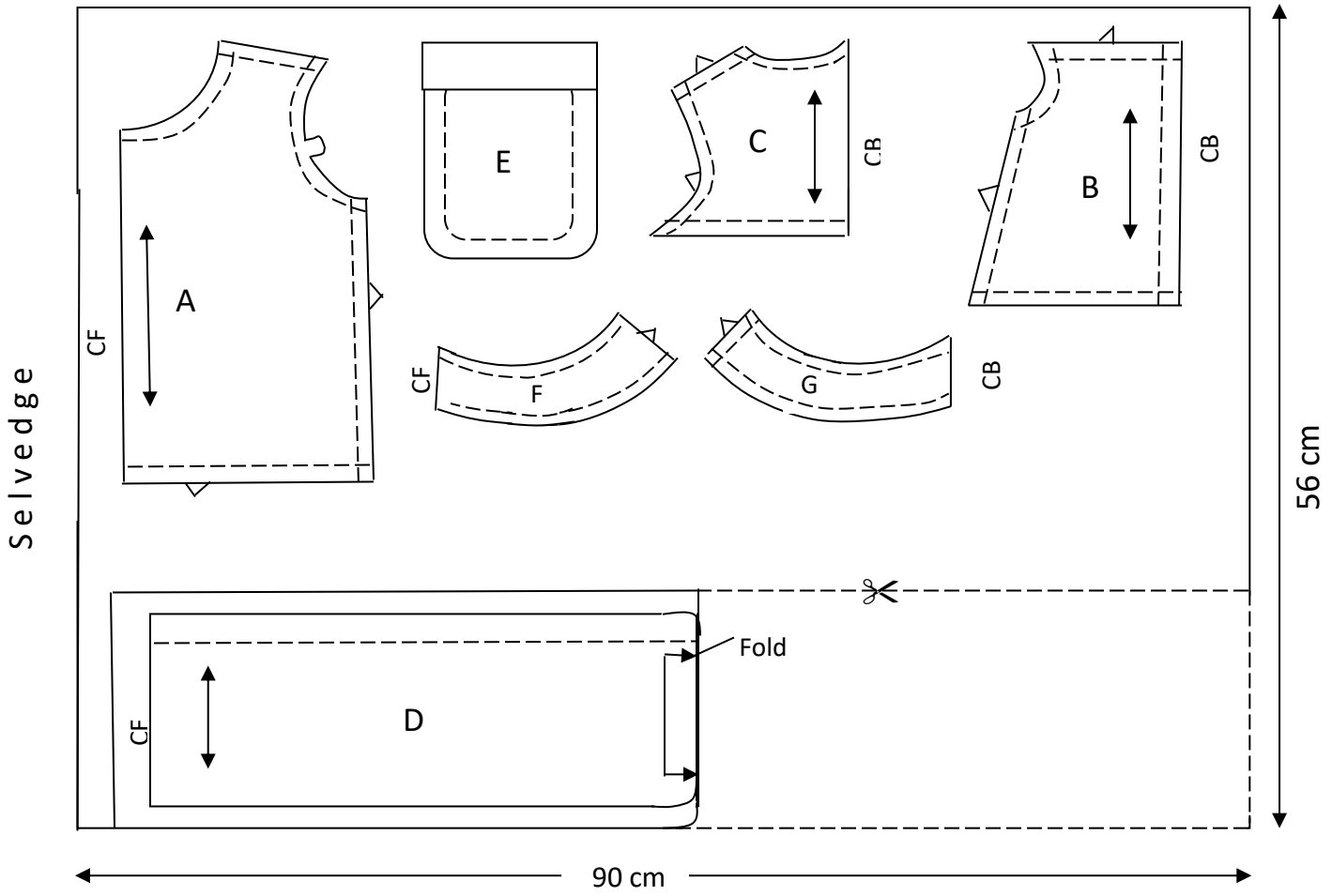
30. (a) Mention four qualities of a well made hem. **(4mks)**
(b) Give **four** reasons for heavy and close texture in creamed cake mixtures. **(4mks**)
(c) Mention **four** ways of making a faced slit opening decorative. **(4mks)**
(d) Highlight **four** advantages of complementary feeding. **(4mks)**
(e) Explain four qualities suitable for a night wear . **(4mks)**

31. (a) Explain **four** ways pastry can be kept cool during preparation. **(4mks)**
(b) Note down **four** qualities of a well-made collar. **(4mks)**
(c) State **four** advantages of hire purchase. **(4mks)**
(d) State **four** ways of caring for a lactating mother. **(4mks)**
(e) Write down four points to bear in mind when choosing a method of "fullness disposal|". **(4mks)**

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LAYOUT – NOT DRAWN TO SCALE



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441/2
HOME SCIENCE
(CLOTHING CONSTRUCTION)
PAPER 2

A pattern of a child's dress is provided. You are advised to study the sketches, instructions and the layout carefully before you begin the test.

Materials provided:

1. Pattern pieces
   A. FRONT BODICE
   B. BACK BODICE
   C. FRONT SKIRT
   D. BACK SKIRT
   E. SLEEVE
   F. CUFF
   G. BACK NECK FACING
   H. SLEEVE BINDING
2. Plain light weight cotton fabric 75cm long by 91cm 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 child's dress to show the following processes.

1. Presentation and cutting out. **(16mks)**

2. Making a single pointed dart on the front bodice. **(5mks)**

3. Joining the shoulder seam using double-stitched seam. **(7mks)**

4. Joining the front and back neck facings and neatening of the free edge of the joined facings. **(8mks)**

5. Using the joined facings to neaten the neckline. **(4mks)**

6. The joining of the front bodice to the front skirt and the back bodice to the back skirt using a plain seam and neaten the back part only. **(10mks)**

7. Making the side seam using an open seam. **(5mks)**

8. Making of the continuous wrap opening on the lower edge of the sleeve. **(5mks)**

9. Working the underarm seam using French seam. **(6mks)**

10. Preparation and attachment of the cuff on the lower edge of the sleeve**.** **(6mks)**

11. The preparation and attachment of the sleeve into the armhole. Do not **trim** and do not **neaten** the seam allowance. **(8mks)**

12. Working of the buttonhole using hand worked buttonhole stitches. **(4mks)**

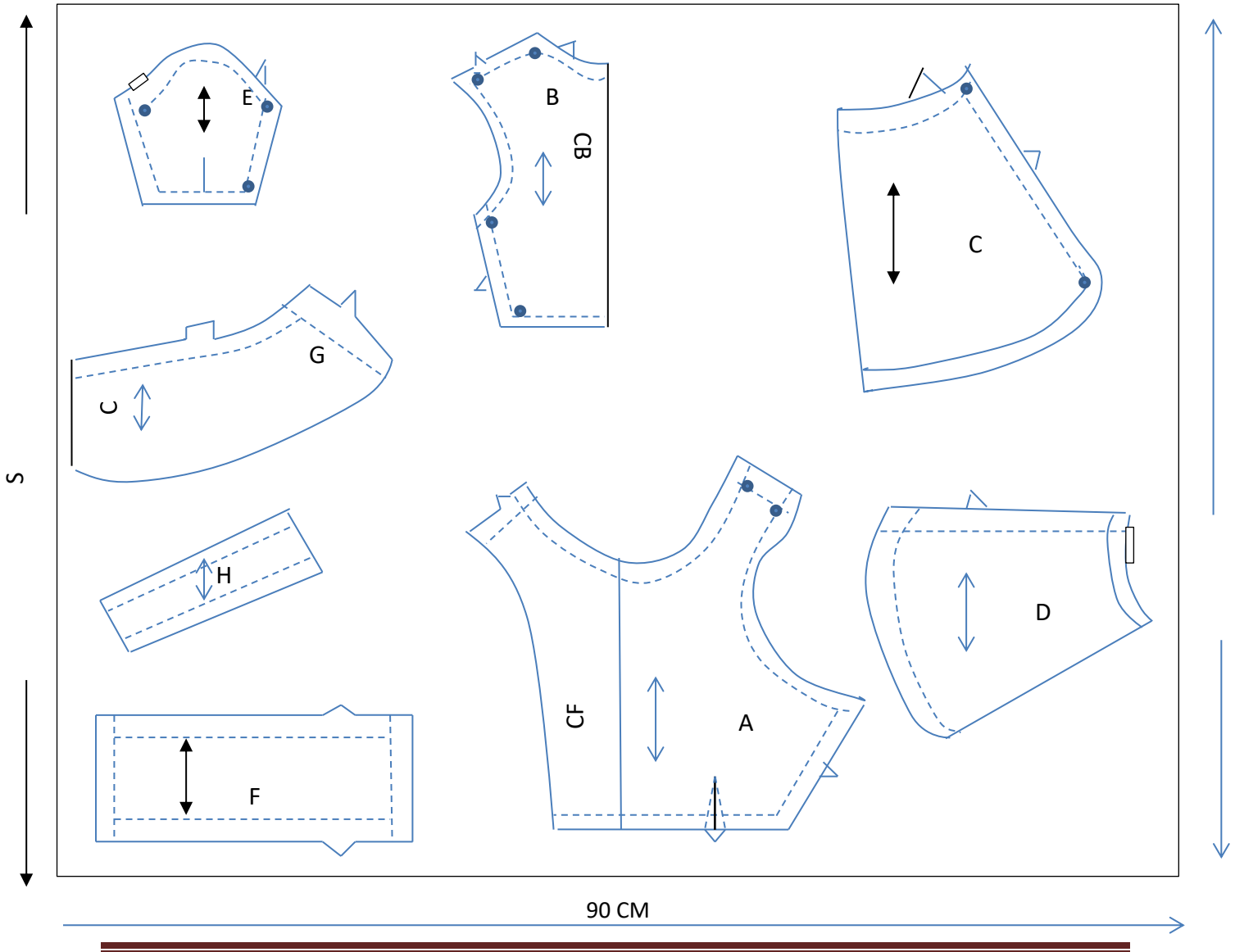
13. Management of the fullness on the lower edge of the dress and hold the hem using even tacking. **(6mks)**

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NB:

At the end of the examination, firmly sew on to your work, on a single fabric label bearing your name and admission number. Remove needles and pins from your work. Then fold your work carefully and place it in the envelope provided. Do not put scraps of fabric in the envelope.

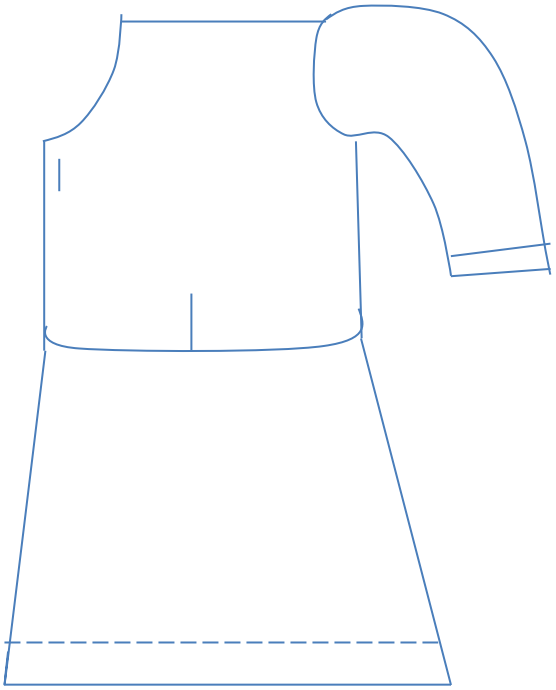
THE LAYOUT (NOT DRAWN TO SCALE)



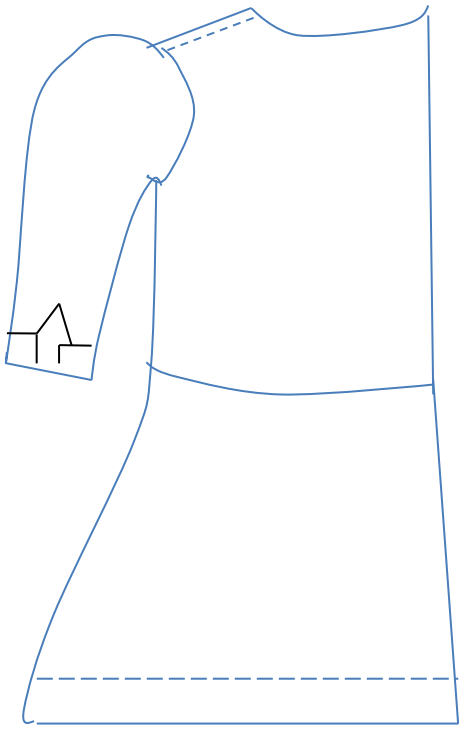
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VIEW

FRONT VIEW



BACK VIEW



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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

30. THE KENYA NATIONAL EXAMINATIONS COUNCIL

31. Kenya Certificate of Secondary Education

32. HOME SCIENCE (FOODS AND NUTRITION)

33. Paper 441/3

34. PRACTICAL

35. 1 ¾ hours

PLANNING SESSION: 30 minutes

PRACTICAL TEST SESSION: 1¾ hours

Instructions to candidates

(a) Read the test carefully.

(b) Write your name and index number on every sheet of paper used.

(c) Text books and recipe books may be used during the planning session as reference materials.

(d) You will be expected to keep to your order of work during the practical session.

(e) You are only allowed to take away your reference materials at the end of the planning session.

(f) You are NOT allowed to bring additional notes to the practical session.

This paper consists of 2 printed pages

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Candidates should check to ensure that both pages are printed

THE TEST

Your friend just called to inform you that she will pass by your place to have lunch.

Using all the ingredients listed below:

(i) Prepare a two course lunch for both of you.

Ingredients

1.Left over Ugali/ Rice
2.Chicken
3.Pumpkin/ Peas
4.Bread rolls/ Scones
5.Carrots
6.Tomatoes
7.Green pepper
8.Onions
9.Salt
10. Coriander leaves
11. Spices
12. Cooking fat/ oil

PLANNING SESSION – 30 MINUTES

Use separate sheets of paper for each task 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 food stuffs, materials and equipment you will require.

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

JINA: ……

SHULE: ……..……

NAMABARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……

102/1

KISWAHILI

KARATASI Y A 1

INSHA

MUDA: SAA 1 ¾

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 kijitabu cha majibu ulichopewa

g) Karatasi hii ina kurasa 2 zilizopigwa chapa.

h) Watahiniwa ni lazima wahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.

1.Wewe ukiwa mwenyekiti wa chama cha msalaba mwekundu shuleni mwako, umemtembelea afisa mshirikishi wa usambazaji msaada wa chakula katika gatuzi lako. Andika mahojiano baina yenu kuhusu changamoto zinazokumba usambazaji huo.

