BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS *(ALL SUBJECTS TESTED)*



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(ALPHABETICALLY ARRANGED)

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

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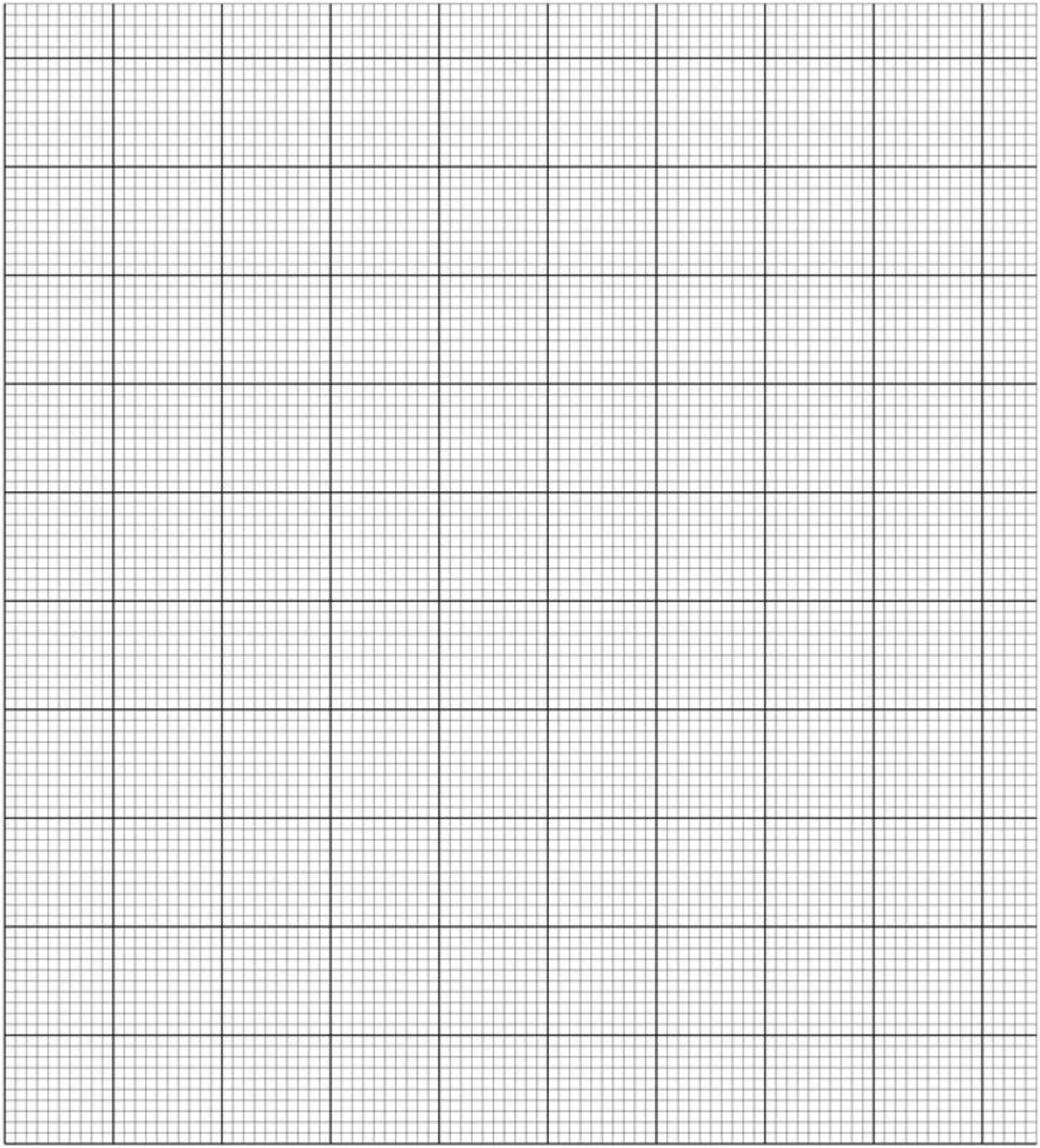
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443/1

AGRICULTURE

PAPER 1

2 HOURS

FORM 3 TERM 2

SECTION A [30 MARKS]

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

1.Give four reasons why timely weed control is advisable in crop production. **(2mks)**

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2.State four disadvantages of use of vegetative propagation in bananas **(2mks)**

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3.Outline four functions of magnesium in crops. **(2mks)**

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4.State two conditions when you recommend fertilizer application by spraying method. **(1mk)**

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5.Name two macronutrients whose deficiency in crops causes chlorosis **(1mk)**

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6 State four characteristics of a good rootstock for grafting **(2mks)**

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7. Give four precautions observed in pruning mature tea **(2mks)**

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8. List four morphological features of plants that influence the selectivity of herbicides. **(2mks)**

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9. State four conditions that may lead to land sub division in Kenya. **(2mks)**

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10. State two practices carried out to ensure field hygiene **(1mk)**

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11. State four roles of irrigation water in a rice field. **(2mks)**

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12. State four ways of classifying pests **(2mks)**

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13. What is solifluction erosion? **(1mk)**

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14. State four ways by which trees help in soil conservation. **(2mks)**

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15. Give four characteristics of materials used in the preparation of compost manure. **(2mks)**

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16. Give four benefits of a good soil structure in crop production. **(2mks)**

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17. State four objectives of land tenure reform. **(2mks)**

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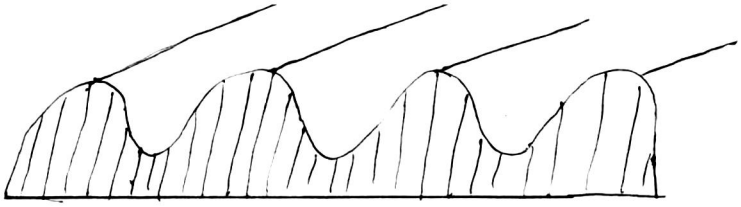
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SECTION B (20 MARKS)

Answer all questions in the spaces provided in this section

18. The diagram below illustrates a tertiary operation. Study it and answer the questions that follow.



(i) Identify the tertiary operation. **(½ mk)**

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(ii) State **three** reasons for carrying out the above tertiary operation. **(1½mk)**

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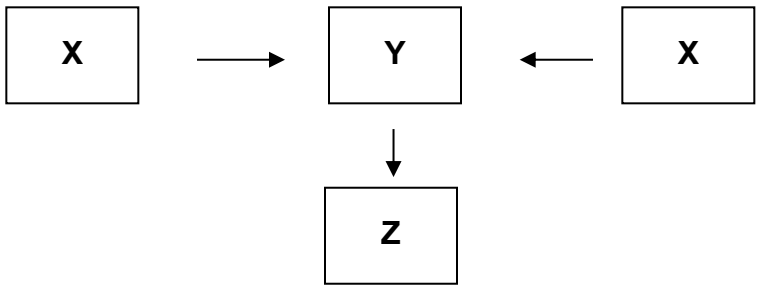
(iii) Other than the above tertiary operation, name two other tertiary operation. **(1mk)**

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19. The illustration below represents a method used in preparation of a compost manure.



(iv) Name the method illustrated above. **(1mk)**

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(v) Name the crop in which the use of the manure is most appropriate. **(1mk)**

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(vi) State three indicators to show that the manure is ready for use in the farm. **(3mks)**

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20. Study the record below and use is to answer the questions that follow.

Season:……	Field No. ……..
Crop grown:…….	Net area:……
Ploughing date:……..	Variety;……..
Inputs:……..	Planting date:……
Remarks:…….	

(a) Identify the farm record represented above. **(1mk)**

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(b) What other **<u>two</u>** pieces of information may be contained in the farm record above? **(1mk)**

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(c) Why is it important for a farmer to keep such a record in the farm? **(1mk)**

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21.



(i)Identify the above weed. **(1mk)**

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(ii)Classify the weed according to its lifespan. **(1mk)**

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(iii)State **two** reasons why the weed should be controlled. **(2mks)**

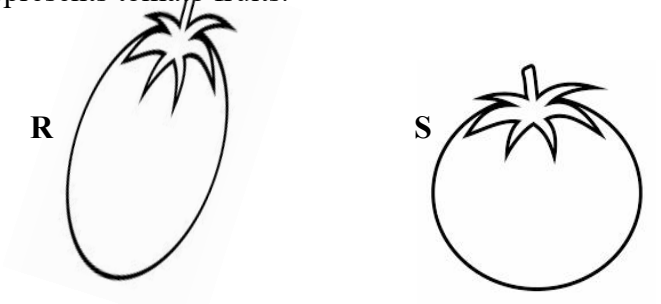
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22. The diagrams below represents tomato fruits.



(a)Which of the diagrams represents tomato variety for?

(i) Processing **(1mk)** ……

(ii) Fresh market. **(1mk)** ……..

(b)State **two** importance of the above vegetable to a farmer. **(2mks)**

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(C)Give **two** effects of too much nitrogen on tomato fruits. **(1mk)**

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SECTION C (40 MARKS)

Answer ***only two*** questions in this section in the spaces provided.

23 **a)**Describe the methods used in preparing materials in readiness for planting**.** **(8mks)**

b) Explain the factors that may determine spacing of crop in the farm **(8mks)**

c) Explain briefly the factors that influence timely planting. **(4mks)**

24a Describe ten safety precautions that should be taken when using herbicides to control weeds. **(10mks)**

b) Explain ten farming practices which help to conserve soil on a farm. **(10mks)**

25. Describe the production of kales under the following sub-heading.

(a) Nursery bed siting **(4mks)**

(b) Nursery bed preparation **(4mks)**

(c) Nursery management **(7mks)**

(d) Trans planting **(5mks)**

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FORM 3 AGRICULTURE PAPER 2

END OF TERM 2

SECTION A (30MKS)

1.State two uses of sickle on farm **(1mk)**

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2.Distinguish between a zoonotic disease and a notifiable disease. **(2mks)**

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3.State three factors considered when siting poultry house **(1½mks)**

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4.List any four farm structures that are necessary for holding dairy animals. **(2mks)**

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5.Give any four non-chemical methods of controlling ticks in the farm. **(2mks)**

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6.State two advantages of using wood in the construction of farm building **(1mk)**

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7.(a) What is embryo transplant ? **(1mk)**

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(b) Give two advantages embryo transplant **(2mks)**

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8.State two uses of footbath in cattle dip **(2mks)**

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

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10. Distinguish between crutching and ringing in livestock management. **(2mks)**

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11. State two purposes of adding addictives in livestock feed. **(1mk)**

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12. (a) Define caponization **(1mk)**

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(b) Give four reasons for caponization **(2mks)**

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13. List four ways in which vaccines can be administered to animals. **(2mks)**

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14. Give two functions of spill-way in fish pond. **(1mk)**

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15. Name any four dairy goats **(2mks)**

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16. State three signs of farrowing in sows **(1½mks)**

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17. 'I am breed of goat mainly kept for hair production'. Who am I ? **(1mk)**

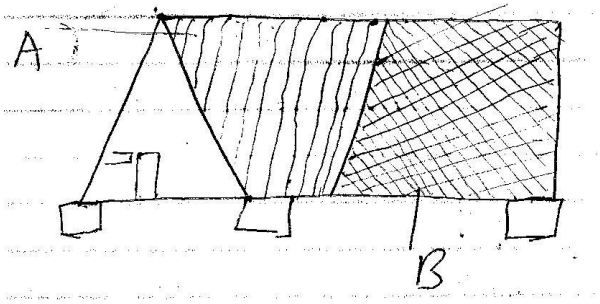
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SECTION B (20MKS)

Attempt all questions.