2.Pendekeza hatua zinazofaa kuchukuliwa ili kuimarisha utalii kama kitega uchumi nchini.

3.Andika kisa kinachoafiki ukweli wa methali hii: Achanikaye kwenye mpini hafi njaa.

4.Andika insha itakayoanza kwa:

"Nilipotazama gazeti la "Tangaza leo," anwani ilinikodolea macho: Shule nyingi zakoza matokeo ya mtihani wa kitaifa KCSE.

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

JINA: ……

SHULE: ……..……

NAMABARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……

102/2

KISWAHILI

Karatasi ya 2

Muda: Saa 2½

Maagizo

1) Jibu maswali yote.
2) Maswali sharti yajibiwe kwenye nafasi zilizotolewa.
3) Majibu yote yaandikwe kwa lugha ya Kiswahili.

Kwa matumizi ya mtahini pekee

Swali	Upeo	Alama
1	15	
2	15	
3	40	
4	10	

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UFAHAMU

Soma taarifa ifuatayo kisha ujibu maswali.

Mchezo wa kandanda umenifunza jambo moja: mashabiki ndio wachezaji bora sana. Wao hawakosei kufunga bao au "kuhata" penalti wanavyosema magwiji wa mchezo huu wenyewe. Mchezaji akiukosea mpira, mashabiki hunung'unika na kupiga yowe. Katika hilo yowe, huwa kumebebwa makombora mengi. Yapo ya matusi, yapo ya "mwondoeni nje ya uwanja" yapo ya "kocha lazima aende," na yapo ya "asipewe nambari tena" wajua tena kandanda!

Tunaweza kutumia kandanda kujifunza mengi mengine maishani. Kwa mfano, juu ya sheria na haki za watu. Hebu fikiria, mashabiki kufanya yowe hata timu ikashinda kombe! Au hata kufanya yowe hata mchezaji akabadilishwa na wengine bora wakaletwa uwanjani? Isitoshe, shabiki ambaye ni mfalme wa uwanja, yowe lake linaweza hata kumfanya kocha wa kilabu maarufu duniani kama Manchester United au Arsenal au Real Madrid kuondoka! Mbona hatufanyi hivyo dhidi ya sheria zinazovuruga maisha ya ndugu zetu?

Mbona hatupigi yowe dhidi ya ubakaji? Wapi yowe mwanamke anapopigwa na mumewe hadi kufa? Wapi yowe mtoto wa kike anaponyimwa urithi kwa sababu ya sheria potovu za kitamaduni? Wapi yowe dhidi ya wizi wa kimabavu?

Watoto wetu leo hawawezi kutembea peke yao haswa magharibi yanapoingia. Je, hatuwajui watu wanapowahatarisha wana wetu? Tunafanya kitu gani? Mbona hatupigi yowe polisi au utawala ukasikia ili hatua ichukuliwe?

Si kitambo tuliposikia kuhusu biashara ya ngozi ya binadamu kuuzwa ghali sana, hasa katika nchi jirani ili waganga watengenezee dawa za kuwapumbazia waja. Huu ni uchawi na kilele cha ushetani. Katika nchi jirani juzijuzi, walishikwa watu wawili ambao walikuwa wamechinja mtoto wa kiume na kumchuma ngozi kwa ushirikiano na mpumbao mkubwa. Yaani tumeuza za wanyama zikatushinda, sasa tunauza za watu?

Tatizo kubwa ni kwamba watu wanaofanya biashara haramu tunawajua. Je, tunachukua hatua gani? Haijalishi wanavaa nguo gani, za fisi au za mwanakondoo! Tunahitaji kuwaweka wazi ili biashara zao zijulikane. Wawe weusi au manjano, weupe au kijani, sharti weupe uwepo kuondoa hofu na taharuki kwa ajili ya kila mwanajamii.

Hatua ya kwanza itakuwa ya kugeuza sera na mtazamo wa vikosi vyetu vya usalama kuhusu upokeaji wa habari kutoka kwa umma. Endapo hawatasita kufichua wanaowapa habari , watajikuta katika hatari ya kuonwa na raia kama wapinga amani na lazima wachukue lawama kwa uongezekaji wa uhalifu nchini. Kwa wazalendo hata hivyo, yowe ni silaha yetu.

Maswali

a) Yape makala haya kichwa mwafaka. **(alama 1)**

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b) Mchezo wa kandanda una mchango gani? **(alama 2)**

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c) Ni matatizo gani ambayo mwandishi anailaumu jamii kwayo? **(alama 4)**

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d) Lawama kubwa inaegemea kina nani? Taja mawili. **(alama 2)**

……

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……

e) Ni nini maana ya mistari ifuatayo? **(alama 2)**

i) Haijalishi wanavaa nguo gani, za fisi au mwanakondoo!

……

……

……

ii) "…sharti uwepo ili kuondoa hofu na taharuki…"

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……

f) Ni hatua gani muhimu zinazofaa kuchukuliwa dhidi ya waovu waliotajwa? **(alama 2)**

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g) Taja mbinu zozote mbili za lugha zilizotumiwa na mwandishi. **(alama 2)**

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UFUPISHO (Alama 15)

Soma kifungu kifuatacho kisha ujibu maswali yanayofuata.

Kuna haja ya serikali ya Kenya kuwa na sera mwafaka ya ukuzaji wa Kiswahili, ili kiweze kukabiliana na maendeleo ya teknolojia. Jambo hili limepuuzwa siku nyingi. Ni vyema ifahamike kwamba umilisi wa lugha unawezesha mawasiliano yenye ufanisi kwa sababu mwasiliniaji anaweza kujieleza kwa ufasaha. Kwa jinsi anaweza kuhusiana na hadhira vizuri na kufanikisha mawasiliano yaliyo na tija katika maendeleo.

Ingawa kwa sasa Kiswahili kinatumika katika nyanja mbalimbali za maendeleo sehemu za mashambani, ufanisi mkubwa zaidi utapatikana ikiwa Kiswahili kitapewa uzito zaidi kupitia michezo ya kuigiza, hadithi na sarakasi zilizo na dhamira ya maendeleo. Mtindo huu unapendelewa sana na shirika la umoja wa mataifa linaloshughulika na maswala ya idadi ya watu katika kuhamasisha umma kupanga uzazi na kupunguza idadi ya watu. Iwapo mtindo huu utatumiwa na watalamu wanaowahamasisha wananchi kuhusiana na maswala ya maendeleo huku lugha ya Kiswahili ikitumiwa bila shaka lugha hii itakuwa na nafasi kubwa ya kufanikisha maendeleo.

Kuna haja ya kutumia Kiswahili katika vyombo vyote vya habari kama redio, majarida na hata kanda za video kusambaza habari zinazohusiana na maendeleo. Kwa sasa idhaa za redio ndizo hutumia Kiswahili kwa wingi ilhali runinga zinatumia lugha hii kwa kiasi tu. Lugha ya Kiswahili haijatumika kuandika majarida ya kilimo, afya au uchumi ilhali Kiingereza ndicho kilichotawala katika uwanja huu. Matokeo ya mwelekeo huu ni kwamba idadi kubwa ya watu wasio na elimu katika sekta zote za maendeo hawaelewi mambo mengi ambayo yangewafaa kujiendeleza kwa vile Kiingereza hakieleweki kwao.

Vilevile kuna haja ya kutafsiri matokeo ya tafiti mbalimbali zinazofanyika nchini Kenya na kwingineko kwa lugha ya Kiswahili ili maarifa ya tafiti hizo ziwafikie walio wengi na wanaoelewa Kiswahili. Hili likifanyika tafsiri hizi zinapaswa kuwekwa katika sehemu maalum za maktaba za kitaifa na vituo vya kijamii vinavyowahamasisha wananchi kuhusu maswala ya maendeleo. Kwa jinsi hii, maarifa mapya yatawafikia Wakenya wengi. Maarifa tunayoyazungumzia hapa ni pamoja na yale yanayopakuliwa kutoka kwenye tovuti. Katika mustakabali huu, mradi wa kampuni ya Mikrosoft wa kufikisha teknolojia ya mawasiliano hasa kwa tovuti sehemu za mashambani hauna budi kuigwa na kuungwa mkono na serikali ya Kenya. Iwapo utafanikiwa, utawezesha watu ambao wana elimu kupakua maarifa hasa maafisa wanaohamasisha maendeleo, na kuyaeneza kwa watu wengine kwa kutumia Kiswahili.

Hata hivyo, hakuna utafiti ambao umefanywa kuchunguza uenezaji wa Kiswahili na matumizi yake hasa katika maeneo ya mashambani. Wataalamu wa lugha ya Kiswahili wana jukumu la kufanya hivi ili kupendekeza hatua za kufanikisha lugha hii.

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Maswali

(a) Fupisha aya tatu za mwanzo kwa maneno 90 – 100 (alama 8, 1 ya mtiririko)

Matayarisho

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Nakala safi

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(b) Eleza mambo muhimu yanayojitokeza katika aya ya nne. (Maneno 40 – 50)

(alama 5, 1 ya mtiririko)

Matayarisho

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Nakala safi

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MATUMIZI YA LUGHA

(a) Tumia neno Kamene kama yambiwa katika sentensi. **(alama 2)**

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……
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(b) Taja misingi ya upangaji wa irabi za Kiswahili. **(alama 3)**

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(c) Huku ukitoa mfano mmoja, eleza maana ya mofimu ya kimsamiati. **(alama 2)**

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……
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(d) Vitambue vijenzi vya kimsingi vya lugha ya Kiswahili. **(alama 2)**

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……

(e) (i) Eleza maana ya kishazi. **(alama 1)**

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……
……

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(ii) Tunga sentensi moja yenye kishazi tegemezi kinachovumisha. **(alama 2)**

……
……
……
……

(f) Badilisha kitenzi kisaidizi kilicho kwenye sentensi ifuatayo kiwe kishirikishi. **(alama 2)**

Mvule alikuwa akilala bwenini.

……
……
……

(g) Taja majukumu ya vipengele vilivyopigwa kijistari. **(alama 4)**

Nanyi nendeni haraka au muadhibiwe kinyama kwa utundu wenu.

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……
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(h) Andika sentensi ifuatayo katika ukubwa. **(alama 2)**

Uteo alionunuliwa umezeeka sana.

……
……

Tunga sentensi moja mwafaka kudhihirisha matumizi ya kiunganishi madhali. **(alama 2)**

……
……

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(j) Onyesha minyambuliko ya maneno yafuatayo katika kauli zilizotolewa mabanoni. (alama 2)

(i) ja (tendewa) **……**

(ii) cha (tendeka) ……

(k) Katika sentensi moja, onyesha matumizi mawili ya kibainishi. (alama 2)

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……

(l) Yakinishi **(alama 2)**

Usipolipa usiingie ndani

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……

(m) Neno 'gofu' linapatikana katika ngeli gani? **(alama 1)**

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(n) Geuza sentensi ifuatayo iwe katika usemi halisi. **(alama 2)**

Kassim alimwomba Hirshi aende mahali alipokuwa ili amtume.

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

Japo Mutiso anasinzia darasani hajamaliza kazi yake.

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(p) Iandike upya sentensi ifuatayo kwa kutumia visawe vya maneno yaliyo katika italiki.

(alama 3)

Mdarisi aliwashauri wanafunzi kuwa *bidii* huzaa *ufanisi*

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(q) Unda kitenzi kutokana na kivumishi jasiri. **(alama1)**

……

……

(r) Andika maana ya nahau: kunjua jamvi **(alama 1)**

……

……

……

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ISIMUJAMII (Alama 10)

Eleza sifa tano za kimsingi zinazotambulisha sajili ya siasa. **(alama 10)**

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JINA: ……

SHULE: ……..……

NAMABARI YA USAJILI: …….. SAHIHI: ……. TAREHE: ……

Kenya Certificate of Secondary Education

102/3 – KISWAHILI (FASIHI)

Maagizo

(a) Andika jina lako na nambari yako ya mtihani katika nafasi ulizoachiwa hapo juu.

(b) Tia sahihi yako kisha uandike tarehe ya mtihani katika nafasi ulizoachiwa hapo juu.

*(c) Jibu maswali **manne** pekee.*

*(d) Swali la **kwanza** ni la **lazima**.*

(e) Maswali hayo mengine matatu yachaguliwe kutoka sehemu nne zilizobaki; yaani:

Riwaya, Tamthilia, Hadithi Fupi na Fasihi Simulizi

*(f) Usijibu maswali **mawili** kutoka **sehemu moja**.*

*(g) Majibu yote **lazima** yaandikwe kwa lugha ya Kiswahili.*

Kwa Matumizi ya Mtahini Pekee

Swali	**Upeo**	**Alama**
1	20	
	20	
	20	
	20	
Jumla		

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SEHEMU A

USHAIRI

1.*Lazima*

Monyara

Nakumbuka kwa dhiki Mto Monyara
Tuliochelea kukaribia kingo zake
Tukatulia kwanza; ukakamavu kujihamia
Kwa kunyenyekea wingi wa yake maji
Yaliyojiendea utadhani yamesimama.

Ni katika mto huu
Ambapo samaki wakubwa tulivua
Maguo kuyatakasa japo kwa kunyemelea
Na walevi stadi wakachelea kuuvuka
Ulipofura na kupita kwa kiburi
Kwa kushiba maji yake
Yaliyofanya mawimbi madogo.

Ni hapa ambapo marehemu nyanya
Mkono alinishika na njia kuniongoza
Juu ya ulalalo wa miti
Vikapu vyetu hewani vikielea;
Mimi nikishika changu kwa mkono mmoja
Naye akikiachilia chake kujishikisha kichwani
Masafa baina yetu na mtambo
Uliokwenda kwa maji
Tuliyapunguza kwa kila hatua tulopiga.

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Ni katika mto huu ambapo
Samaki tuliowavua tuliwapasua na kuwasafisha
Na hivyo kuuficha umaskini wetu
Ulotuzuia kununua mnofu wa bucha
Ni hapa ambapo wanawake walifika
Mawe ya kusagia kupata
Ni katika mto huu ambapo
Waumini walifika kutakaswa kwa ubatizo
Baada ya ulevi, uzinzi na kufuru nyinginezo.

Ni hapa ambapo ilisimuliwa kuwa
Hata wachawi walifika kufanya vitimbi vyao
Baada ya utawala wa jua kumezwa na nguvu za giza
Sasa Monyara nilioijua haipo tena
Zimebaki kingo zilizokaukiana
Kama uso wa mrembo aliyekosa mafuta
Siku ayami.

Mto huu ambapo pembeni mwake
Watoto walipashwa tohara
Maji yake yakishangilia, umekonda
Na mbavu zake nje kutoa
Na sasa vitoto vikembe vinazikanyaga
Vikijiendea zao kusaga mahindi
Juu mlimani
Katika mtambo wa Kizungu
Usioisha kulalamika
Nao wanawake hawaji tena
Kutafuta mawe ya kusagia wimbi
Imebaki njia ya walevi warejeao nyumbani

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Nayo miti iliyosimama wima ukingoni
Iliisha kuanguka kwa kuleweshwa na pumzi za walevi
Wasioisha kupita hapa.

(a) Onyesha umuhimu wa Mto Monyara kwa wanakijiji. **(alama 4)**

(b) Toa mifano ya mishata inavyojitokeza shairini. **(alama 2)**

(c) Eleza aina **tatu** za taswira zinazojitokeza katika shairi hili. **(alama 3)**

(d) Fafanua mtindo katika shairi hili. **(alama 3)**

(e) Tambua nafsi neni ya shairi hili. **(alama 1)**

(f) Jadili idhini ya kishairi katika shairi. **(alama 3)**

(g) Andika ubeti wa pili katika lugha nathari **(alama 2)**

(h) Eleza toni ya shairi hili. **(alama 2)**

SEHEMU YA B

Riwaya: *Chozi la Heri* - Assumpta Matei

Jibu swali la *2 au 3*

2. "Wapo baadhi yetu ambao wizi unapotokea inasemekana wanashirikiana na wahalifu wenyewe na baadaye wanagawana ngawira nao!"

a)

i) Fafanua muktadha wa dondoo hili **(alama 4)**

ii) Jadili mtindo katika dondoo hili **(alama 3)**

iii) Eleza sifa za usemaji wa dondoo hili **(alama 3)**

b) Ufisadi unaojadiliwa katika dondoo una madhara katika jamii ya Wahafidhina. Jadili.

(alama 10)

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3.

a) Jadili mtindo kwenye dondoo hili. **(alama 8)**

Jua linalochomoza halina ule wekundu wa jua la matlai ambao huleta haiba ya uzawa wa siku yenye matumaini. Naona wingu kubwa angani likitembea kwa kedi na madaha na kulifunika jua. Tukio hili linafuatwa na umeme, kisha mtutumo wa radi. Mawingu yaliyoshiba yakataka kutapika yanagooka, yanakaribiana, kupigana busu na kusababisha mwanguko wa matone mazito ya mvua; matone yanayoanguka kwenye ngozi laini za wanangu wakembe, Lime na Mwanaheri. Nawatazama kwa imani lakini siwezi kuwasaidia. Sina hata tambara duni la kuwafunikia. Linalobaki ni kumshuru Mungu kuwa tungali hai. Ubavuni mwangu amelala maskini mke wangu,Subira. Sijui kama inahalisi kumwita mke wangu kwani huyu siye Subira wangu wa zamani. Siye, siye, siye-e-e-e. Tazama uso wake ulivyovamiwa na majeraha, kikwi. Tazama tambo lake lililoumbuka. Amevimba na kuvimbiana kama dongo la unga ngano baada ya kutiwa hamira. Lakini yeye hana la hamira! Haya ni matokeo ya ubahaimu wa binadamu. Kwa mbali namwona Ridhaa – mwamu hasa – akitafuna kitu fulani, nadhani ni mzizimwitu. Ridhaa, kweli Ridhaa kula mzizi! Daktari mzima! Mkurugenzi mzima wa Wakfu wa Matibabu nchini! Wanasema wajuao kuwa simba akikosa nyama hula nyasi. Msafiri kafiri ati! Amekosa la maama, hili la mbwa ataliamwa!

b) "Huyu hapa ni Bwana Mwangemi na huyu hapa ni Bi Neema. Kama nilivyokujuza hapo awali, wamekuja kuchukukua kwenda kuishi nao kama mwana wao."

i) Eleza muktadha wa dondoo hili. **(alama 4)**

ii) Banaisha mtindo katika dondoo. **(alama 3)**

iii) Toa sifa za msemaji wa dondoo hili. **(alama 5)**

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SEHEMU YA C

Tamthilia: *Kigogo* - Pauline Kea

Jibu swali *4* au *5*

4. Mwandishi wa tamthilia ya *Kigogo* amefanikiwa katika kutumia ishara ili kufanikisha maudhui.

(alama 20)

5. Mimi sili makombo kama kelbu! Nilishakunywa chai ya mke wangu nikaridhika."

(i) Eleza mkutadha wa dondoo hili. **(alama 4)**

(ii) Fafanua mtindo katika dondoo hili. **(alama 4)**

(iii) Jadili vile Wanasagomoyo wamefanywa kelbu kula makombo **(alama 12)**

SEHEMU D

Hadithi Fupi: *Tumbo Lisiloshiba na Hadithi Nyingine* - Chokocho Na D. Kayanda:

Jibu swali la *6* au *7*

6.

i) Tathmini umuhimu wa Samueli Matandiko Katika kuijenga hadithi, "Mtihani wa Maisha" **(alama 10)**

ii) Fafanua shibe inavyomaliza Waafrika katika hadithi ya "Shibe Inatumaliza". **(alama 10)**

"Tulipokutana Tena" - Alifa Chokocho.

7. ***a)*** 'Jijini ni kuzuri. Kuna majumba makubwa, utapanda magari mazuri mazuri ya marafiki zetu, utakula vyakula vitamu na kupewa nguo za fahari. Utapelekwa shule kusoma na kwandika.'

i) Jadili muktadha wa dondoo hili. **(alama 4)**

ii) Eleza taswira zinazojitokeza katika dondoo hili kwa kutoa mifano. **(alama 3)**

iii) Aliyoambiwa msemewa ni kinyume cha yaliyotokea. Eleza. **(alama 8)**

b) Wahusika mbalimbali katika hadithi hii wanatumia njia nyingi kukabiliana na matatizo yanayowakumba. Zijadili.**(alama 5)**

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SEHEMU YA E

Fasihi Simulizi

Malaika …..

Nakupenda malaika x 2

Ningekuoa mali we…..

Ningekuoa dada…..

Nashindwa na mali sina we…..

Ningekuoa malaika x 2

Pesa, zasumbua roho yangu x 2

Nami nifanyeje, kijana mwenzio

Nashindwa na mali sina we

Ningekuoa malaika x 2

i) Tambua utungo huu. **(alama 2)**

ii) Toa sababu za jibu lako hapo juu **(alama 2)**

iii) Taja shughuli ya kijamii na shughuli ya kiuchumi inayodokezwa kwenye kipera hiki**.(alama 2)**

iv) Tambua nafsi neni na nafsi nenewa. **(alama 2)**

v) Jadili vipi mwasilishji wa kipera hiki anaweza kuboresha wasilisho lake**.(alama 6)**

vi) Ni matatizo yapi yanayoweza kumkumbuka mkusanyaji wa kipera hiki nyanjani? **(alama 6)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

121/1
Mathematics Paper 1
Form 4
INSTRUCTIONS TO CANDIDATES

- Write your name and Admission number in the spaces provided at the top of this page.
- This paper consists of two sections: Section I and Section II.
- Answer ***ALL*** questions from section I and ***ANY FIVE*** from section II
- All answers and workings must be written on the question paper in the spaces provided below each question.
- Show all the steps in your calculation, giving your answer at each stage in the spaces below each question.
- Non – Programmable silent electronic calculators and KNEC mathematical tables may be used, except where stated otherwise.

FOR EXAMINERS USE ONLY

SECTION I

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

SECTION II

17	18	19	20	21	22	23	24	TOTAL

GRAND TOTAL

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SECTION I

(Answer all the questions in the spaces provided)

1.Evaluate $\dfrac{8\frac{1}{8} - 2\frac{1}{2}}{5\frac{3}{20} - 1\frac{1}{6}\text{of } 1\frac{1}{5}}$ **(3mks)**

2.A bus service number 4 leaves a terminus every 15 minutes. Services 8 and 3 leaves after every 20 and 30 minutes respectively. If all the three services leave together at 6.00 am, what is the earliest time the three buses will leave together again? **(3mks)**

3.Use tables of reciprocals and square roots to evaluate. **(3mks)**

$$\sqrt{\frac{2}{0.5893} + \frac{1.06}{846.3}}$$

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4. A Line passes through A (1, 1) and B(x, y). The mid-point of AB is (3, 5). If line BC is perpendicular to AB, find the equation of line BC**.** **(3mks)**

5. Solve for the equation $\left(\frac{27}{8}\right)^{x+7} - \left(\frac{4}{9}\right)^{-3x} = 0$ **(3mks)**

6. Elvis exchanged Ksh.600,000 to Sterling pounds. After settling the bills worth £1200, he changed the balance to Euros. He then purchased goods worthy 200 Euros. Using the exchange rates below, calculate his balance in Kenyan shillings. **(3mks)**

	Buying (Ksh)	Selling (Ksh)
1 Sterling pound	114.20	114.50
1 Euro	101.20	101.30

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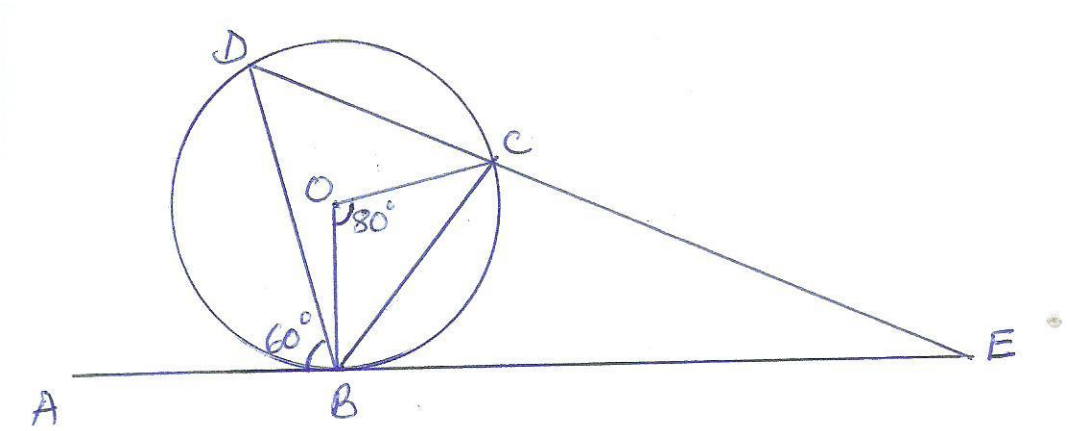
7.Find the mass of a wooden beam 4m long, 25cm wide and 18cm deep if the density of the wood is 625kg/m^3.
(3mks)

.

8.Solve the inequality below hence represent the solution in a number line **(3mks)**

$3+2x<3x-1\leq 2x+7$

9.In the diagram below ABE is a tangent to a circle at B and DCE is a straight line.
If <ABD = 60^o, <BOC = 80^o and O is the centre of the circle.



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Find the value of <BEC and give reasons. **(3mks)**

10. The marks obtained by 10 pupils were 15, 14, 12,13,9,16,11,12, 13 and 17. Calculate the standard deviation correct to 4 s.f**.** **(4mks)**

11. Each exterior angle of a regular polygon is a fifth of the interior angle.

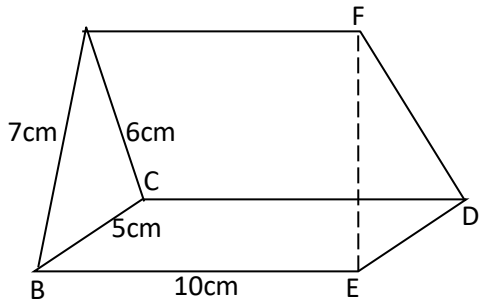
a) Find the size of the exterior angle **(2mks)**

b) Find the number of sides of the polygon **(1mk)**

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12. The figure below shows a solid prism:-

A



Sketch the net of the prism above and show with arrows the path ACDB and F via E **(3mks)**

13. Solve the equation $6\cos^2 x + 7\sin x = 8$ for $0^0 \leq x \leq 90^0$ **(4mks)**

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14. Solve for y in the equation. **(3mks)**

$\log_{10}(3y + 2) - 1 = \log_{10}(y - 4)$

15. The angle of elevation of the top of a flag post from a point x on level ground is 13º. The angle of elevation of the top of the flag post from another point y nearer the flag post and 120 metres from x is 30º. Y is between A and the bottom of the flag post and the three points are collinear. Find the height of the flag post. **(3mks)**

16. Simplify the expression $\frac{x-1}{x} - \frac{2x-1}{3x}$. Hence solve the equation $\frac{x-1}{x} - \frac{2x-1}{3x} = \frac{2}{5}$ **(3mks)**

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SECTION II

*(Answer **ANY FIVE** questions in the spaces provided)*

17. Town B is 20km N60^{0}W from village A. Town B is 25km 040^0 from town C. Village D is due East of town C and dues South of village A

(a) Using a scale 1:500,000 draw a diagram showing a relative position of town B, town C, village A and village D **(3mks)**

(b) Determine;

(i) Distance between village A and town C **(1mk)**

(ii) Distance between town C and village D **(1mk)**

(iii) Compass bearing of town C from village A **(1mk)**

(iv) Compass bearing of village D from town B **(1mk)**

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(c) Determine the area enclosed by the diagram in (a) above in hectares (3mks)

18. John bought 3 brands of tea A, B and C. The cost price of the three brands were sh.25, sh.30 and sh.45 per kilogram respectively. He mixed the three brands in the ration 5:2:1 respectively. After selling the mixture he made a profit of 20%.

a) How much profit did he make per kilogram of the mixture? **(3mks)**

b) After one year the cost price of each brand was increased by 12%.

i) How much did he sell one kilogram of the mixture to make 20% profit? Give your answer to the nearest 5cents. **(4mks)**

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iii) What would have been the percentage profit if he sold one kilogram of the mixture at Ksh.40.25.
(3mks)

19. The distance S meters from a fixed point O, covered by a particle after t seconds B given by the equation $S = t^3 - 6t^2 + 9t + 5$

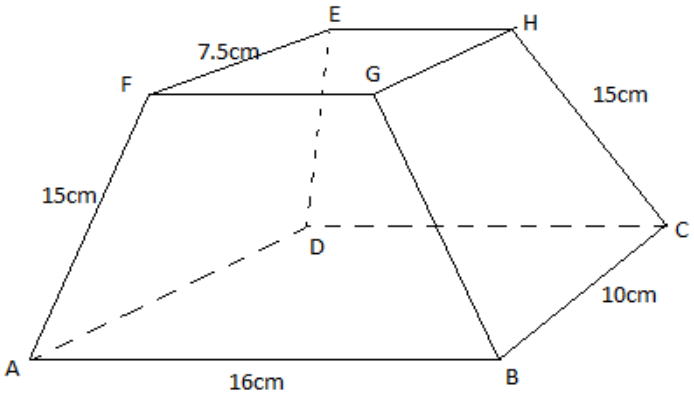
(a) Calculate the gradient of the curve at t = 0.5 seconds **(3mks)**