18. Study the illustration below carefully of a farm structure used in rearing poultry.



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

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(ii) Name the materials used in construction of the parts A and B. **(2mks)**

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(iii) Give two uses of the structure **(2mks)**

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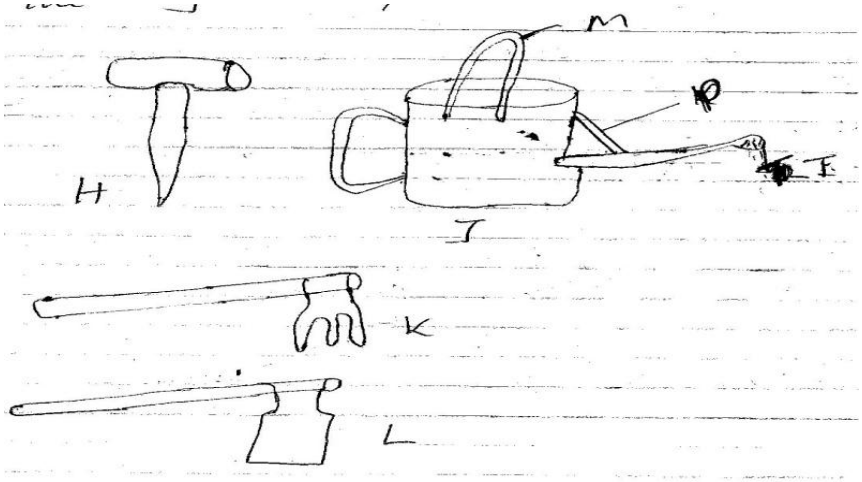
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19. Using the pea sons square method, calculate how much of wheat 10% DCP would be mixed with sunflower seed cake 35% DCP to come up with 100kg Duck mash 20% DCP. (Show your working) **(6mks)**

20. The diagrams H, J, K, L institute some tools.



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(a) Identify the above tools. **(2mks)**

H - ……..

J -…….

K -……..

L -……..

(b) State the uses of the tools **(4mks)**

L -……..

H -……..

J -…….

K -……..

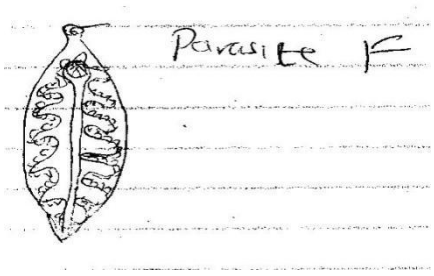
(c) Name the labelled parts of tool J **(1½ mks)**

M -……

K -……..

L -……

21. The diagram below represent livestock parasites.



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(a) Identify the parasite F **(1/2mk)**

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(b) State two symptoms of attack by parasite F in an animal. **(1mk)**

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SECTION C:

Choose any two questions

22 (a) Outline the uses of fences in the farm. **(10mks)**

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(b) Highlight five disadvantages of live fences. **(5mks)**

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(c) List five ways of maintaining farm fences. **(5mks)**

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23 (a) Discuss five methods of identification in livestock **(15mks)**

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(b) State five reasons for culling in cattle production **(5mks)**

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24(a) State five factors to consider in selecting construction materials. **(5mks)**

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(b) Explain factors to consider in siting farm structures **(10mks)**

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(c) Indicate the importances of farm buildings **(5mks)**

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FORM THREE

BIOLOGY PAPER 1: 231/1

TIME: 2 HRS

Instructions: Answer all the questions in the spaces provided.

1. What is the role of the following organelles? **(2mks)**

(a) Ribosomes

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(b) Secretory vesicle

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2 Give a reason why the coarse adjustment knob should not be used together with the high power objective lens. **(1mk)**

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3 What are the structural differences between mitochondria and chloroplasts? **(2mks)**

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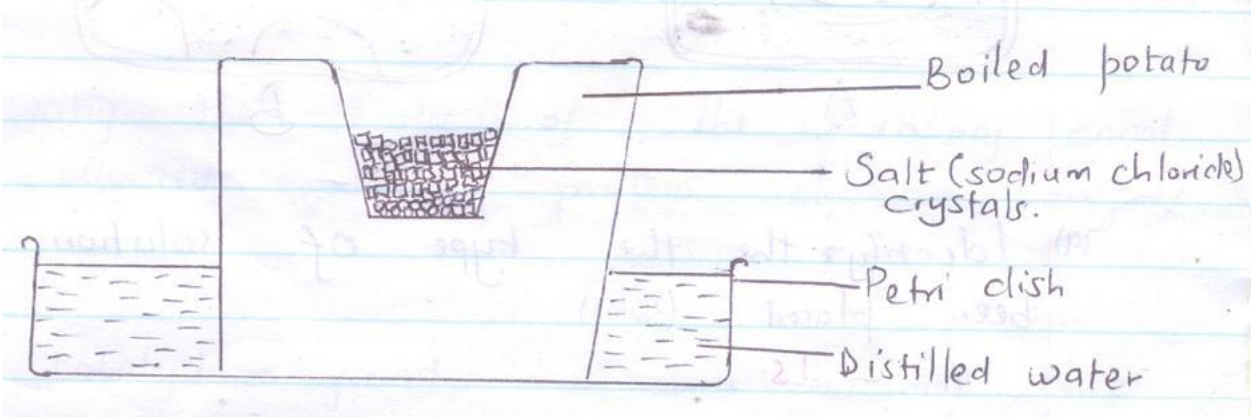
4 Which processes of living organisms depend on diffusion? **(2mks)**

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5 During a biological experiments, some form one students peeled a medium sized potato and bored a hole on top. They then boiled the potato for 10 minutes then set up the experiment as shown below.



(a) Which physiological process was being investigated? **(1mk)**

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(b)(i) State the expected results after 30 minutes. **(1mk)**

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(ii) Give a reason for the results obtained in (b)(i) above. **(2mks)**

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6(a) What is wilting? **(1mk)**

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(b) State how temporary wilting can be advantageous to plants. **(1mk)**

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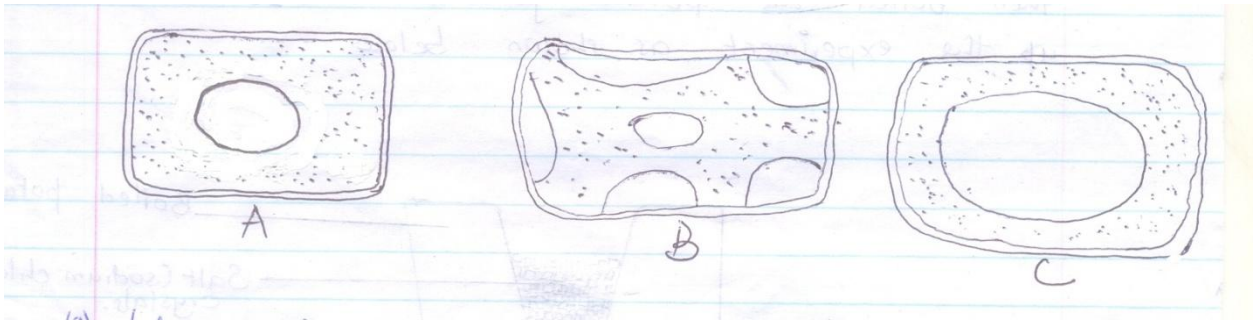
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7 Epidermal cells of onion bulb were placed in three liquids A,B and C of different concentrations. Sections were then placed on a glass slide and observed under the medium power of the microscope.

The appearance of each is shown in the diagram A,B and C



(a) Identify the type of solution each cell had been placed. **(3mks)**

A -……..

B -……

C -……

(b) State the physiological term applied to the epidermal cell labeled B. **(1mk)**

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8. How are the following parts of a leaf adapted to their functions.

(a) cuticle and epidermis **(1mk)**

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(b) palisade mesophyll layer **(1mk)**

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(c) Lamina **(1mk)**

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9(a) What are enzyme inhibitors **(1mk)**

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(b) Give three possible ways of terminating an enzyme – catalyzed reaction. **(3mks)**

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10(a) What is the function of bile salts? **(1mk)**

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(b) Explain why the walls of the alimentary canal are not digested by the protein digestive enzymes. **(1mk)**

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(c) Name one carbohydrate found in a balanced diet, that enhances the process of peristalsis. **(1mk)**

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11(a) Which apparatus is used to measure the rate of transpiration. **(1mk)**

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(b) State two precautions which should be taken when setting up the apparatus you have named in 11(a) above, **(2mks)**

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12(a) Give two reasons as to why clotting of blood is important. **(2mks)**

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(b) What is the role of platelets in the process of blood clotting. **(1mk)**

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(c) Name two enzymes required in the process of blood clotting. **(2mks)**

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13 Using relevant examples distinguish between single and double circulatory systems. **(2mks)**

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14 What is the role of vascular bundles in plant nutrition? **(3mks)**

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15 What characteristics do mammalian lungs and the gills of bony fish have in common that enables them to exchange gases efficiently? **(3mks)**

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16 The table below shows the percentage composition by volume of inhaled and exhaled air:-

Gas	Inhaled air (%)	Exhaled air (%)
Oxygen	21	16
Carbon IV oxide	0.03	4.0
Nitrogen	79	79

(a) By what percentage is the carbon (iv) oxide concentration in exhaled air higher than inhaled air? **(1mk)**

(b) Explain the difference in the composition of the gases between inhaled and exhaled air. **(2mks)**

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17 The equation below shows what happens in cellular respiration.

$C_{18}H_{36}O_2 + 26\ O_2 \longrightarrow 18CO_2 + H_2O + ATP$

(a) What do you understand by the term Respiratory Quotient? **(1mk)**

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(b)(i) Work out the RQ for the above substance. **(2mks)**

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(ii) Identify the substance being oxidized. **(1mk)**

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(iii) Which type of respiration is taking place? **(1mk)**

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18(a) Explain what is meant by the term osmoregulation. **(1mk)**

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(b) State two ways in which glomerular filtrate is different from urine. **(2mks)**

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(c) Which gland secretes antidiuretic hormone? **(1mk)**

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(d) What causes diabetes mellitus? **(1mk)**

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19 The table provided shows the concentration of sodium and iodine in sea water and cell sap of a plant.

	Sodium ion concentration	Iodine ion concentration
Sea water	250	35
Cell sap	100	550

(a)(i) Name the process through which the plant cells take up sodium ions. **(1mk)**

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

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(b) If the plant was sprayed with a chemical that inhibits respiration

(i) Which of the two ions uptake will be affected? **(1mk)**

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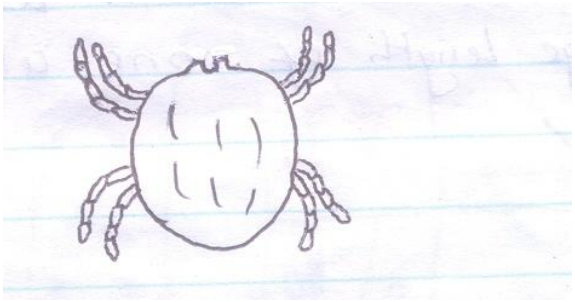
(ii) Give a reason for your answer in (b)(i) above (1mk)

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20 The figure below represents an organism.