(b) Determine the values of S at the turning points of the curve **(3mks)**

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(c) Sketch the curve in the space provided. **(4mks)**

20. The figure below shows a frustrum made from a right pyramid, such that AB=DC=16cm, BC=AD=10cm, FG=EH=18cm, GH=FE=7.5cm, CH=BG=AF=DE=15cm. If the altitude of the frustrum is 14.6cm, find:



(a) The altitude of the pyramid made from the frustrum. **(2mks)**

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(b) The surface area of the frustrum. **(5mks)**

(c) The volume of the frustrum. **(3mks)**

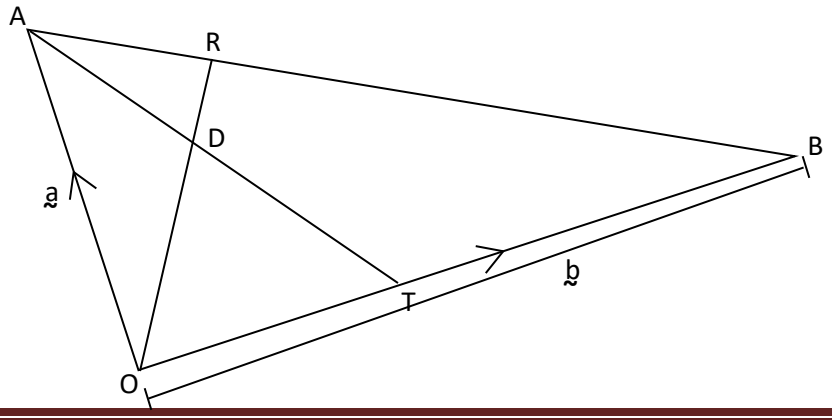
21. Alex and James live in two towns 240km apart. One day at 9.45am, Alex left his town and drove towards James' town at an average speed of 60km/h. James left his town at 10.50 a.m. on the same day and drove towards Alex's town at an average speed of 80km/h. Determine

(a) the distance form Alex's town where the two met. **(7mks)**

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(b) the time of day they met **(3mks)**

22. The figure **below** is a triangle OAB where OA = **a** and OB = **b**. A point R divides AB in the ratio 2: 5 and a point T divides OB in the ratio 1: 3. OR and AT intersect at D.



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(a) Find in terms of **a** and **b.**

(i) **BT.** **(1mk)**

(ii) **OR** **(2mks)**

(iii) **AT** **(2mks)**

(b) Given that **AD** = k**AT** and **RD** = h**RO** where k and h are scalars. Find the values of k and h. Hence express **AD** in term of **a** and **b.** **(5mks)**

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23. (a) The members of a photography club decided to buy a camera worth Ksh 4000 by each one contributing the same amount of money. Fifteen members fail to pay their contribution and as a result each of the other members has to pay Ksh 60 more. Find the number of members in the club.
(8mks)

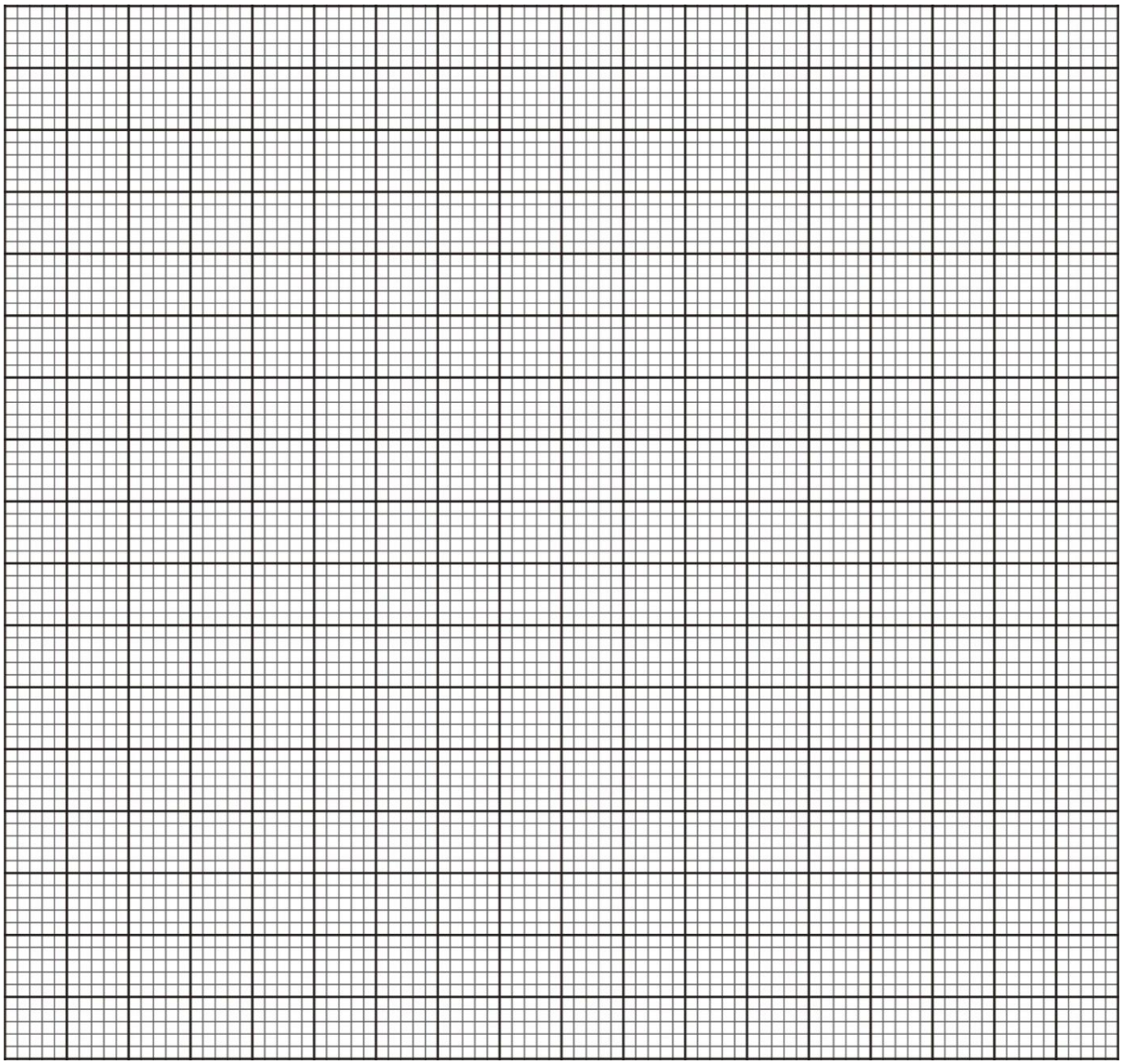
(b) What is the percentage increase in the contribution per member**?** **(2mks)**

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24. (a) Complete the table below for the functions $y = 3\ sin\ x$ and $y = 2\ cos\ x$. **(2mks)**

x	0^c	$\frac{\pi^c}{6}$	$\frac{\pi^c}{3}$	$\frac{\pi^c}{2}$	$\frac{2\pi^c}{3}$	$\frac{5\pi^c}{6}$	π^c	$\frac{7\pi^c}{6}$	$\frac{4\pi^c}{3}$	$\frac{3\pi^c}{2}$	$\frac{5\pi^c}{3}$	$\frac{11\pi^c}{6}$	$2\pi^c$
$3sin\ x$			2.6	3			0	-1.5	-2.6	-3		-1.5	
$2cosx$		1.7	1.0			-1.7	-2	-1.0			1.0	1.7	2

(b) Using a scale of 2cm to represent 1 unit on the y- axis and 1cm to present 30º on the x-axis ,draw the graphs of y =3sinx and y = 2cosx on the same axes on the grid provided**.** **(5mks)**



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(c) From your graphs:

(i) State the amplitude of y = 3sin x**.** **(1mk)**

(ii) Find the values of x for which $3sin\ x - 2\cos\ x = 0$. **(1mk)**

(iii) Find the range of values of **x** for which 3sin **x ≥ 2cos x** **(1mk)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……...……

ADM NO: …….. SIGN: ……. DATE: ……..

121/2
Mathematics Paper 2
Form 4
2 ½ Hours
Term 2,

INSTRUCTIONS TO CANDIDATES

- Write your name and Admission number in the spaces provided at the top of this page.
- This paper consists of two sections: Section I and Section II.
- Answer ***ALL*** questions from section I and ***ANY FIVE*** from section II
- All answers and workings must be written on the question paper in the spaces provided below each question.
- Show all the steps in your calculation, giving your answer at each stage in the spaces below each question.
- Non – Programmable silent electronic calculators and KNEC mathematical tables may be used, except where stated otherwise.

FOR EXAMINERS USE ONLY

SECTION I

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

SECTION II

17	18	19	20	21	22	23	24	TOTAL

GRAND TOTAL

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SECTION I

(Answer all the questions in the spaces provided)

1.Use tables of logarithms to evaluate **(3marks)**

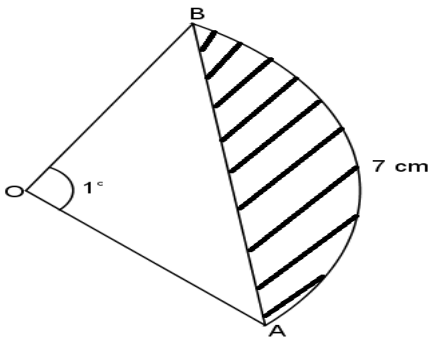
$$\frac{4.28\ X\ 0.01677}{tan\ 20^{O}}$$

2.All prime numbers between ten and twenty are arranged in descending order to form a number.

(i) Write down the number. **(1mark)**

(ii) State the total value of the third digit of the number formed in (i) above**.** **(1mark)**

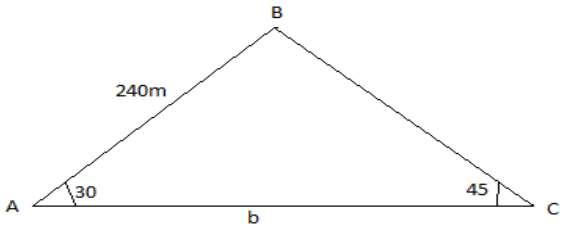
3.The diagram below shows a sector of a circle centre O with arc AB=7 cm and subtends an angle of 1^{c} at the centre. Calculate the shaded area to 4 s.f. (Take $\pi = \frac{22}{7}$ **).** **(3marks)**



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4.Expand $\left(1+\frac{1}{x}\right)^9$ up to the term x^3 hence use your expansion to find the estimate value of $100(1.05)^9$ correct to 4 significant figures. **(4marks)**

5.In the figure below it shows a triangle ABC not drawn to scale. Calculate the value of b given that AB =240m $< BAC = 30^0 \; and \; < ACB = 45^0$ **(3marks)**



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6.Kipkemboi running at 10m/s starts 5 m ahead of Mutola who is running at 12m/s. How far from Kipkemboi's starting point does Mutola overtake him**?** **(3marks)**

7.Make L the subject given that H = $\sqrt{\left(\frac{3d\ (L-d)}{10L}\right)}$ **(3marks)**

8.Without using a mathematical tables or calculators, simplify $\frac{3}{\sqrt{7}-\sqrt{2}} - \frac{2}{\sqrt{2}+\sqrt{7}}$ **(3marks)**

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9. The volume of cuboid A is 64 cm^3 while that of a similar cuboid B is 8 cm^3. If the width of cuboid A is 2 cm, find the width of cuboid B**.** **(3marks)**

10. Show that $4y^2 + 4x^2 = 12x - 12y + 7$ is the equation of a circle, hence find the co-ordinates of the centre and the radius**.** **(3marks)**

11. The dimensions of a rectangle are given as 4.1cm by 2.8cm. Calculate the relative error in the area. **(3marks)**

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12. If $2.\dot{5} \times 0.\dot{4}\dot{5} = \frac{a}{b}$ where a and b are in their simplest forms. Find the values of *a* and *b*.
(3marks)

13. The seventh term of an arithmetic sequence is 17, three times the third term is 3. Calculate the first term and the common difference of the sequence. **(3marks)**

14. At the start of the 1st year, Mr Chepyator, deposited Ksh. 180,000 in a bank which gives an interest of 12% p.a, compounded quarterly. Find the interest earn by Mr. Chepyator at the start of the 4rd year**.** **(3marks)**

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15. A quantity P varies partly as n and partly as the square of n. When P= -3, n= -1 and when P= 18, n=2. Find P when n =**1** **(3marks)**

16. Find the inverse of $\begin{pmatrix} 5 & -2 \\ 2 & -1 \end{pmatrix}$ hence find the point of intersection of the lines whose equations are **(4marks)**

$5x - 2y = 5$

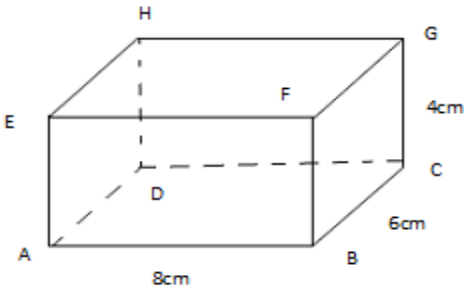
$y = 2x - 3$

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SECTION II

(Answer ANY FIVE questions in the spaces provided)

17. In the cuboid below, AB = 8cm, BC = 6cm, AE = 4cm



Calculate,

a) The length BD **(2marks)**

b) The angle which BH makes with the plane ABCD. **(2marks)**

c) The angle between EC and the plane ADHE **(2marks)**

d) The angle between EA and AG **(2marks)**

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e) The angle between planes ABCD and EBCH **(2marks)**

18. There are 2 bags A and B. Bag A has 4 white balls and 6 red balls. Bag B has 2 white balls and 3 red balls. Each bag has an equal chance of being picked. If a bag is selected randomly and 2 balls picked with replacement in bag A and without replacement in bag B. Find the probability that:

(a) They are both white**.** **(2marks)**

(b) They are of different colours**.** **(3marks)**

(c) At least one ball is red**.** **(2marks)**

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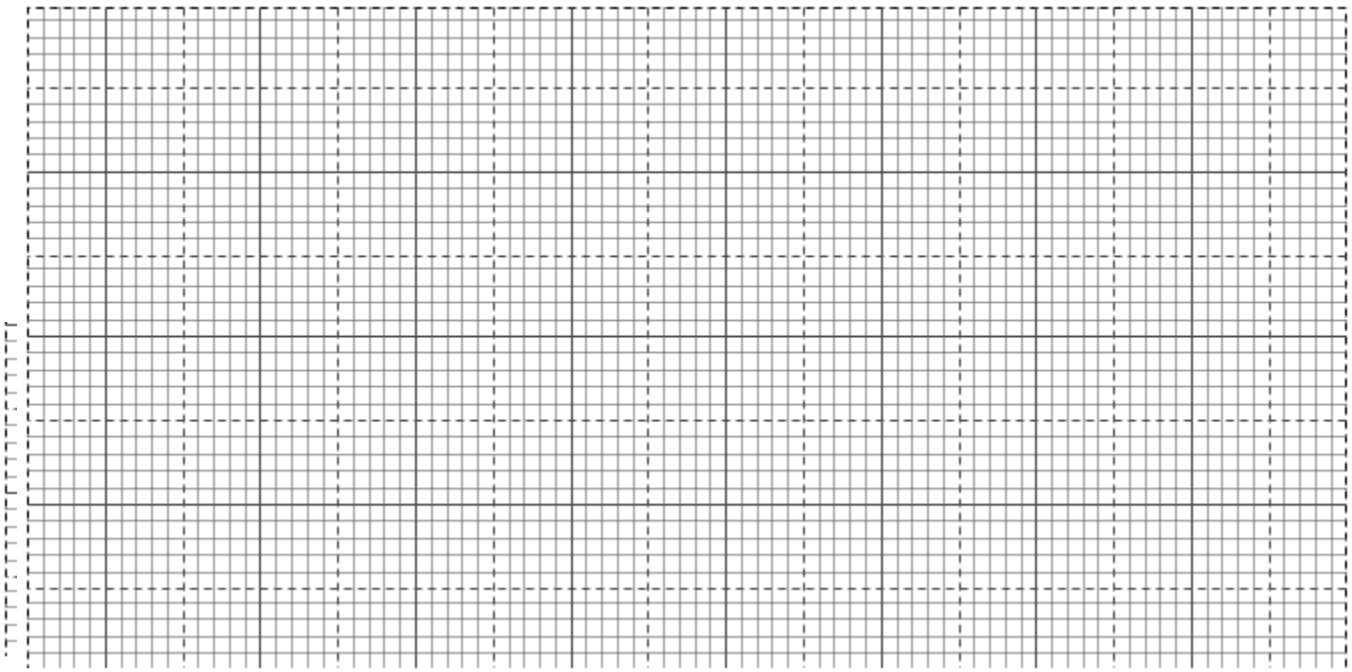
(d) None of the balls is white**.** **(3marks)**

19. The table below shows marks obtained by form three students in Kiswahili third term exam.

Marks	20-25	26-30	31-39	40-45	46-51	52-59	60-68	69-75	76-80
Frequency									

(a) Calculate the mean (2marks)

(b) Draw an ogive (3marks)



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(c) From the ogive curve in (b) above

(i) estimate the median. **(1mk)**

(ii) estimate the quartile deviation. **(2mark)**

(iii) if 40% of the students are to pass, determine the pass mark **(2marks)**

20. **(a)** Integrate the function $y = (x - 1)(x - 3)$ **(2marks)**

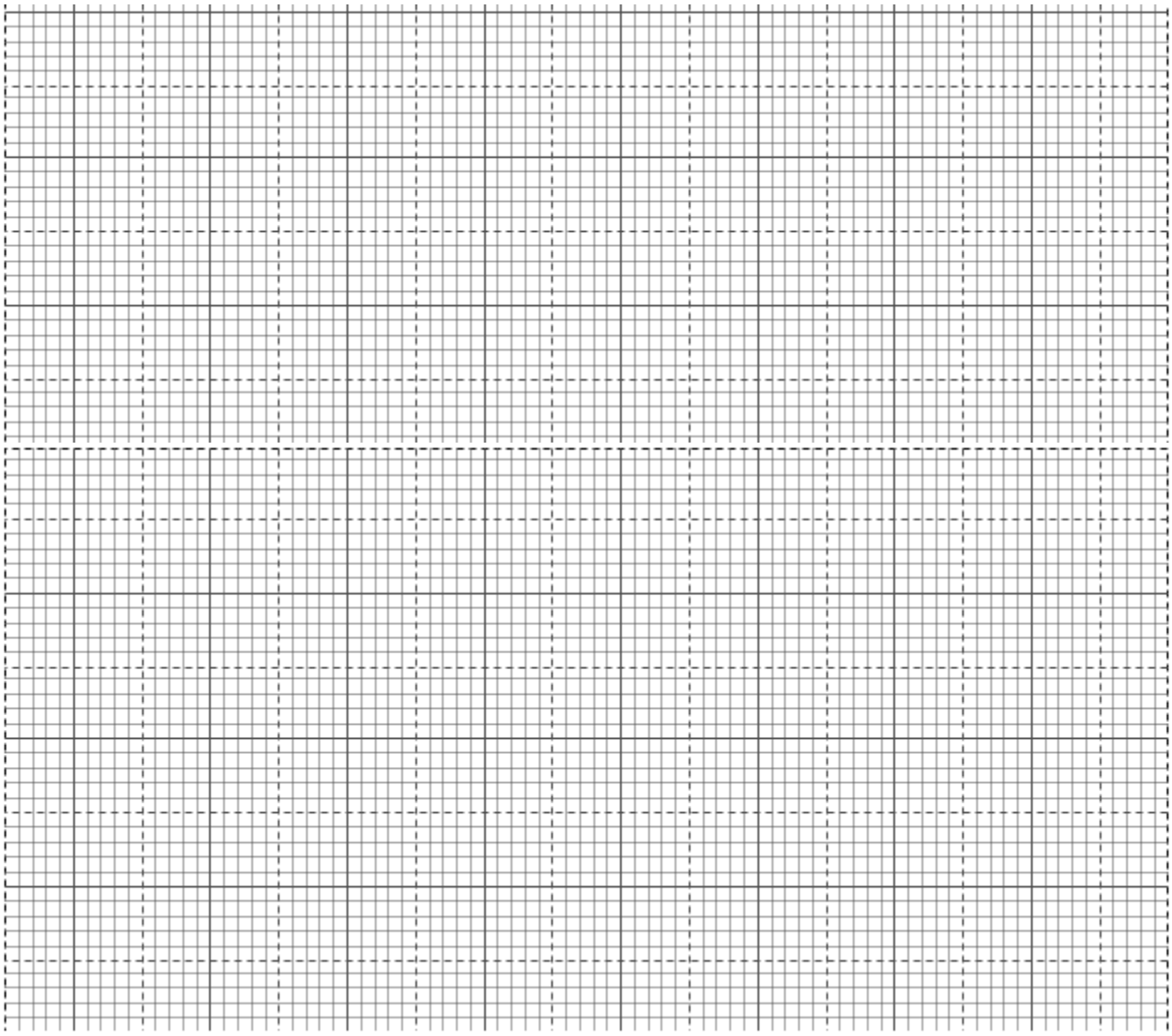
(b) Find the exact area bounded by the curve $y = (x - 1)(x - 3)$, y-axis, x-axis and the line $x = 3$ **(3marks)**

(c) Use trapezium rule with three trapezia to estimate the area bounded by the curve $y = (x - 1)(x - 3)$, y-axis, x-axis and the line $x = 3$. **(3marks)**

(d) Calculate the percentage error introduced by using the trapezium rule in (c) above. **(2marks)**

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21. Triangle ABC has A(1,4), B(1,1) and C(3,3). Draw $\triangle ABC$ on the grid provided.(1 mark



(a) $\triangle$ ABC is reflected in the line x = 0 to give $\triangle A_1 B_1 C_1$. Draw $\triangle A_1 B_1 C_1$ on the same grid and state its coordinates**.** **(3marks)**

(b) $\triangle A_2B_2C_2$ is the image of $\triangle A_1B_1C1$ under a stretch with x- axis invariant and scale factor 2. Determine the coordinates of $\triangle A_2B_2C_2$ and draw it on the same grid**.** **(3 marks)**

(c) $A_3(-1,7)$ and $B_3(-1,1)$ are the images of A_2 and B_2 respectively under a shear with y-axis invariant. Determine the coordinates of C_3 and draw$\triangle A_3B_3C_3$ on the same grid**.** **(3 marks)**

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22. Use a pair of compass and ruler only in this question

a) Construct a parallelogram ABCD in which AB = 6cm, AD = 4cm and angle BAD = 60^o **(3marks)**

b) Measure the length AC **(1mark)**

c) Show the locus of point P which moves so that it is equidistant from A and C **(3marks)**

d) The locus of point Q which moves so that angle BQD = 90^o **(3marks)**

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23. A plane leaves an airport P (10^0S, 62^0E) and flies due north at 800km/h.

(a) Find its position after 2 hours **(3marks)**

(b) The plane turns and flies at the same speed due west. It reaches longitude Q, 12^0W.

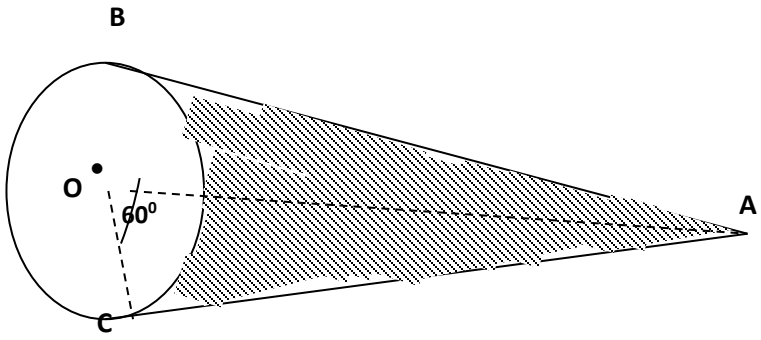
(i) Find the distance it has traveled in nautical miles. **(3marks)**

(ii) Find the time it has taken (Take $\pi = \frac{22}{7}$, the radius of the earth to be 6370km and 1 nautical mile to be 1.853km) **(2marks)**

(c)If the local time at P was 1300 hours when it reached Q, find the local time at Q when it landed at Q **(2mks)**

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24 In the figure below AB and AC are tangents to the circle center O at B and C respectively, the angle AOC = 60^0, radius of the circle 5cm.



Calculate;

a) The length of AC **(2marks)**

b) The area of triangle OAC **(2marks)**

c) The area of minor sector COD **(2marks)**

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d) The area of the shaded region **(4marks)**

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/1

PHYSICS

THEORY

Paper 1

Time: 2 hours

Instructions to Candidates

- *Write your name, admission number, class and signature in the spaces provided at the top of the page. This paper consists of two sections;* ***A*** *and* ***B.***
- *Answer* ***ALL*** *the questions in the spaces provided.*
- *Mathematical tables and electronic calculator may be used.*
- *All working MUST be clearly shown.*
- *This paper consists of* ***11*** *printed pages.*
- *Candidates should answer the questions in English and check to ensure that no question(s) is missing.*

FOR EXAMINER'S USE ONLY

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1 – 10	25	
B	11	10	
	12	11	
	13	13	
	14	09	
	15	07	
	16	05	
	TOTAL SCORE	**80**	

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SECTION A (25 MARKS)

Attempt all the questions in the spaces provided.

1.Define mechanics as used in Physics **(1 mark)**

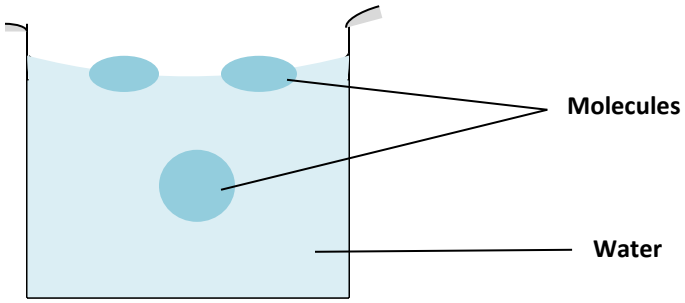
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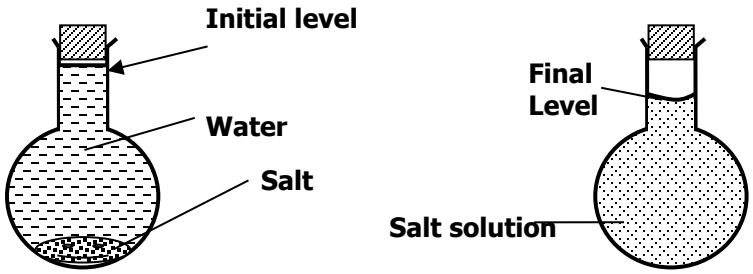
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2.The mass of an empty density bottle is 15g and 60g when full of oil of density $0.8gcm^{-3}$. Determine volume of water that would fill the density bottle completely.**(3marks)**

3.Give the molecular explanation of surface tension **(2 marks)**



4.The diagram below shows a flask with common salt and water. The adjacent diagram shows the same flask after it has been shaken and the salt has dissolved. State the purpose of experiment and explain what is observed. **(2 marks)**



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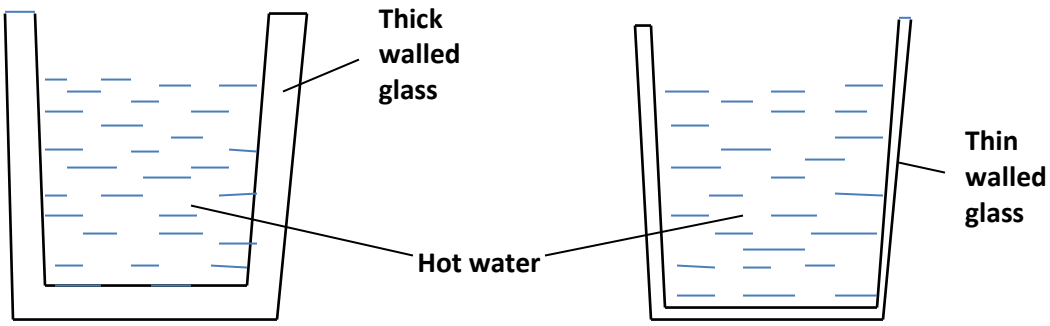
b) A drop of milk when carefully put in a glass of water turns the water white after sometimes, explain this observation **(1mark)**

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5.The figure below shows two glasses of different thickness



Hot water was poured in both glasses. State and explain what observed. **(2 marks)**

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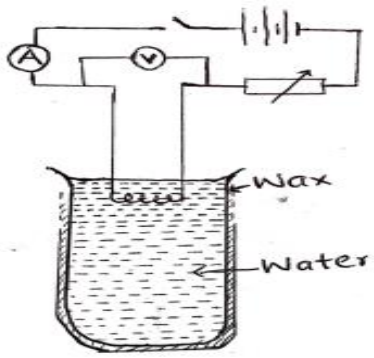
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6.The diagram below shows a heater immersed in water in a test tube coated with uniform layer of candle wax



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a) State and explain the observation after the switch is closed. **(2marks)**

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b) What observable changes would be made if water was replaced with mercury**(1mark)**

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7.State the conditions of equilibrium when the body is acted upon by a number of parallel forces **(2marks)**

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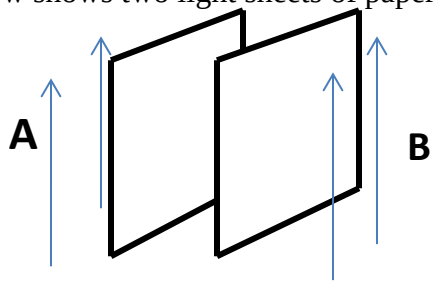
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8.The figure below shows two light sheets of paper arranged as shown.