(a) Name the phylum and the class to which the organism belongs. **(2mks)**

Phylum ……

Class ……

(b) State two observable features that are used to place the organism in class (a) above. **(2mks)**

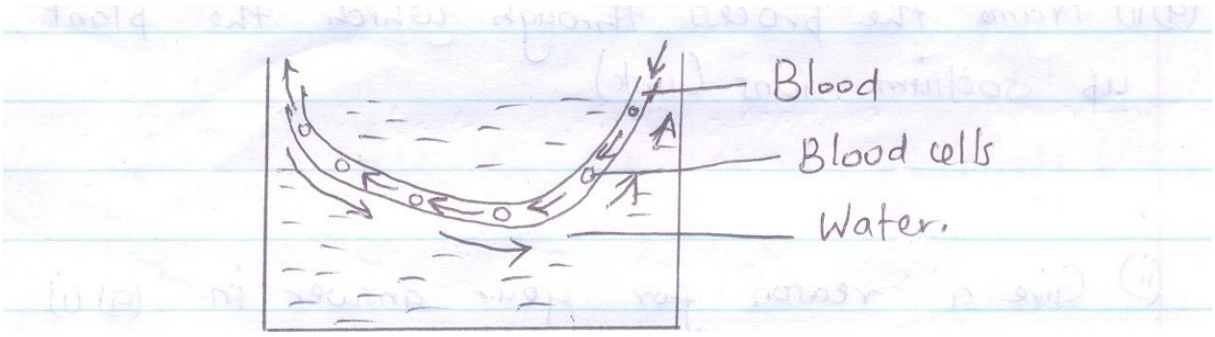
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21 The diagram below shows how gaseous exchange occurs across the gills of fish.



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(a) What is the term used to describe the type of flow displayed above? **(1mk)**

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(b) What is the advantage of this flow system? **(1mk)**

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c) Name an organ in human beings which display this flow system. **(1mk)**

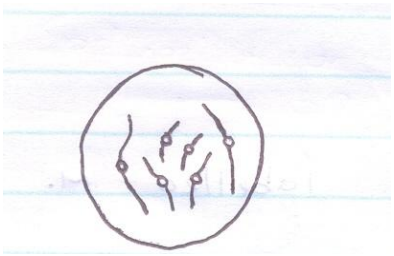
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22 Using a microscope, a student counted 55 cells across a field of view whose diameter was 6000µm.

Calculate the average length of one Cell. Show your working. **(1mk)**

23 The figure below shows the nuclear of a diploid cell during the early stages of cell division



a) How many pairs of chromosomes does it have? **(1mk)**

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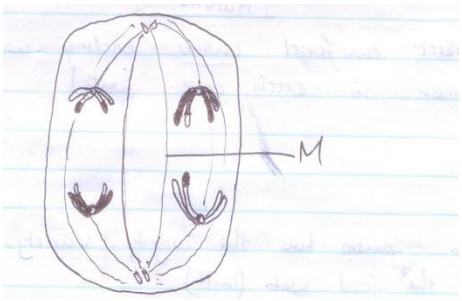
b) Draw a diagram to show how the nucleus of the daughter cell would look like after

(i) Mitosis **(1mk)**

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(ii) Meiosis **(1mk)**

24 The diagram below represents a stage during cell division



(a)(I) Identify the stage of cell division. **(1mk)**

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(ii) Give three reasons for your answer in (a)(i) above.

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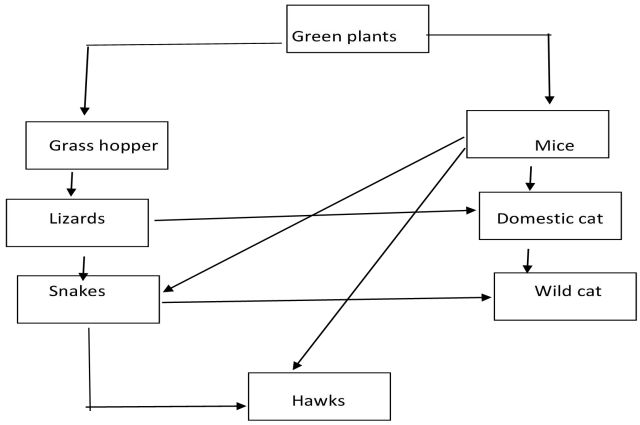
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(b) Name the structures labeled M. **(1mk)**

……

……

25 The following chart shows a feeding relationship in an ecosystem.



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(a) Construct two food chains ending with tertiary consumer in each case. **(2mks)**

(b) Which organism has the largest variety of predator in the food web. **(1mk)**

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(c) Suggest three ways in which the ecosystem would be affected if there was prolonged drought. **(3mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……

SCHOOL: ……..……

ADM NO: …….. SIGN: …….. DATE: ……..

FORM 3 BIOLOGY PAPER 2

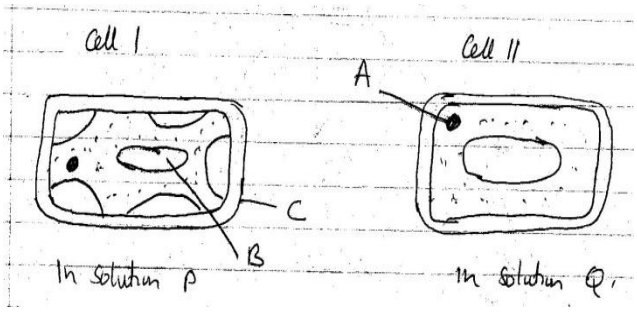
END OF TERM 2

Answer all the questions in SECTION A in the spaces provided.

(a) In section B answer question 6 (Compulsory) in the spaces provided and either question 7 or 8 in the space provided after question 8.

SECTION A (40MKS)

1.The two cells shown below are obtained from two different potato cylinders which were immersed in two different solutions P and Q.



(a) (i) Name the structures labelled A and C **(2mks)**

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(ii) State the function of structure B. **(1mk)**

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(b) Suggest the identity of the solution Q **(1mk)**

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(c) Account for the change in Cell 1 above **(2mks)**

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(d) State two importance of the physiological process being demonstrated above in living organisms. **(2mks)**

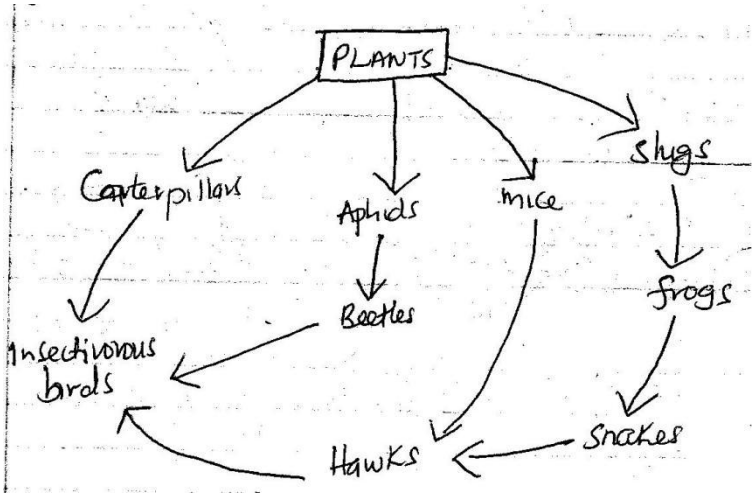
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2.Study the following food web and answer the questions that follow.



(a) (i) Name the organisms that occupy the second trophic level **(2mks)**

……

……

……

……

(ii) What is the other name for the second trophic level **(1mk)**

……

……

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(b) Write down two food chains from the web that

(i) End with hawks as tertiary consumer **(1mk)**

(ii) End with hawks as Quaternary consumer. **(1mk)**

(c) Giving reasons state;

(i) The organism with largest biomass **(1mk)**

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(ii) The organism with least biomass **(1mk)**

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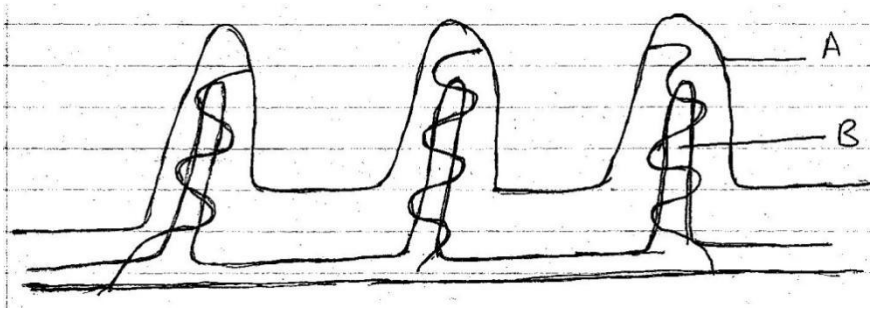
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(d) Name the source of energy in the above ecosystem. **(1mk)**

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……

3.The diagram below represents a longitudinal section through the ileum wall.



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(a) Identify the structure labeled A and B **(2mks)**

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(b) State one function of A and B **(2mks)**

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(c) State two functions of the ileum. **(2mks)**

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(d) Explain the role of the liver in digestion. **(2mks)**

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4.The equation below represents a metabolic process that occurs in a certain organ in the mammalian body.

Ammonia $\xrightarrow[\text{Carbon (IV) Oxide}]{\text{enzymes}}$ Organic compound Q + water

(a) Name the process represented in the equation. **(1mk)**

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……

(b) Name the organ in which the process occurs. **(1mk)**

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……

(c) Why is the process important to the mammal? **(1mk)**

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(d) Identify the organic compound Q. **(1mk)**

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(e) What happens to organic compound Q ? **(1mk)**

(f) A person was found to pass large volume of dilute urine frequently. Name the; **(3mks)**

(i) Disease the person was suffering from.

……

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(ii) Hormone that was deficient.

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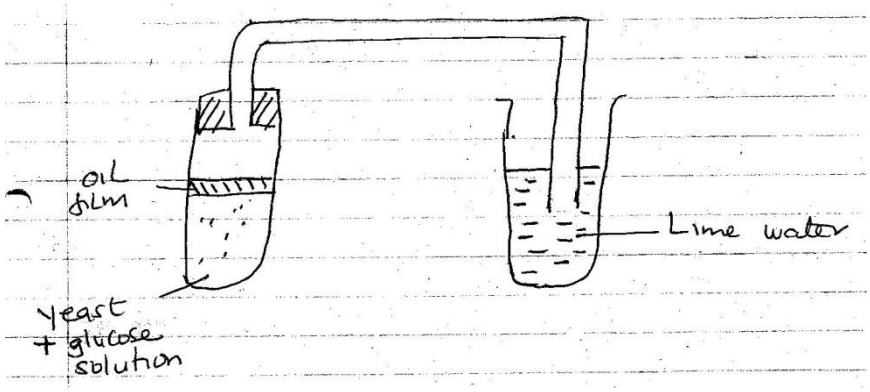
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(iii) The gland that secretes the above hormone.

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5.Some glucose was boiled and cooled in a boiling tube. Some yeast was added and a layer of oil put on top. The set up below was used.



(a) Why was the glucose solution boiled before the experiment. **(1mk)**

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(b) What is the use of the oil film in the experiment ? **(1mk)**

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(c) Name the process being investigated by the above experiment. **(1mk)**

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(d) State what happens to the lime water as the experiment proceeds to the end. **(1mk)**

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(e) Explain what would happen if the temperature of glucose and yeast was raised beyond 45^0C. **(2mks)**

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(f) State two industrial applications of the process being investigated above in the experiment. **(2mks)**

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SECTION B (40MKS)

Question 6 (Compulsory) and either question 7 or 8.

6.In an ecological study, a locust population and that of crows was estimated in a grassland area over a period of one year. The results were tabulated as shown below:-

Months	J	F	M	A	M	J	J	A	S	O	N	D
Number of locusts	90	20	11	25	200	450	652	15	10	35	192	456
Number of crows(birds)	4	2	0	1	8	16	22	2	1	1	5	15
Amount of rainfall	20	0	55	350	520	400	350	10	25	190	256	350

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(a) Draw a graph of population of locusts and crows (birds) against time. **(8mks)**

(PROVIDE A GRAPH PAPER)

(b) (i) State the relationship between rainfall and locust population. **(1mk)**

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(ii) Account for the relationship you have stated in (b) (i) above **(1mk)**

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(c) What happens on the populations of locusts and crows in the months of January to March ?
Give a reason. (**2mks)**

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(d) State one method used to estimate the population of locust. **(1mk)**

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(e) (i) State the trophic level of the; **(2mks)**

Locusts **-……..**

Crows **-……..**

(ii) Construct a simple complete food chain involving these organisms **(2mks).**

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(f) If the locusts were removed from the food chain, what would be its effect ? **(1mk)**

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(g) Define the following terms **(2mks)**

(i)Biomass

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(ii)Ecosystem

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7.Describe how hydrophytes and xerophytes are adapted to deal with environmental problems in the regions where they grow**. (20mks)**

8.Describe how the mammalian skin regulates body temperature. **(20mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

FORM THREE BIOLOGY PAPER 3 (231/3)

Time: 1 hr. 45 Mins

INSTRUCTIONS TO CANDIDATES

- Write your **name** and **admission number** in the spaces provided above
- Answer ***all*** the questions in the spaces provided.
- You are require to spend the first 15 minutes of the 1 ¾ hours allowed for this paper reading the whole paper carefully before commencing your work.

1. You are provided with

- Liquid cooking oil

- B1

- B2

- Irish potato

Label two test tubes X and Y. Into each test tube, put $2cm^3$ of water and 8 drops of liquid cooking oil. To the test tube labeled X add 8 drops of liquid B_1, shake both test tubes and allow the content to stand for 2 minutes

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(a) (i) Record your observations in **(2mks)**

Test tube **X** ……..

Test tube **Y** …….

(ii) Name the process that has taken place in test-tube X **(1mk)**

……

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(iii) State the significance of the process named in a (ii) above in digestion **(1mk)**

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(iv) Name the digestive juice in humans that has the same effect on oil as liquid B_1 **(1mk)**

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(v) Name the region in the digestive system into which the juice is secreted **(1mk)**

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……

(b) Label two test tubes E and F. Place $2cm^3$ of liquid B_2 into each. Add a drop of iodine solution into each test tube.

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

(ii) Suggest the identity of liquid B_2 …… **(1mk)**

(iii) Cut out a cube whose sides are 1cm from the irish potato provided. Crush the cube to obtain a paste and place the paste in the test tube labeled E. Leave the set up for at least **30minutes**.

Record your observation **(2mks)**

Contents of test tubes F after 30 min …….

Contents of test tube E after 30 min ……..

(iv) Account for the results in b (iii) above. **(1mks)**

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(c) (i) Cut out another cube whose sides are 1cm from the Irish potato and crush it. Place the crushed paste into a test tube. Carry out food test with the reagent provided. Record the procedure and results. **(2mks)**

Food being tested	Procedure	Observation	Conclusion

(ii) Account for the results in (c) (i) above. **(3mks)**

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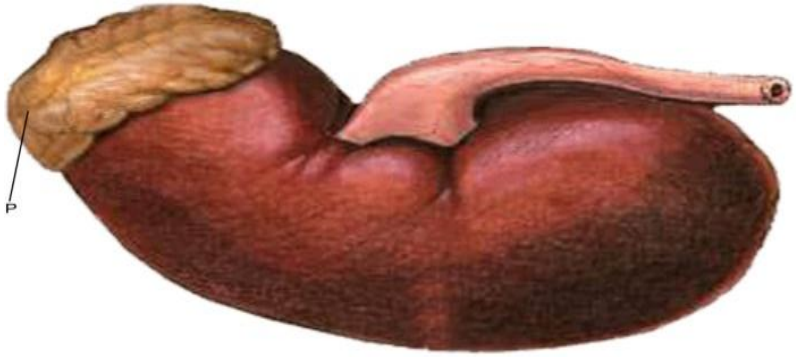
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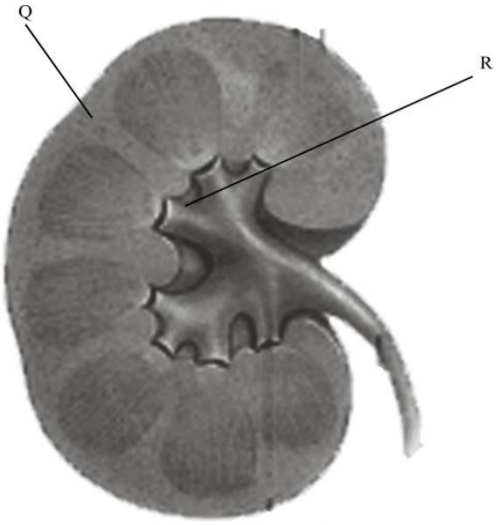
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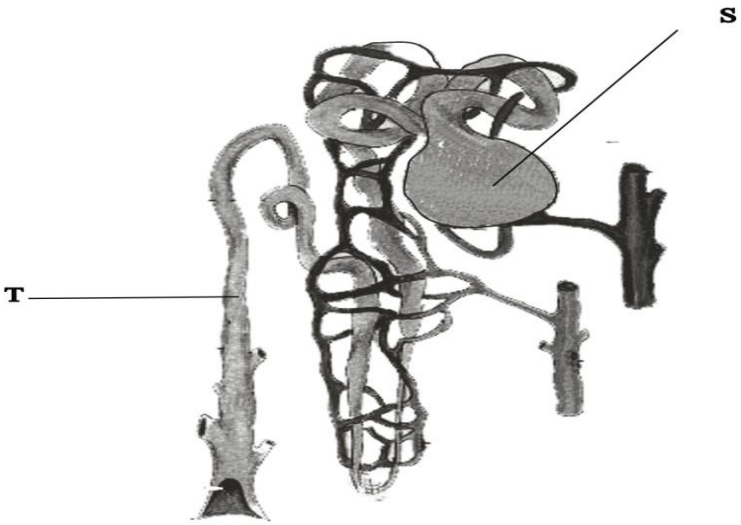
Q2. The **photographs** labelled J, K and L are all related to mammalian kidney.



J-KIDNEY



K-Section of Kidney



L – Nephron

(a) Name the hormone produced by the structure labelled P. **(1mk)**

……

……

(b) Name the parts labelled Q, R and T. **(3mks)**

Q…….

R……..

T……..

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(c) State the process by which wastes are filtered from blood in the structure labelled S. **(1mk)**

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(d) (i) Give <u>two</u> components of blood that that are not filtered at structure S. **(2mks)**

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(ii) Give reason why the components you have named in d (i) above are not filtered. **(2mks)**

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(e) Give two nutrients reabsorbed at the part labelled S. **(2mks)**

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(f) What <u>two</u> adaptations would be expected in the structure L in a desert animal like a camel. **(2mks)**

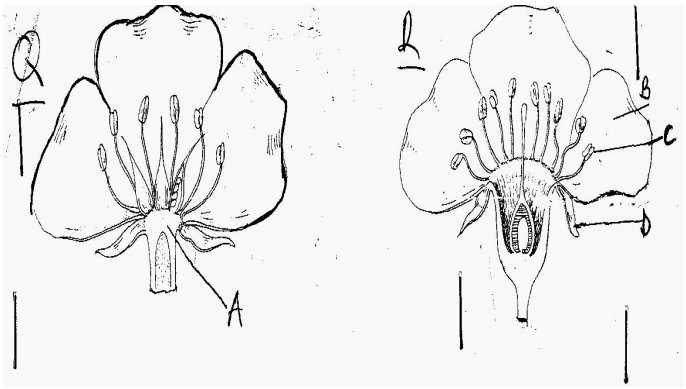
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3. Below are drawings of specimens from plants. Study them and answer the questions that follow



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a) What is the role of the specimens to the plants. **(1mk)**

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b) Differentiate the specimen Q from specimen R. **(2mks)**

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c) Label the parts labelled C and D **(2mks)**

C ……

D ……

d) Explain what happens to the floral structures after fertilization. **(4mks)**

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e) With a reason state the class of plants from which the specimens were obtained. **(2mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

565/1

FORM 3 BUSINESS STUDIES

PAPER 1

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

- *Write **your name** and **your Admission Number** in the spaces provided above.*
- ***Write** the **date** of examination and **class** in the spaces provided above.*
- *Answer **all** the questions in the spaces provided.*
- *All answers should be written in English.*
- *This paper consists of 9 printed pages. 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	1	2	3	4	5	6	7	8	9	10	11	12	13
Score													

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

TOTAL MARKS

1. Outline 4 ways in which commercial attaches may

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promote trade between their country and other countries.

(4mks)

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2. A lucrative manufacturing firm has been constantly releasing toxic wastes into the neighbourhood. Outline four measures you can take to stop the firm from such malpractice. **(4mks)**

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3. Outline four factors that should be considered in the choice of a means for transporting perishable goods **(4mks)**

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4. Outline four circumstances under which face to face communication may be ineffective **(4mks)**

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5. Highlight four benefits that would accrue to a firm located near other existing firms **(4mks)**

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6. KAMBO owned a motor vehicle valued at sh.1,000,000. He comprehensively insured the car at sh.800,000. The motor vehicle was involved in an accident and declared a write off. Calculate the amount KAMBO should get from the insurer **(4mks)**

7. State four reasons why the government should create an enabling environment for investors **(4mks)**

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8. State four importances of intermediaries in the chain of distribution **(4mks)**

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9. Highlight four challenges that a person may encounter when using a cell phone (mobile phone) **(4mks)**

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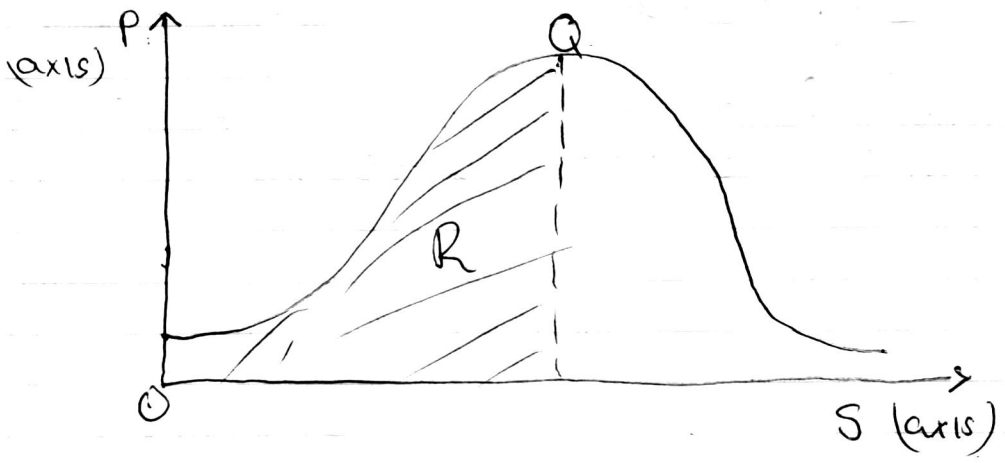
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10. The diagram below represents the relationship between population and income per capita



State what is represented by P and S axes and letters R and Q **(4mks)**

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11. The balances given below relate to Korir Traders for the year ended 31st December 2013.