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

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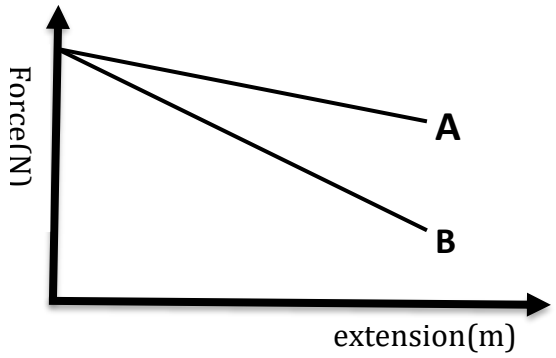
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9.The figure below shows a graph of Force against extension of two springs made from different materials



a) Compare the spring constants of the springs above **(1 mark)**

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b) State two ways in which the spring constant can be increased **(2 marks)**

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10. a) State Charles law for an ideal gas. **(1mark)**

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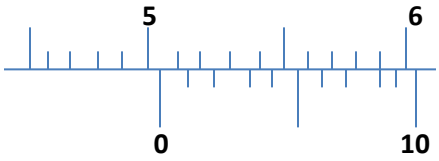
b) A gas has a volume of $20cm^3$ at 27^0C and normal atmospheric pressure. Calculate the new volume of the gas if it is heated to 54^0C at the same pressure. **(3marks)**

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SECTION B (55 MARKS)

Attempt all the questions in the spaces provided.

11. a) The figure below shows part of a scale of a vernier caliper with an error of +0.03cm. What is the actual reading? **(2 marks)**



b) In an experiment to estimate the thickness of an oil drop of diameter 0.1cm spread onto a circular patch of diameter 10cm.

i) Determine the volume of the oil drop **(2marks)**

ii) Calculate the area covered by the oil patch **(2marks)**

iii) Determine the thickness of the oil molecule **(2marks)**

iv) State **one** assumptions made in c(iii) above **(1mark)**

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v) State **one** possible sources of errors in this experiment **(1mark)**

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12. a) State Pascal's Principle of transmission of pressure in liquids **(1mark)**

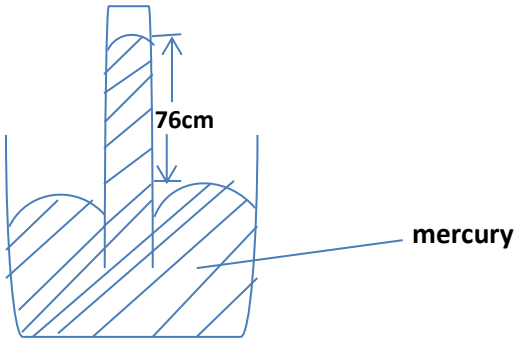
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b) The figure below shows an instrument used to measure atmospheric pressure

State with a reason the modification that would be required in a similar set-up if mercury was to be replaced with water **(2marks)**



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c)The barometric height of a town is 640mmHg. Given that the standard atmospheric pressure is 70cmHg and density of mercury is 13.6gcm^{-3}, determine the altitude of the town in metres (density of air = 1.3kgm^{3}) **(3marks)**

c) i) State two factors that affect the moment of a force **(2marks)**

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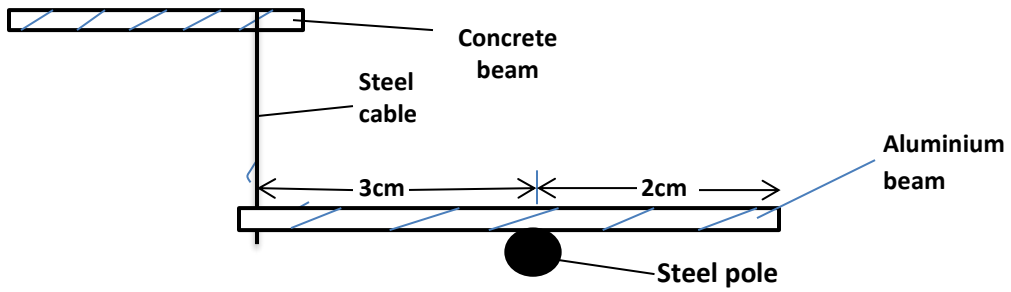
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ii) An aluminum beam 5.0m long and whose mass is 200g is suspended by a steel cable from a concrete beam and pivoted on a stool pole as shown below



Calculate the tension T in the steel cable **(3marks)**

13. a) Define displacement and state its SI Unit **(2marks)**

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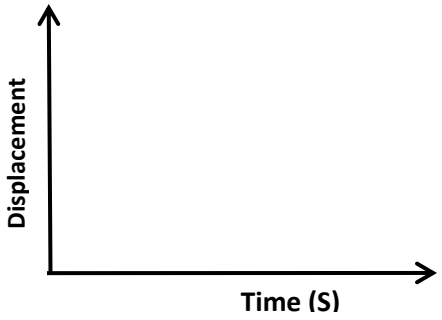
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b) A body is projected horizontally at a velocity of 120cms^{-1} from a cliff 90m tall

Draw a displacement–time graph to show the motion **(1mark)**



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c) Calculate

i) The time taken to hit the ground **(2marks)**

ii) The horizontal range. **(2marks)**

d) A stone is whirled with a uniform speed in horizontal circle having a radius of 12cm. It takes the stone 9seconds to describe an arc of length 6cm. Calculate:

I. The angular velocity **(2marks)**

II. Linear velocity of the stone **(2marks)**

III. Its periodic time T **(2marks)**

14. (a) State Newton's **2nd** Law of Motion **(1mark)**

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(b) A bus of mass 2000kg initially moving at $20ms^{-1}$ is brought to rest over a distance of 40m. Determine the force required to achieve this. **(3marks)**

(c) A mason uses six wheel pulley system to raise stones to a storey building for construction. He raises a weight of 3000N through a vertical height of 5m using the machine. If the mason pulls using an effort of 500N, calculate;

i) The velocity ratio of the pulley system. **(1 mark)**

ii) The work done by the mason. **(2 marks)**

iii) The useful work done by the pulley system. **(2marks)**

15. (a) State two ways in which the melting point of a substances can be raised **(2marks)**

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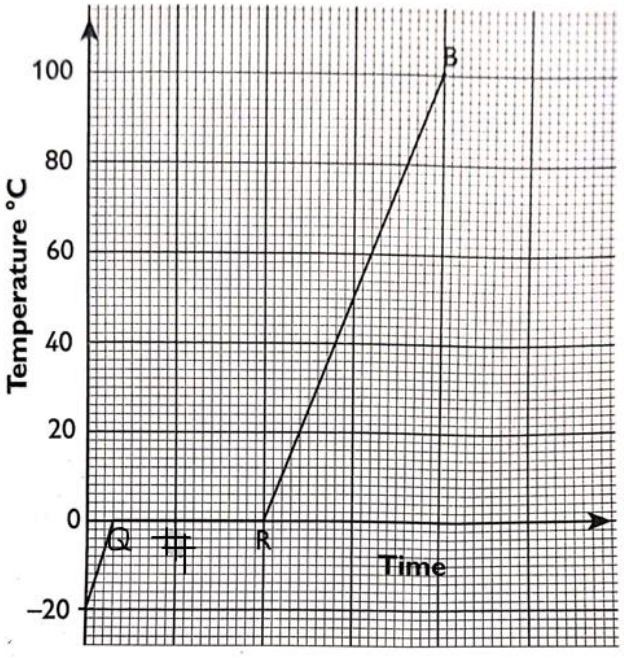
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(b)A 200g mass of ice at -20^{O}C was slowly heated by an element heater of power 30W. The figure below shows the graph of temperature against time.



Use the values given below to calculate the time in minutes corresponding to;

i) The line QR in the graph (*specific latent heat of fusion is 357000Jkg-1)* **(3marks)**

ii) The line RB in the graph *(specific heat capacity of water is 4200Jkg-1k-1)* **(1mark)**

c) Calculate the specific heat capacity of ice **(1mark)**

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16. a) State the law of floatation. **(1mark)**

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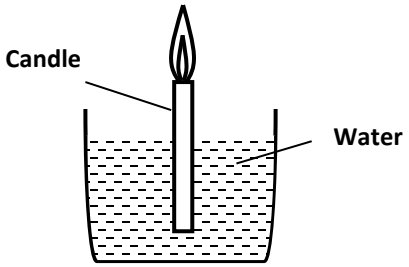
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b) A solid of mass 100g and density 2.5g/cm^3 weighs 0.5N when totally submerged in a liquid. Determine the density of the liquid. **(2marks)**

(c) The figure below shows a burning candle, weighted, dripless candle floating upright in water. Explain what happens after the candle burns for sometimes.

(2marks)



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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/2 PHYSICS PAPER 2
2 hours
INSTRUCTIONS TO CANDIDATES

i) Write your name, admission number and index number in the spaces provided above.
ii) Sign and write the date of examination in the spaces provided above
*iii) This paper consists of **TWO** sections **A** and **B***
*iv) Answer **ALL** the questions in section **A** and **B** in the spaces provided*
*v)All working **MUST** be clearly shown*
vi) Electronic calculators and mathematical tables may be used.
vii) ALL numerical answers must be expressed in decimal notation.
*viii) **This paper has 15pages. It is the responsibility of the candidate to ascertain that all the pages are printed as indicated and that no questions are missing.***
*ix) **Candidates should answer the questions in English.***

For Examiners Use Only

Section	Question	Maximum Sc	Candidate's Sc
A	1 – 13	25	
B	14	10	
	15	08	
	16	09	
	17	10	
	18	10	
	19	08	
	TOTAL	80	

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SECTION A (25 marks)

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

1. **Figure 1** shows a current-carrying conductor **AB** in a magnetic field..

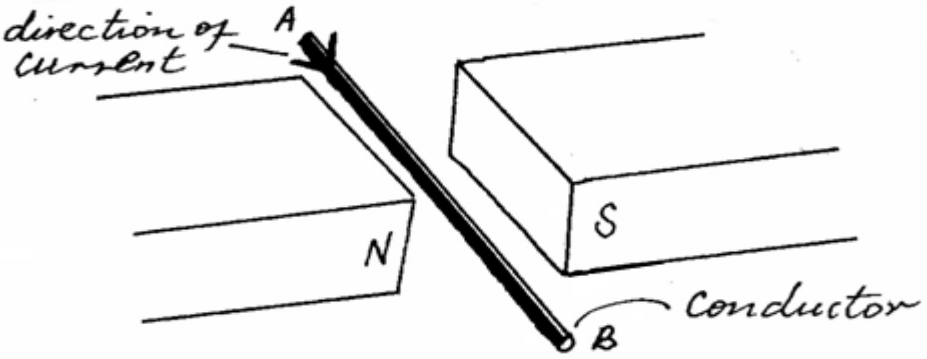


Figure 1

(a) Indicate the direction of force F acting on the conductor. **(1mark)**

(b) State one factor that determine the magnitude of the force F other than current. **(1mark)**

……

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……

2. A girl standing at a distance claps her hands and hears an echo from a tall building 2 seconds later. Determine how far the building is. *(Take the speed of sound in air =340m/s)* **(2marks)**

3. State **two** ways in which one can increase the strength of an electromagnet. (2 marks)

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4. **Figure 2** show two mirrors inclined at 60° to each other.

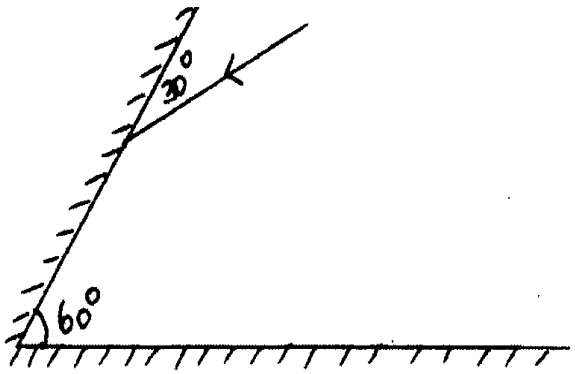


Figure 2

Complete the ray diagram to show how it travels after striking the two mirrors and find the angle of reflection on each surface. (2marks)

5. An electric heater rated 240V, 3000W is to be connected to a 240V mains supply through a 10A fuse. Determine whether the fuse is suitable or not. (3 marks)

6. State the reason why long distance power transmission is done at a very high voltage. **(1 mark)**

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7. One of the defects of a simple cell is local action. Explain how this defect is minimized **(1mark)**

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8. **Figure 3** shows paths taken by three radiations **A,B** and **C** from a radioactive isotope through an electric field.

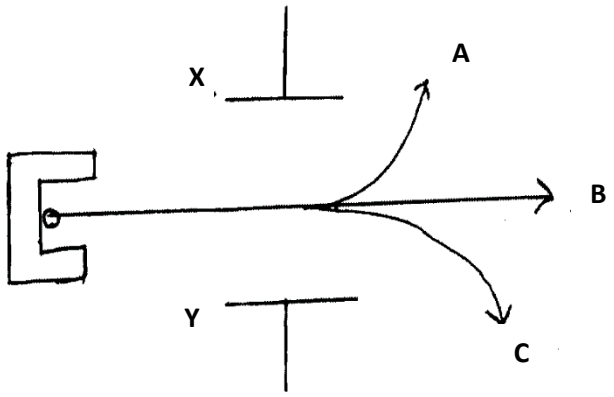


Figure 3

(i) State the charge on plate **Y**

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(ii) Identify the radiation **B** **(1mark)**

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……

(iii) Give a reason why **A** deviates more than **C** **(1mark)**

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9. A wave travels across water at a particular place with a velocity of 2m/s, period 0.15s and amplitude 0.2cm.