	Sh.
Capital	?
2 year bank loan	230,020
Creditors	95,200
Fixed assets	480,000
Current assets	145,220

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Prepare a balance sheet as at 31st December 2013 **(5mks)**

12. Identify the types of wholesalers described in the statements given below **(4marks)**

a) A wholesaler who trades in maize grain only **……**

b) A wholesaler who supplies goods to most of the traders in Kerugoya, Mwea and Sagana in Kirinyaga County**……..**

c) A wholesaler who buys tomatoes from farmers in rural areas and sells the same to other wholesalers in urban areas**. ……**

d) A wholesaler who trades in a wide variety of human medicine **……..……**

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13. On 2nd November 2010, Mwaura received an invoice for Ksh.12,000. Terms of payment were trade discount 5% and cash discount 10%, if payment is made within 30 days. Determine the amount paid if payment was made on 28th November 2010. **(4mks)**

14. The following transactions were extracted from the books of Sarah Traders for the month of March 2014.

March 10: Purchased goods on credit worth Kshs.200,000 from Salim Traders.March 25: Sold goods on credit worth Kshs.420,000 to Shah Traders. Record the above transactions in the relevant ledger accounts **(4mks)**

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15. Highlight four circumstances under which the capital of a business may change **(4mks)**

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16. Outline four features of liners in sea transport **(4mks)**

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17. Fatuma operates a matatu business. State four factors in the internal environment that may influence the business **(4mks)**

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18. State 4 features of monopolistic competition **(4mks)**

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19. Apart from selling shares. Outline 4 sources of finance for a public limited company **(4mks)**

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20. There has been a decline in the demand for wooden furniture. State 4 factors that may have caused this trend.

(4mks)

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21. Karanja Ltd had the following ledger account balance as at 31st May 2015.

Details	shs.
Purchases	3,880
Sales	3,350
Returns outwards	150
Returns inwards	160
D. Simola (Debtor)	2,550
P. Mwendo (Creditor)	3,100
Wages	800
Cash	960
Capital	1,750

Required: Prepare Karanja's trial balance as at 31st May 2015 **(5mks)**

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22. State four merits of promoting products through personal selling **(4mks)**

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23. Complete the table below by indicating the relevant account to be debited and credited. **(3mks)**

Statement	**Account to debit**	**Account to credit**
A debtor paid by cheque		
Bought goods on credit		
Draw cash from bank for office use		

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24. Highlight four essentials of a good warehouse **(4mks)**

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25. Outline 3 features of economic resources **(3mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

565/2

BUSINESS STUDIES

FORM THREE

INSTRUCTIONS

1.THIS PAPER CONSISTS OF SIX QUESTIONS
2.ALL QUESTIONS CARRY EQUAL MARKS.
3.ANSWER ANY FIVE QUESTIONS.

1.a. Explain five reasons why you would advise your friend against starting a sole proprietorship form of business. **(10mks)**

b.Explain five measures to be taken to reduce unemployment in the country. **(10mks)**

2.a. Outline five factors that you would consider when establishing a warehouse for imported goods**.(10mks)**

b.Explain five circumstances that may influence a firm to locate its operations near the source of raw materials **(10mks)**

3. a.Despite the development in the transport sector, human porterage is commonly used. Explain five reasons that account for this fact. **(10mks)**

b.Explain five challenges for rapid population growth in a country. **(10mks)**

4. a.Explain five reasons why the government is involved in Business Activities. **(10mks)**

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b.The following balances were extracted from the books of Karimi Traders on 1st January 2011.

	Ksh.
Capital	600,000
Creditors	180,000
Motor van	200,000
Furniture	200,000
Stock	60,000
Debtors	80,000
Cash	240,000

The following transaction took place during the year ended 31st December 2007.

i. Sold furniture worth ksh.60, 000 for which ksh.40, 000 cash was received and the balance was due at the end of the year.

ii. Purchasing goods worth ksh.100, 000 for which cash of ksh.70, 000 was paid and the balance was still outstanding at the end of the year.

iii. Cash ksh.10, 000 was taken from the business by the proprietor to settle the spouse hospital bill.

Required :

Draw Karimi Traders balance sheet as at 31st December 2011 showing the items in their relevant classes. **(10mks)**

5. a. Explain five benefits that may accrue to an organization that adopts an open office plan. **(1o mks)**

b.Amina operates a fleet of public service vehicles (PSV_s).Explain five possible risks she can insure her business against. **(10mks)**

6. a.Discuss five factors that may be considered when choosing a method for promoting a product. **(10mks)**

b.Describe five channels of distribution of exported agricultural products. **(10mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

233/1

CHEMISTRY

PAPER 1 FORM 3

(THEORY) 2 HRS

INSTRUCTIONS TO CANDIDATES

(a) Answer your name and index number in the spaces provided above.

(b) Answer all the questions in the spaces provided in the question paper.

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

(d) All working must be clearly shown where necessary.

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 30		

1.Elements burn in oxygen to form basic or acidic oxides. Name two elements which form acidic oxides. **(2mks)**

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2. Element T has atomic number 9 while V has atomic number 11.

(a) Write down the electronic configurations of elements T and V.

T …….. ($^1/_2$ mk)

V ……..... ($^1/_2$ mk)

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(b) State the type of bond formed when T and V combine. **(1mk)**

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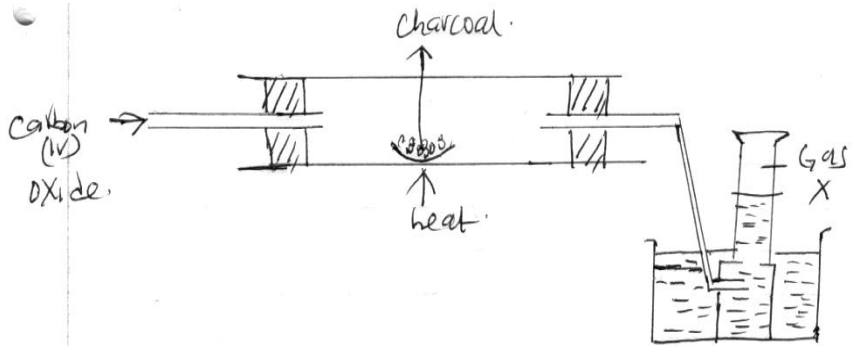
3.P, Q, R and S are metals. P reacts with steam whereas Q is not affected by either cold water or steam. R reacts violently with cold water while S bursts into flames as soon as it comes into contact with cold water. Arrange the metals in order of decreasing reactivity. **(2mks)**

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……

4.When 27.8g of hydrated aluminium oxide ($Al_2O_3.XH_2O$) was heated to a constant mass, 20.6g of aluminium oxide was obtained. Determine the value of x (H=1, O=16, Al=27). **(3mks)**

5.The following diagram shows carbon(iv)oxide passed over heated charcoal to produce gas X.



a) Identify gas

……

……

b) Write an equation for the reaction which produces gas X. **(1 mk)**

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c) The above experiment should be carried out in a fume chamber. Why? **(1mk)**

……

……

……

6.When a piece of sodium metal was put in a beaker of water, it darted on the surface before dissolving.

a) Write an equation for the reaction between sodium metal and water. **(1mk)**

……

……

b) What is the effect of the solution formed in (a) above on red and blue litmus papers? Explain. **(2 mks)**

……

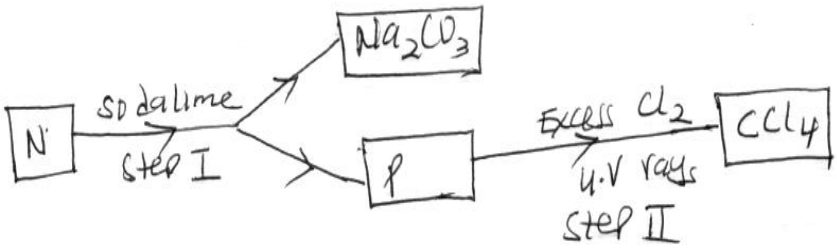
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7.22.2 cm^3 of sodium hydroxide solution containing 4.0g per litre of sodium hydroxide were required for complete neutralization of 0.1g of a dibasic acid. Calculate the relative formula mass of the dibasic acid. (Na=23.0, O=16.0, H=1.0). **(3mks)**

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



a) Identify N and P. **(2 mks)**

……

……

……

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b) What name is given to the reaction in step II? **(1 mk)**

……

……

9. Molten Lead(ii)Bromide was electrolysed using graphite electrodes. Write half equations for the reaction occurring at each electrode. (2 mks)

Cathode:

……

……

Anode:

……

……

10. Gas P diffuses through a porous material at a rate of $12cm^3\ s^{-1}$, whereas gas Q diffuses through the same material at a rate of $7.2cm^3\ s^{-1}$. Given that the molar mass of P is 16, calculate the molar mass of Q. **(3 mks)**

11. Element R has an atomic number of 6 and s has an atomic number of 9. Using dot (.) and cross(x) diagram show how R and S combine to form a compound. **(2mks)**

12. The table below shows the Ph values of solutions I, II, III, and IV.

Solution	I	II	III	IV
PH	2	7	11	14

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a) Which solution is likely to be sodium chloride solution. **(1mk)**

……

……

b) A few drops of phenolphthalein indicator were added to solution (iv).

State and explain the observations made. **(2mks)**

……

……

……

……

13. The molecular formula of a hydrocarbon is C_6H_{14}. The hydrocarbon can be converted into two other hydrocarbons as shown by the equation below.

$C_6H_{14} \longrightarrow C_2H_6 + X$

(i) Name and draw the possible structural formula of X. **(2mks)**

……

……

(ii) State the observation that would be made if a few drops of acidified potassium manganate(vii) were added to a sample of X.

(1mk)

……

……

14. When magnesium is heated in air, it forms a solid Q and solid P. when solid Q is reacted with water it produces a gas W that turns moist red litmus paper to blue. Identify;

a) Solid Q …….. **(1mk)**

b) Solid P …….. **(1mk)**

c) Write an equation for the formation of gas W. **(1mk)**

……

……

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15. The empirical formula of hydrocarbon is C2H3. The hydrocarbon has a relative molecular mass of 54. **(H=1.0, C=12.0).**

a) Determine the molecular formula of the hydrocarbon. **(1mk)**

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

c) To which homologous series does the hydrocarbon drawn in (b) above belong? **(1mk)**

……

……

16. Give the name of each of the processes described below which takes place when salts are exposed to the air for sometime.

(i) Anhydrous copper(ii)sulphate becomes wet. **(1mk)**

……

……

(ii) Magnesium chloride forms an aqueous solution. **(1mk)**

……

……

(iii) Fresh crystals of sodium carbonate become covered with white powder. **(1mk)**

……

……

17. A gas occupies $4dm^3$ at a pressure of 152 mmHg. Calculate the gas pressure when the volume is reduced to $1.5dm^3$. **(2mks)**

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18. When a white powder P was heated it decreased in mass and produced solid X which was reddish brown when hot and yellow when cold. A gas R which formed a white precipitate with calcium hydroxide was also evolved.

a) Identify substances P and X.

P …….. **(1mk)**

X …….. **(1mk)**

b) Write an equation for the formation of the white precipitate. **(1mk)**

……

……

19. Starting with lead(ii)carbonate explain how you would prepare a pure sample of lead(ii)chloride. **(3mks)**

……

……

……

……

……

20. Study the information in the table below and answer the questions that follow.

Element	Atomic radius(nm)	Ionic radius (nm)
W	0.114	0.195
X	0.072	0.136
Y	0.133	0.216
Z	0.099	0.181

a) Are the above elements metals or non metals? Explain. **(2mks)**

……

……

……

……

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b) Select the most reactive element in the table above. Explain. **(1mk)**

……

……

……

21. (a) Explain why the metals magnesium and aluminium are good conductors of electricity. **(1 mk)**

……

……

(b) Other than cost, give two reasons why aluminium is used for making electric cables while magnesium is not. **(2mks)**

……

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……

22. Determine the volume of hydrogen gas formed when excess zinc metal is added to 1100cm^3 of 1m hydrochloric acid. (1 mole of gas occupies 24.0 litres at room temperature). **(2mks)**

23. Metal P is a group II element in the periodic table and it lies below Q in the same group.

a) Explain how the reactivity of metal P and Q with bromine compare. **(1mk)**

……

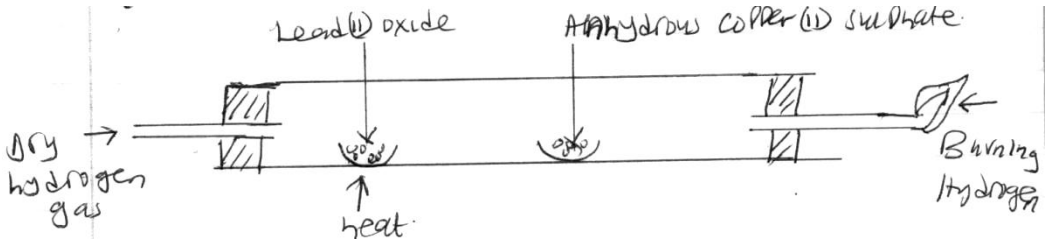
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b) Given that the atomic number of Q is 12, determine the atomic number of P. show how you arrive at your answer. **(2 mks)**

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



a) What is observed on the anhydrous copper(ii)sulphate? **(1mk)**

……

……

……

b) Write an equation for the reaction between lead(ii)oxide and hydrogen. **(1mk)**

……

……

c) State another observation apart from that one in (a) made in the combustion tube. **(1mk)**

……

……

……

25. Iron roofs usually turn brown after some time as a result of formation of rust on their surfaces.

a.Explain whether rusting is a physical or a chemical change. **(2mks)**

……

……

……

……

b. State one way of preventing rusting. **(1mk)**

……

……

26. A student reacted lead(ii)carbonate with sulphuric(vi)acid in order to prepare lead(ii)sulphate salt.

a) Explain why he was unable to prepare the lead(ii)sulphate salt using the above reagents. **(2mks)**

……

……

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b) Give another acid he would use in place of sulphuric (vi) acid. **(1mk)**

……

……

27. In a reaction to prepare ammonia gas 15 litres of hydrogen gas was reacted with 10 litres of nitrogen gas.

a) Determine the volume of the gas that was not completely used in the reaction. **(2mks)**

b) Calculate the volume of ammonia gas produced in the reaction. **(1mk)**

28. When sodium nitrate is heated, it produces sodium nitrite and gas C.

a) Identify gas C. **(1mk)**

……

……

b) Name the type of reaction undergone by the sodium nitrate. **(1mk)**

……

……

29. When an electric current was passed through two molten substances E and F in separate electrolytic cells. The observations recorded below were made.

Substance	Observation	Type of structure
E	Conducts electric current and a gas is formed at one of the electrodes.	
F	Conducts an electric current and is not decomposed.	

Complete the table above. **(2mks)**

30. State two use of nitrogen gas. **(2mks)**

……

……

……

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: …….. DATE: ……...

233/2

FORM 3 CHEMISTRY PAPER 2 THEORY

TIME 2HRS

TERM 2

Instructions to candidates.

1.Write your name and index number in spaces provided in the question paper.

2.Answer all the questions in the spaces provided in question paper.

3.Mathematical tables and silent calculators may be used.

4.All working must be clearly shown where necessary.

QUESTIONS	STUDENT SCORE
1	
2	
3	
4	
5	
6	
7	
8	

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1.a) Study the table below which shows properties of elements across period three and answer the question that follow.

Element	A	B	C	D	E	F	G	H
Atomic radius (nm)	0.156	0.136	0.125	0.118	0.110	0.104	0.099	-
Ionic r Radius (nm)	0.095	0.065	0.050	-	-	0.184	0.181	-
Melting points (^{0}C)	97.8	650	660	1410	44.2	119	-101	-186

i)Explain why the atomic radius of G is smaller than its ionic radius. **(1mk)**

……

……

……

……

ii) Explain why the melting point of D is higher than the other elements **(2mks)**

……

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……

iii Give the formula of the chlorides of element B **(1mk)**

……

……

b) The ions of V^{3+} and U^{2-} have identical electronic configuration 2.8.

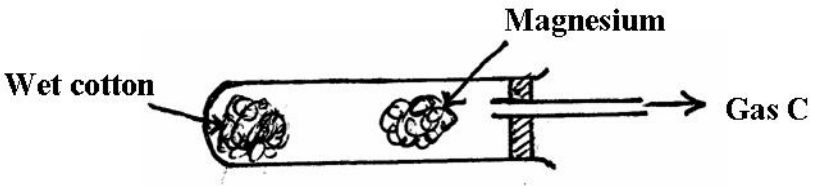
Write down the electron arrangement of the elements U and V **(2mks)**

U ……

V ……

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c) The diagram below shows how magnesium reacts with steam



i) Gas C would not be produced as is in the set-up but when certain condition is introduced gas C is produced. Identify the condition which was omitted in the set-up **(1mk)**

……

ii) Describe how gas C is produced after the mistake was corrected in the above set-up **(2mk)**

……

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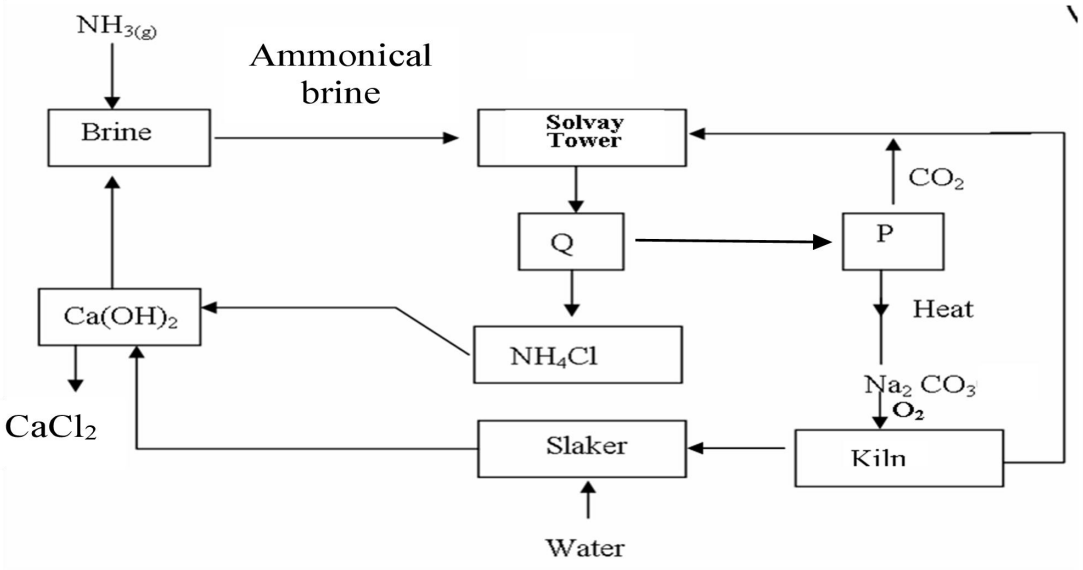
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iii) Why is it not advisable to use potassium in place of magnesium? **(1mk)**

……

……

2. The flow chart below shows the manufacture of sodium carbonate. Study it carefully and answer the questions that follow.



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a)i) What is ammonical brine? **(1mk)**

……

……

……

ii) Ammonical brine reacts with carbon (IV) oxide to form a mixture of two salts which produce Q. Write an equation to show formation of Q **(1mk)**

……

……

Iii Name two processes that are used to separate Q into NH_4Cl and P **(2mks)**

……

……

……

……

b) Give two uses of sodium carbonate produced in the process **(2mks)**

……

……

……

……

c) i) Name the substance that reacts with water that comes into the slaker **(1mk)**

……

ii) What happens at the kiln? **(1mk)**

……

……

……

d) Write an equation for the reaction that occurs when P is heated to form solid

$Na_2 CO_3$ **(1mk)**

……

……

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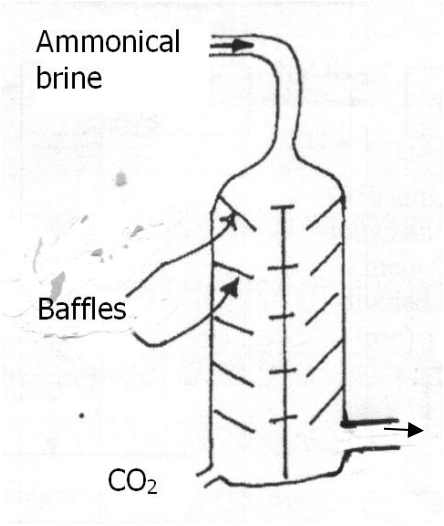
e) Name two substances that are recycled in the process. **(1mk)**

……

……

……

f) Solvay tower is as shown below. Study the diagram and answer the question below



Give two reasons why the baffles are used in the solvay **(2mks)**

……

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……

……

g) A factory produces 63.6 tonnes of anhydrous Na_2CO_3 on a certain day by this process.

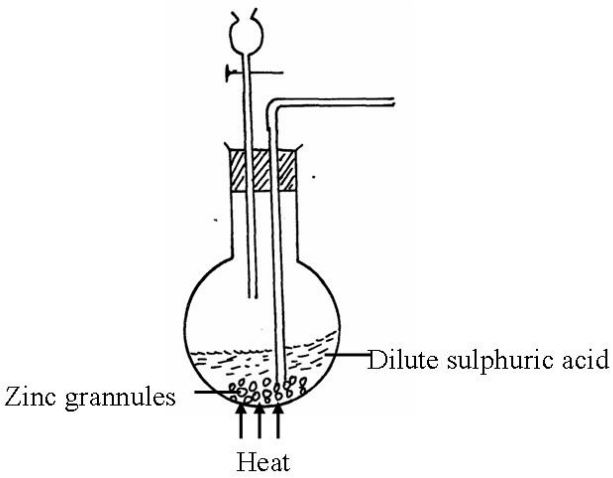
Calculate the number of tonnes of sodium chloride used upon on this particular Day.

Assume the plant is working at 100% efficiency.