(i) Determine the frequency of the wave. **(1mark)**

(ii) Determine the wavelength of the wave. **(1mark)**

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(iii) Using a suitable scale, sketch a complete diagram of the displacement – time graph **(1mark)**

10. **Figure 4** shows two parallel magnets with unlike poles adjacent to each other. Sketch the magnetic field pattern around the magnets **(1mark)**

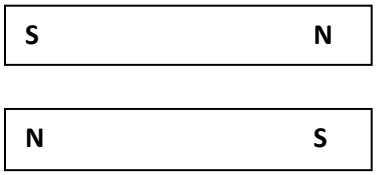


Figure 4

11. Give a reason why diffraction of light is not a common phenomenon in everyday life. **(1mark)**

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12. **Figure 5** shows an object placed in front of a concave mirror. By use of correct ray diagram, locate the position of image. **(2 marks)**

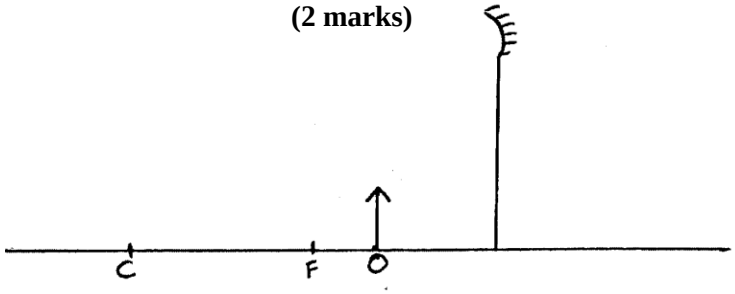


Figure 5

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13. (i)An uncharged metal rod close but not touching the cap of a charged electroscope causes a decrease in the divergence of the leaf. Explain. (1mark)

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(ii) **Figure 6** shows a capacitor connected to a battery such that the plates P and R acquire the charges shown.

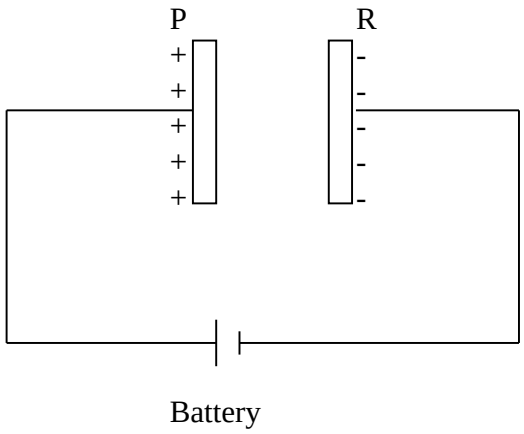


Figure 6

Indicate on the diagram **(with an arrow**), the direction of the flow of electrons during the process of charging **(1mark)**

SECTION B (55 marks)

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

14. a) State Lenz's a law of electromagnetic induction. (1mark)

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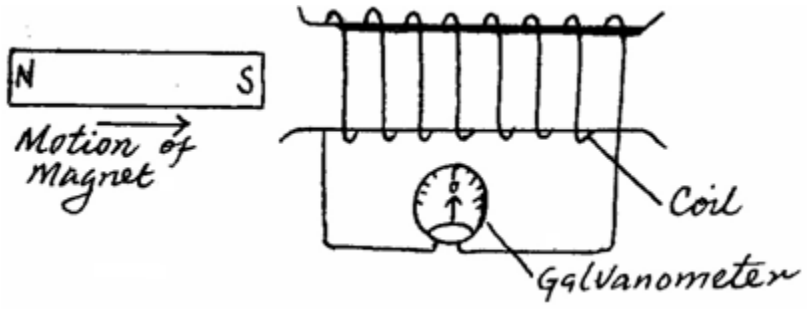
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b) **Figure 7** shows a bar magnet moved into a coil of insulated copper wire connected to a centre-zero galvanometer.

Figure 7



Show on the diagram the direction of induced current in the coil. **(1mark)**

(c) A transformer with 2000 turns in the primary circuit and 150 turns in the secondary circuit has its primary circuit connected to a 800Va.c. source. It is found that when a heater is connected to the secondary circuit it produces heat at the rate of 1000W. Assuming 100% efficiency, determine the:

(i) voltage in the secondary circuit. **(2 marks)**

(ii) current in the primary circuit. **(2 marks)**

(iii) current in the secondary circuit. **(1 mark)**

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(d) Determine the cost of using the following appliances in one month (30 days) given that the cost of electricity is Ksh.9.50 per kWh.

I A 2000W water heater for 2 hours per day.

II A 75W bulb for 10 hours per day.

III A 1500W electric iron for 1 hour per day. **(3 marks)**

15. a) (i)State the purpose of cooling fins in the X-ray tube. **(1 mark)**

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(ii) The accelerating potential of a certain X-tube is decreased. State the change observed on the X-rays produced. **(1 mark)**

b) State one difference between X-rays and cathode rays. (1 mark)

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c) **Figure 8** shows a simple cathode ray tube.

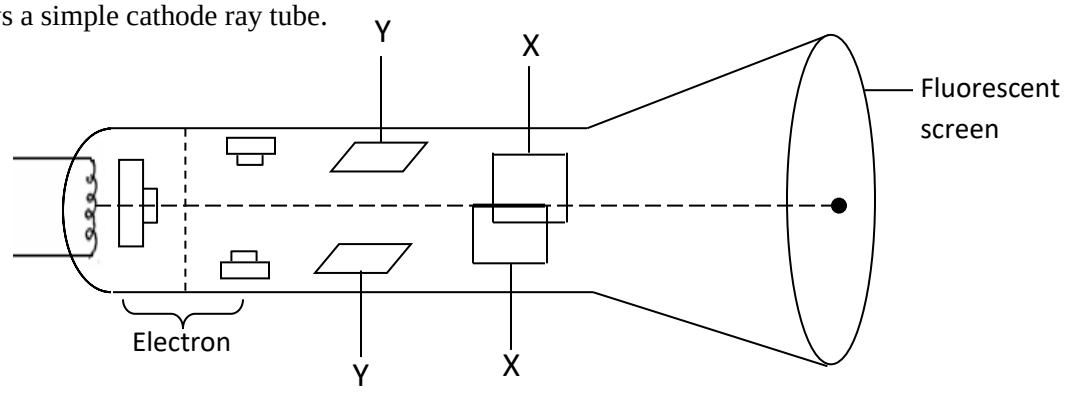


Figure 8 gun

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(i) Explain how the electrons are produced in the tube. **(2 marks)**

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(ii) State one function of the anode. **(1 mark)**

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(iii) At what part of the cathode ray tube would the time base be connected? **1 mark)**

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(iv)Why is a vacuum created in the tube? (1 mark)

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16. (a) A cell drives a current of 5A through a 1.6Ω resistor. When connected to a 2.8Ω resistor, the current that flows in 3.2A. Determine electromotive force E and internal resistance r of the cell. **(3 marks)**

(b) Determine the length of a nichrome resistance wire of cross-sectional area $7 \times 10^{-8} m^2$ required to make a resistor of 10Ω. (*Take resistivity of nichrome = $1.10 \times 10^{-6} \Omega m$*). **(2 marks)**

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(c) **Figure 9** shows a current of 2A through 10 Ω resistor**.** Determine the value of resistor R. **(2 marks)**

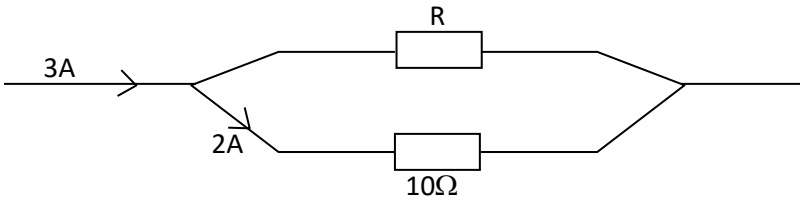


Figure 9

d) The amount of current flowing through a conductor in 2.5 minutes is 2.0A. Determine the quantity of charge.

(2 marks)

17. a)Define photoelectric emission. (1mark)

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(b) **Figure 10** shows ultraviolet light striking a clean zinc plate on a positively charged leaf electroscope.

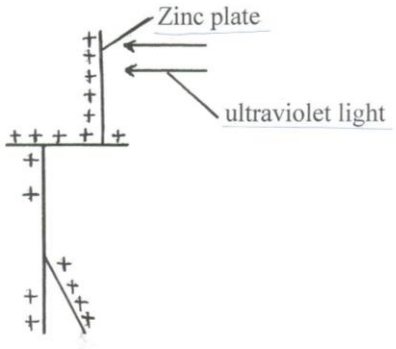


Figure 10

Explain why the leaf does not fall. (2marks)

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c) A certain metal has a work function of 2.3eV. (*Take 1eV = 1.6 × 10^{-19} J, Planck's constant h = 6.63 × 10^{-34}Js, and velocity of light in vacuum C = 3.0 × 10^{8}m/s)* determine*:*

(i) its threshold frequency. **(2marks)**

(ii) the maximum kinetic energy of the photoelectrons produced when the metal is illuminated by light of wavelength 5.0 × 10^{-7}m. **(3marks)**

(d) The chart below shows an arrangement of different parts of the electromagnetic spectrum.

Radio wave	**A**	**B**	Visible light	**C**	**D**	Gamma Rays

(i) Name the radiation represented by **C**. (1 mark)

……

(ii)Name a device that can be used to detect radiation **A**. (1 mark)

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18. (a) **Figure 11** shows a diagram of the human eye.

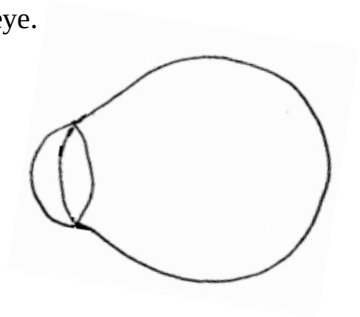


Figure 11

Sketch a ray diagram to show long sightedness. (1 mark)

(b) An object placed 10cm from a convex lens is magnified three times. Determine the focal length of the lens. (4 marks)

(c) (i) **Figure 12** shows a ray of light travelling between water-glass interface.

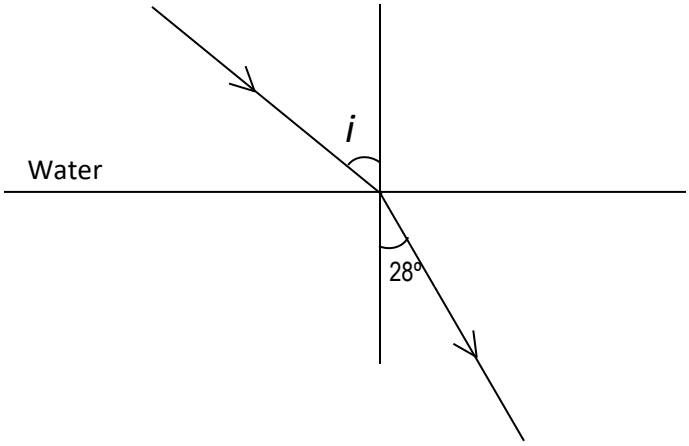


Figure 12

Determine the value of i given that ${}_a\eta_g$=1.52 and ${}_a\eta_w$ =1.33. **(3 marks)**

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(ii) State two conditions for total internal reflection to occur. (2 marks)

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19. (a) Define doping **(1mark)**

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(b) Differentiate between a p-type and n-type semi conductors in terms of charge carriers. **(2marks)**

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(c) Explain what happens to the depletion layer when a diode is reverse biased. (2 marks)

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(d) **Figure 13** shows a circuit with two diodes A and B and a battery.

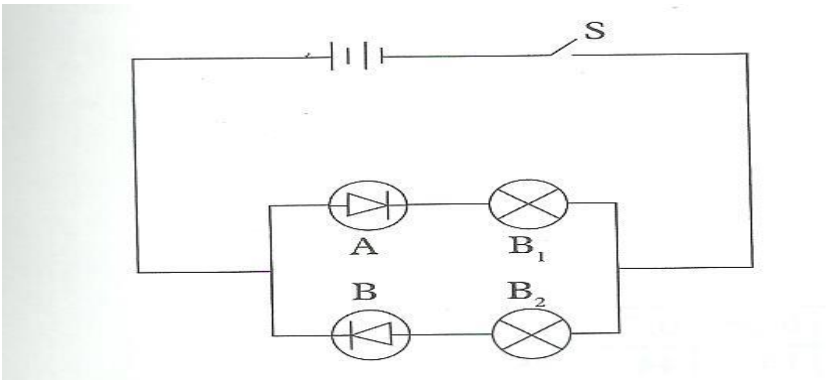


Figure 13

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State with reason the observation made when S is closed. (2 marks)

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(e) Name one application of diodes. (1 mark)

……

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BRILLIANT STUDENTS F4 END TERM 2 SERIES 3 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

232/3
PHYSICS
(Practical)
Paper 3
Time $2^{1}/_{2}$ HOURS

INSTRUCTIONS TO CANDIDATES
1. Write your **name, index number, class, date** and **signature** in the spaces provided above.
2. This paper consists of two questions **1** and **2.**
3. Answer all questions in the spaces provided.
4. Non-programmable calculators and mathematical tables may be used.
5. Show all your workings.

QUESTION 1	1 (a)	1 (e)	1 f (i)	1 f (ii)	1 f (iii)	TOTAL
Maximum score	1	8	5	3	3	20
Candidates score						

QUESTION 2	A(a)	A(b)	A(c)	A (g)	A(h)	A(i)	A(j)	A(k)	B(d)	B(e)	B(f)	TOTAL
Maximum score	1	1	1	2	1	2	1	1	3	5	1	20
Candidates score												

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QUESTION ONE

1. You are provided with the following.

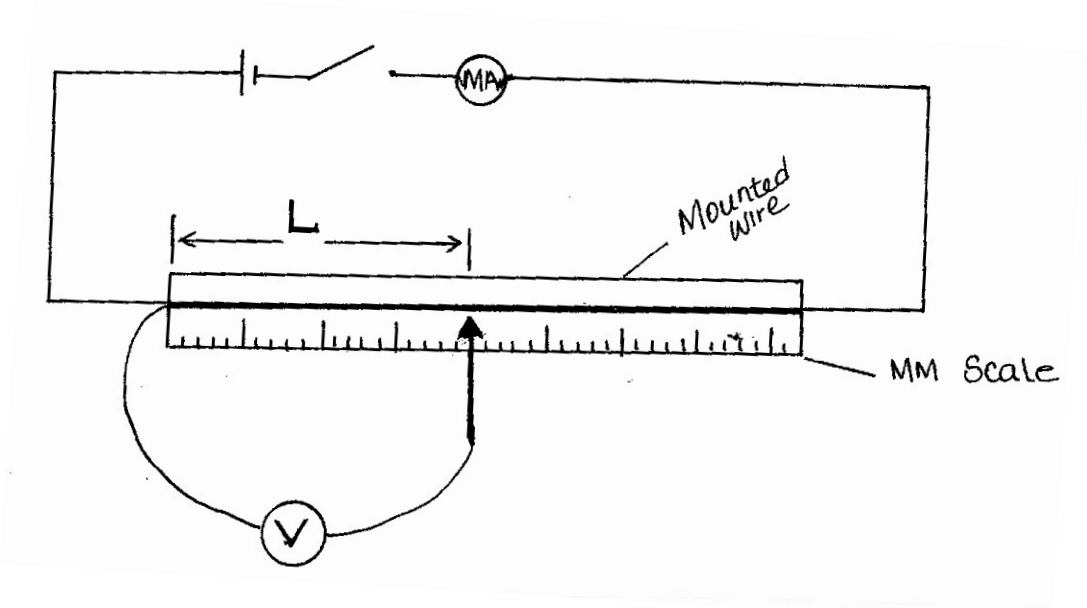
- A millammeter.
- A voltmeter.
- A wire mounted on a mm scale.
- A switch.
- A long wire with a crocodile clip at one and (crocodile clip to be used as a slider or jockey).
- A new dry cell (size D) and a cell holder.
- A micrometer screw gauge (may be shared).
- 5 connecting wires, two with crocodile clips at the end.

Proceed as follows:

(a) Measure the diameter, d of the mounted at three different points.

Average diameter d = _____mm **(1mk)**

(b) Set up the apparatus as shown in the circuit diagram in the figure **below**.



(c) Close the switch and tap the mounted wire with the crocodile clip as shown in the circuit. Ensure that both meters show positive deflection. Open the switch.

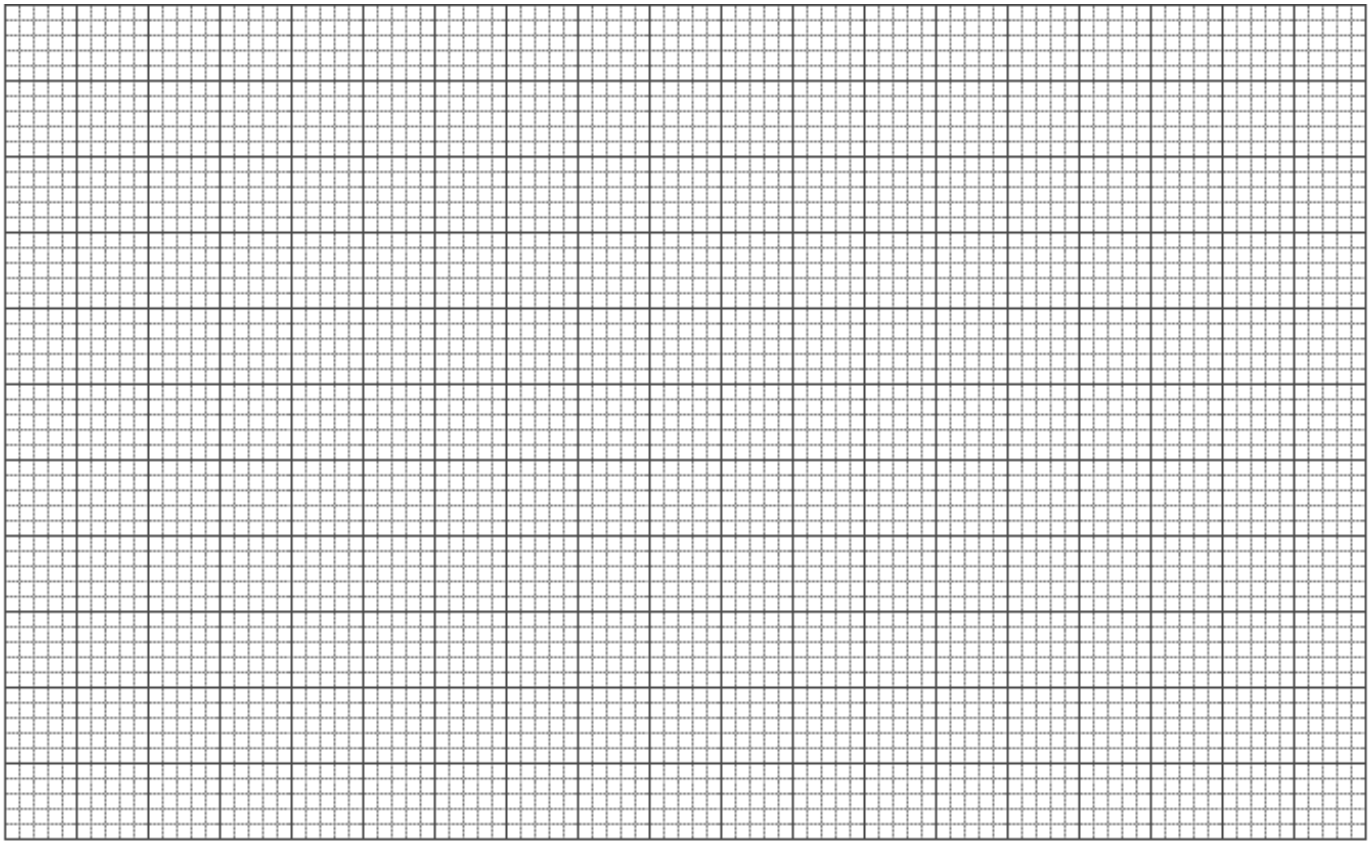
(d) Tap the wire at **L = 20cm.** Close the switch read and record in the time provided the milliammeter and voltmeter reading.

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(e) Repeat the procedure in (c) for other values of L, shown in the table below and complete the table. **(8mks)**

L(cm)	L(m)	V (Volts)	I (mA)		
	I (Amps)	$R = V/I$			
20					
30					
40					
50					
60					
80					

(f) (i) Plot the graph of R (Y-axis) against L(m). **(5mks)**



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(ii) Determine the slope of the graph. **(3mks)**

(iii) Given that $R = PL/A$ were A is the cross-sectional area of the wire and P is a constant for the material of the wire, determine the value of the constant P.

(3mks)

QUESTION TWO

This question has two parts A and B. Answer all the parts

PART A

You are provided with the following:

- A metre rule
- Two masses labelled A and B
- 250 ml transparent plastic beaker
- Three pieces of thread, each 30cm long.
- Stand with clamps
- Tissue paper.
- Vernier calipers (to be shared)
- 200 ml of a liquid L
- Weighing balance (to be shared)

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Proceed as follows:

a. Take **mass A** and measure the diameter d and height h using the Vernier calipers

d=……..m

h=……..m **(1mark)**

b. Determine the volume V given that $V = \pi(\frac{d}{2})^2 h$

V……m³ **(1mark)**

c. Using a stand and one piece of thread, suspend the metre rule in air such that it balances horizontally. Record the position of the centre of gravity (G)

G = _____ cm **(1mark)**

(NOTE: The metre rule should remain suspended at this point throughout the experiment.)

d. Set up the apparatus as shown in Figure 1 below;

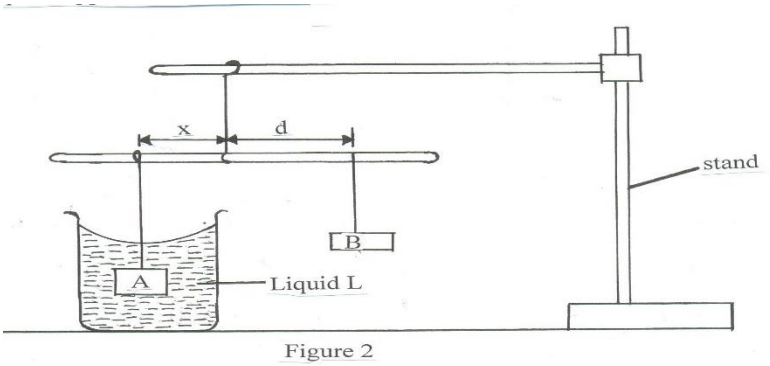


Figure 2

e. Suspend the mass A at a distance **x = 30cm** and completely immerse it in liquid L without touching the sides of the beaker.

f. Hang mass B and adjust its position such that the rule is balanced and measure the distance **d cm.**

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g.Tabulate your results in table 1 below;

$x\ (cm)$	30	35	40
$d\ (cm)$			
$\frac{d}{x}$			

(2marks)

h.Determine the weight of mass B in air. Given that

$g = 10\ N/Kg$

Weight in air =…… (1mark)

i. Using the principle of moments, determine the apparent weight **P** of mass **A** when completely immersed in liquid L.

Apparent weight P = …….. **(2marks)**

j. Find the **upthrust, U** on mass A when completely immersed**.** **(1marks)**

Upthrust, U =…….

k.Determine the density of liquid L, given that**;** **(1mark)**

$$\boldsymbol{\rho = \frac{Un}{V}} \quad \textbf{\textit{where}}\ \boldsymbol{n = 0.1Kg/N}$$

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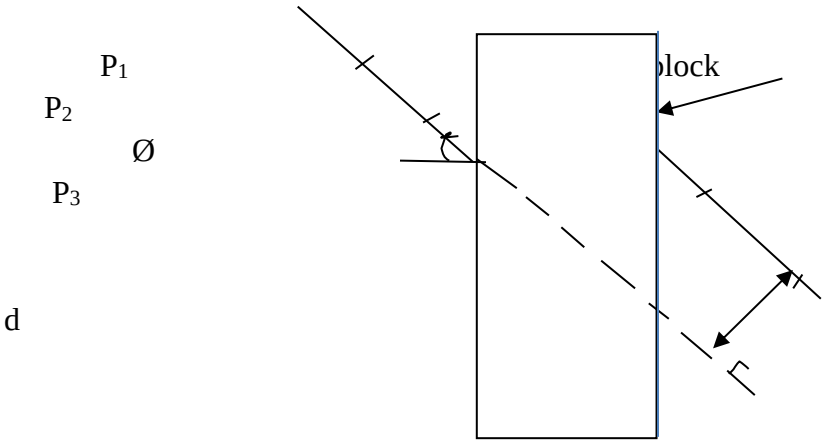
PART B

You are provided with the following

- A rectangular glass block
- Four optical pins
- A piece of soft board
- A plain sheet of paper
- 4 thumb pins

Proceed as follows:

(a) Place the plain sheet of paper on the soft board and fix it using the thumb pins provided . Place the glass block at the centre of the sheet, draw its outline. Remove the glass block .



(b) Draw a normal at a point 2cm from the end of the longer side of the block outline. This normal line will be used for the rest of the experiment. Draw a line at an angle of angle $Ø=25^0$ from the normal .Stick two pins p_1 and p_2 vertically on this line.

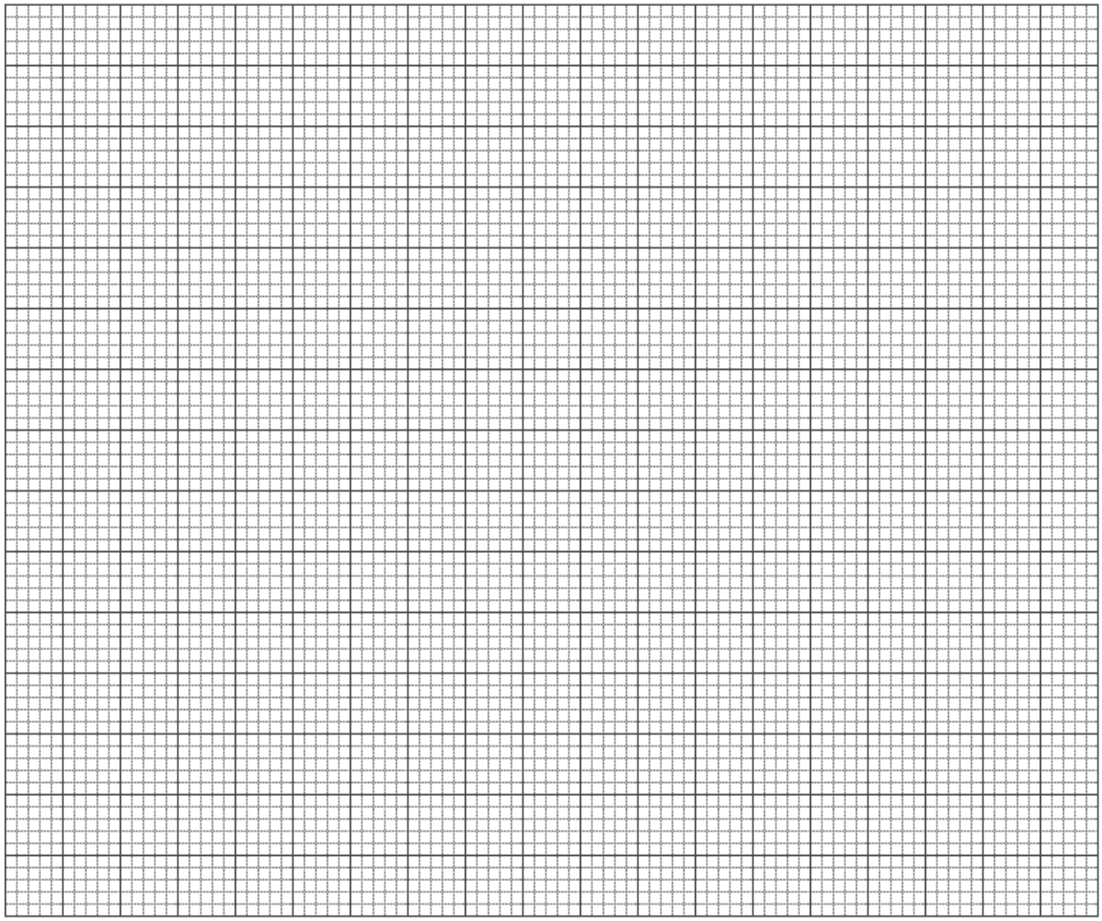
(c) By viewing through the glass from the opposite side, stick two other pins p_3 and p_4 vertically such that they are in line with the images of the first two pins. Draw a line through the marks made by p_3 and p_4 to touch the outline. Extend the line p_1p_2 through the outline (dotted line) .Measure and record in the table the perpendicular distance d between the extended line and the line p_3 and p_4 Record this value in the table.

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(d) Repeat the procedure in (g) and (h) for other values of Θ shown in the table. (3marks)

Θ (deg)	25	35	40	45	55	60	65
d(cm)							

(e) plot a graph of d against Θ (5mark)



(f) Use the graph to estimate the value of d when Θ =0 (1mark)

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