(C = 12, H = 1, Cl = 35.5, Ca = 40, Na = 23) (3mks)

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3. A student set-up the arrangement below to prepare and collect dry hydrogen gas



(a) Identify two errors from the section of the arrangement shown above **(2mks)**

I: ……

II:……

(b) Complete the diagram to show how dry hydrogen gas can be collected. **(2mks)**

(c) (i) Explain the effect of hydrogen gas on a wet red litmus paper **(1mk)**

……

……

……

……

(ii) Write a balanced chemical equation for the reaction that takes place when hydrogen gas is burnt in air. **(1mk)**

……

……

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(d) Determine the relative atomic mass of zinc, given that when 6.54g of zinc was used, 2.4litres of hydrogen gas was produced. (molar gas volume = 24 litres) **(3mks)**

e) State any two non-industrial uses of hydrogen gas **(1mk)**

……

……

……

4 a) Name the following compounds(1mk)

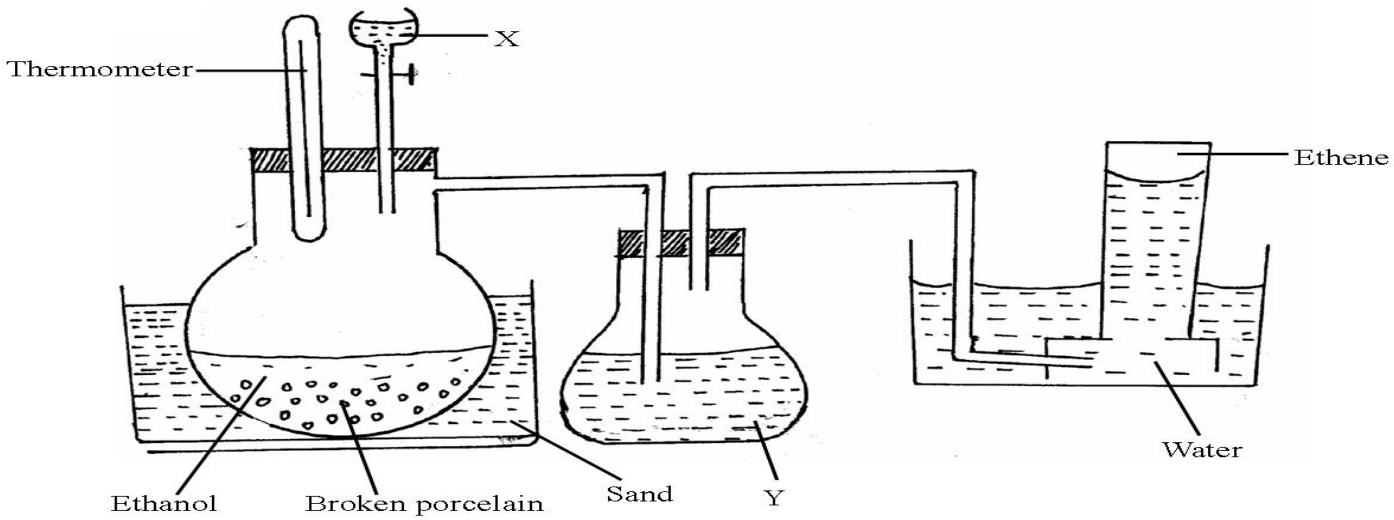
(i)
$$\begin{array}{l} CH_2 - CH - CH_3 \\ \quad | \qquad\quad | \\ CH_3 \quad Br \end{array}$$

……

(ii) H_2SO_4

……

b) The diagram below is for the preparation of ethene gas in the school laboratory.



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

X_____

Y_____

(ii) What is the use of substance Y?

……

……

(iii) State one condition missing in the set up **(1mk)**

……

……

……

(iv) Explain why ethene can't be collected by either upward or downward delivery. **(1mk)**

……

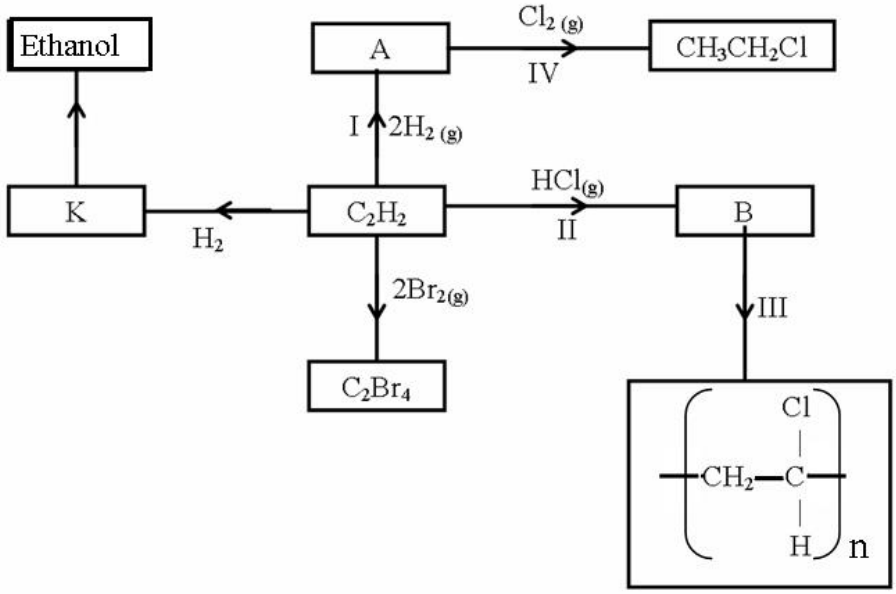
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(v) Write down an equation for the production of ethene in the above set up **(1mk)**

……

……

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



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(i) Identify the catalyst used in step I **(1mk)**

……

……

(ii) Name the compounds A and B **(1mk)**

A_____

B_____

(iii) Give one disadvantage of compound formed in step III **(1mk)**

……

……

(iv) Name the reactions taking place at steps: **(1mk)**

III_____

IV_____

(v) Describe how substance K is converted to ethanol **(2mks)**

……

……

……

……

d) Under certain conditions, heptane can be converted to two products. The formula of one of the products is C_4H_{10}. Write down the structural formula of the other products. **(1mk)**

5. (a) Carbon has two allotropes. **What** is meant by the term allotropy? **(1mk)**

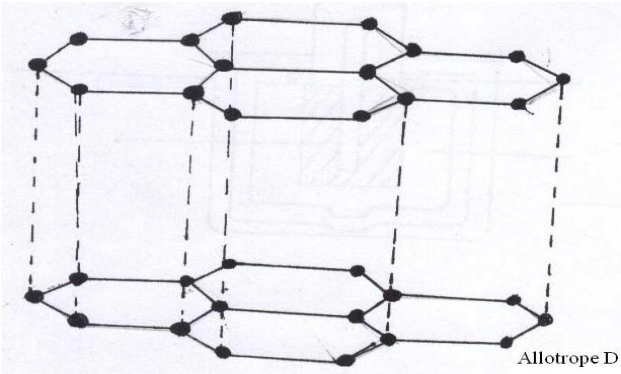
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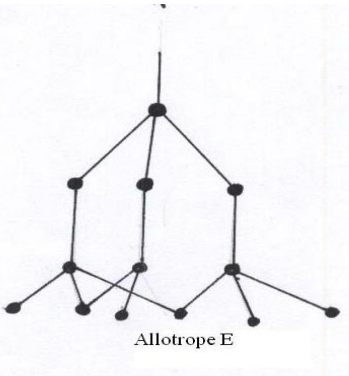
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(b) The following diagrams show the structures of two allotropes of carbon. Study them and answer the questions that follow.


Allotrope D


Allotrope E

(i) **Name** the allotrope **(2mks)**

D ……

E ……

(ii) Give one use of D **(1mk)**

……

……

……

(iii) Which allotrope does not conduct electricity. **Explain** **(2mks)**

……

……

……

……

(c) **State two** properties of Carbon (IV) Oxide that make it suitable for use in fire extinguishers**.** **(2mks)**

……

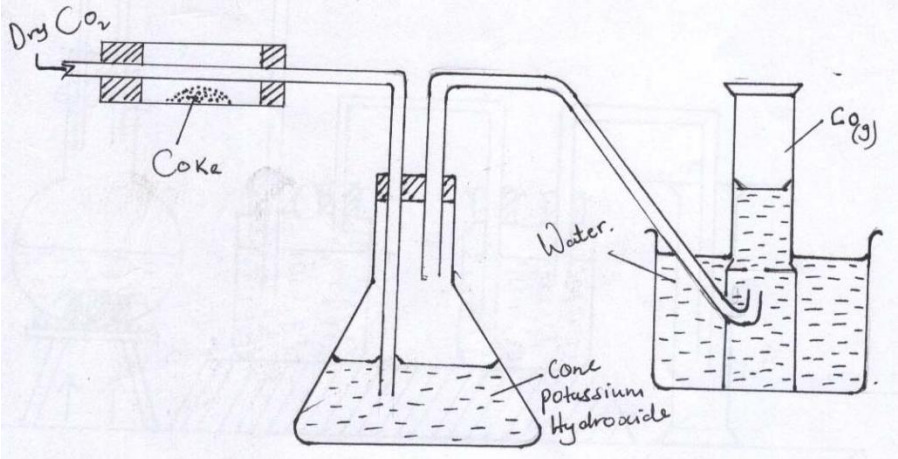
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(d) In an experiment, Carbon (IV) Oxide gas was passed over heated coke and the gas produced collected as shown in the diagram below.



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

……

……

(ii) **Name** another substance that can be used instead of Potassium Hydroxide. **(1mk)**

……

……

(iii) **Describe** a simple chemical test that can be used to distinguish Carbon (II) oxide**.** **(2mks)**

……

……

……

……

(iv) **Give one** use of carbon(II) Oxide **(1mk)**

……

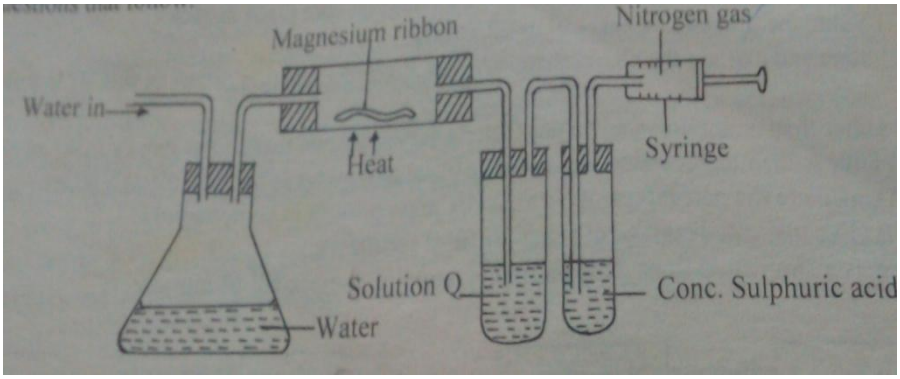
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6. The set up below was used to obtain dry nitrogen gas from air .study it and answer the questions that follows.



i)Name the method used above. **(1mk)**

……..

ii)Identify solution q. **(1mk)**

……

……

iii)State the observation made in the combustion tube. **(1mk)**

……

……

……

……

iv)What is the function of concentrated sulphuric acid in the set up above. **(1mk)**

……

……

……

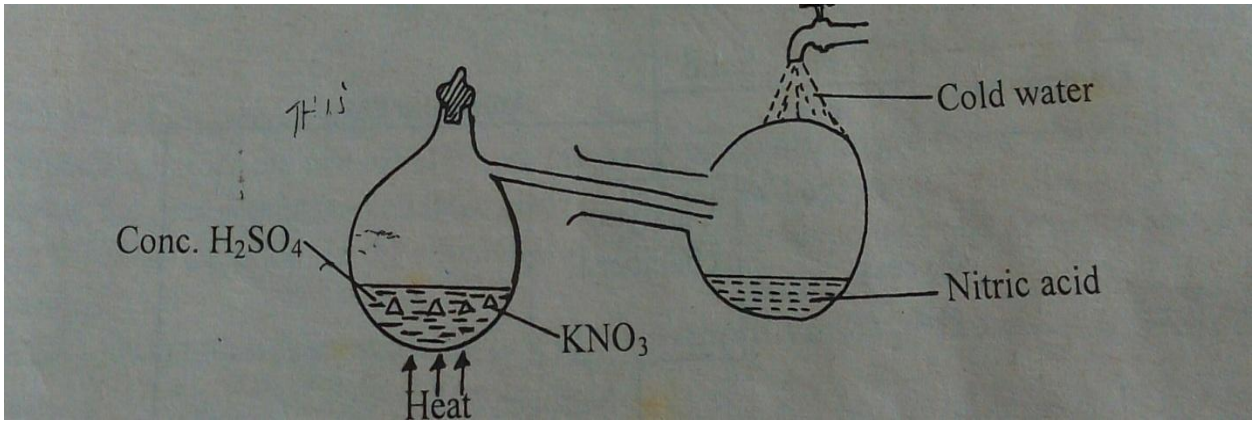
v)Name 1 impurity in the nitrogen gas collected by this method. **(1mk)**

……

……

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b)the set up below was used to prepare Nitric(v)acid in the laboratory using concentrated sulphuric acid on potassium nitrate crystals.study it and answer the questions that follows.



i)Explain why sodium nitrate is not appropriate option in place of potassium nitrate**.** **(1mk)**

……

……

ii)A reddish brown gas was observed in the retort.explain. **(1mk)**

……

……

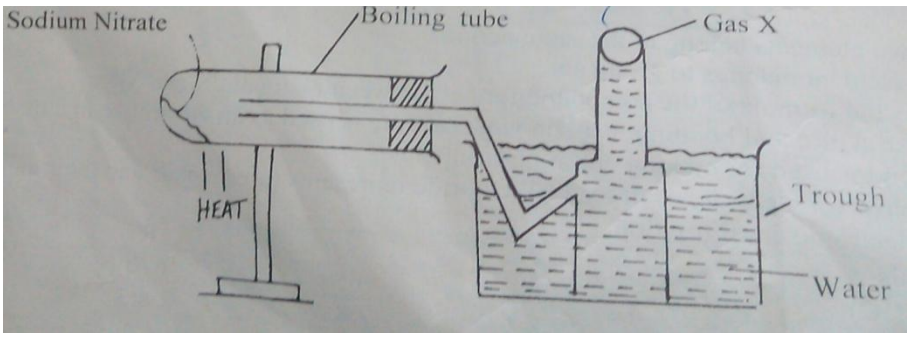
c)60-50 % Nitric(V) acid is produced from the absorption chamber in the industrial manufacture of the nitric acid.Describe how the percentage of the acid can be increased. **(2mks)**

……

……

……

7a. The diagram below represents a set up used by a student to investigate the effect of heat on sodium nitrate.use it to answer the questions that follow.



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a) Write the chemical equation of the reaction in the boiling tube **(2mks)**

……

……

b) state the property of the gas that makes it to be collected by the method shown. **(1mk)**

……

……

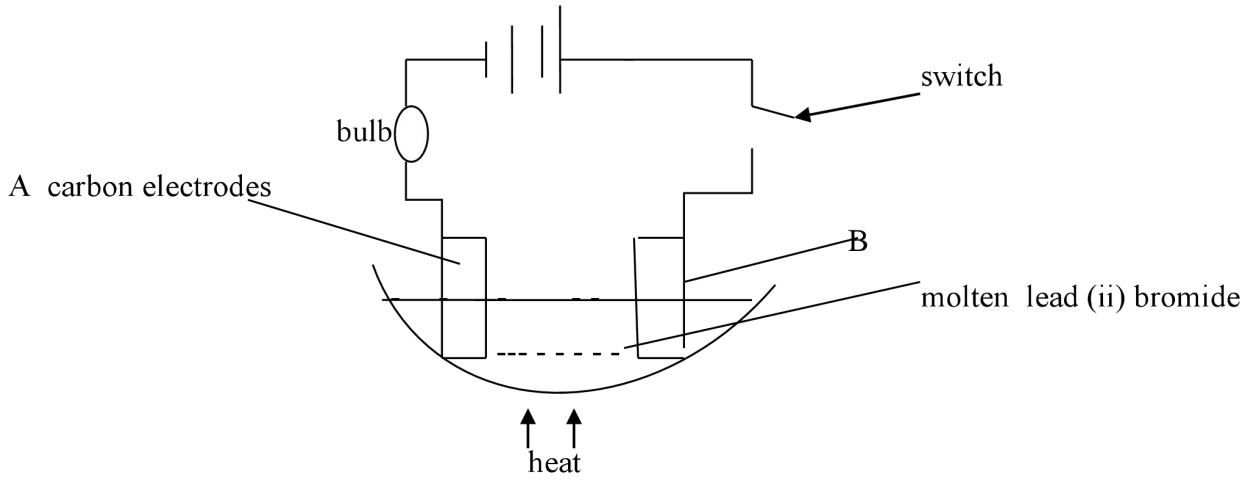
c)predict the effect of water in the trough on the litmus paper after the experiment **(2mks)**

……

……

……

B)study the set up below and answer the questions that follows .



I) State and explain the observations that would be made when the circuit is completed.(3mks)

……

……

……

……

ii)Name the electrodes A and B

A ……

B ……

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8. 8.4g of sodium hydrogen carbonate are completely decomposed by heating.calculate the mass of the resulting solid and the volume in litres of the gas produced at s.t.p.(molar gas volume 22.4litres)

a) (i) write a balanced chemical equation **(2mks)**

……

……

ii) calculate the mass of solid formed **(2mks)**

iii) calculate the volume of the gas produced in litres at s.t.p **(2mks)**

b)During an experiment on the reduction of an oxide of copper the following data was obtained.

Mass of empty boat……25.0g

Mass of empty boat + oxide of copper……..29.0g

Mass of boat+copper(after reaction)……28.2g

(cu=64.0 0=16)

Find the emphirical formula of copper oxide**.** **(4mks)**

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(c) A volume of $375cm^3$ of a gas has a pressure of 20 atmospheres.what will be its volume if pressure is reduced to 15 atmospheres? **(3mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

FORM THREE

CHEMISTRY - 233/3

PAPER 3

PRACTICAL

TERM 2

TIME: 2¼ HOURS

INSTRUCTIONS

(a) Write your name and admission number.

(b) Answer all the questions in the spaces provided

(c) Spend the first 15 minutes of the 2¼ hours to read the question paper and ensure you have all the chemicals and apparatus that you may need.

(d) All working must be clearly shown where necessary.

(e) Mathematical tables and silent calculators may be used.

(f) Answer all the questions in English.

For Examiners use only.

Questions	Maximum score	Candidates score
1	20	
2	20	
Total		

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Q1 You are provided with

- Metal carbonate M_2CO_3 solid Q which weighs exactly 5.0g
- 2M hydrochloric acid solution P
- Sodium hydroxide solution R made by dissolving 40g of the solid in a litre of solution.

You are required to determine

- The relative formula mass (RFM) of M_2CO_3 and hence the relative atomic mass (RAM) of M.

Procedure

- Measure accurately using a measuring cylinder 100cm^3 of solution P into a clean 250cm^3 conical flask.
- Add all the 5.0g of solid Q,shake well and wait for effervescence to stop.
- Put the solution into a 250ml clean beaker.
- Label the resulting solution S.
- Pipette 25cm^3 of solution R into a clean conical flask and add 2-3 drops of phenolphthalein indicator
- Fill the burette with solution S and titrate against solution R.
- Record the results in the table below
- Repeat the titration two more times and record in the table. **(4mks)**

	1	11	111
Final burette reading			
Initial burette reading			
Volume of S used(cm^3)			

(a)Calculate the average volume of solution S used **(1mk)**

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(b) Calculate

(i) Moles of sodium hydroxide solution R used **(2mks)**

ii) Moles of hydrochloric acid solution S in the average volume used **(2mks)**

(iii) Moles of HCl solution S in 100cm the of solution.

(2mks)

(iv) moles of hydrochloric acid solution P in the $100cm^2$ of the original solution **(2mks)**

(v) Moles of HCl solution P that reacted with solid Q **(2mks)**

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(vi) Moles of M_2CO_3 solid Q that reacted **(2mks)**

(vii) The RFM of M_2CO_3 **(2mks)**

(viii) The RAM of metal M **(1mk)**

(Na=23 O=16, H=1)

Q2 Carry out the tests on the substances given and record your observations and inferences in the spaces provided.

(a)(i) Put half of solid A in a boiling tube, add about $3cm^3$ of distilled water shake and retain the solution

Observation	Inferences
(½mk)	**(½mk)**

(ii) To the solution above, add a few drops of ammonia solution then add in excess

Observation	Inferences
(1mk)	**(1mk)**

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(III) Scoop the rest of solid A in a clean metallic spatula and burn on a non-luminous flame.

Observation	**Inferences**
(½mk)	**(½mk)**

(b)(i) Put ½ of solid B in a test tube and add about $1cm^3$ of distilled water

Observation	Inferences
(½mk)	**(½mk)**

(ii) Put the remaining solid in a test tube and add about $1cm^3$ of dilute hydrochloric acid.

Observation	**Inferences**
(½mk)	**(½mk)**

(c) (i) Put ½ of solid C in a test tube,heat gently then strongly observing the colour changes in the solid when heating and after cooling. Test any gas produced with wet litmus papers and a glowing splint.

Observation	**Inferences**
(3mk)	**(1½mk)**

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(ii) Put the remaining solid C in a test tube and add about $2cm^3$ of distilled water,shake well. Add ammonia solution drop wise then in excess

Observation	Inferences
(1mk)	**(1mk)**

(d) Put solid D in a test tube and add $2cm^3$ of distilled water. Shake well then add ammonia solution drop wise then in excess.

Observation	Inferences
(1mk)	**(1mk)**

(e) Repeat procedure in (d) above with solid E.

Observation	Inferences
(1mk)	**(1mk)**

(f) Divide solution F into 3 portions.

(i) Test the PH of the first portion with universal indicator.

Observation	Inferences
(½mk)	**(½mk)**

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(ii) in the second portion drop a piece of magnesium ribbon and test for any gas produced with a burning splint.

Observation	Inferences
(1mk)	**(1½mk)**

(III) To the third portion add a ¼ spatula of sodium hydrogen carbonate.

Observation	Inferences
(½mk)	**(½mk)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

451/1

COMPUTER STUDIES

(THEORY)

Form 3 - Paper 1

2 ½ Hours

INSTRUCTIONS TO CANDIDATES

- Answer all questions in section **A**.
- Answer question 15 (Compulsory) and any other **THREE** questions in section **B.**
- All answers should to be written in the spaces provided in the question paper

For Official use only.

Section	Question	Max. Score	Candidates Score
A	1 – 14	40	
B	15	15	
	16	15	
	17	15	
	18	15	
	19	15	
Total Score			

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SECTION A (40 MARKS)

Answer all the questions in this section

1. a) Explain the role of the following

i) Computer programmer. **(4mks)**

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ii) Software engineer **(1mk)**

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b) i) What is electronic point of sale terminal? **(1mk)**

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ii) Explain two advantages of using this system. **(2mks)**

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iii) Give an application area of this system. **(1mk)**

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2. Explain the purposes of the following files.

a) Back up **(1mk)**

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b) Reference **(1mk)**

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3. a) Perform the following binary arithmetic giving the answer in decimal notation. **(2mks)**

11101.011 + 111.111

b) State two application areas of virtual reality. **(2mks)**

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4. Describe the following human computer interfaces **(3mks)**

a) Graphical User Interface

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b) Command line Interface

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c) Menu Driven Interface

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5. a) State **three** uses of forms in a database management software (DBMS) **(1½mks)**

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b) Explain the terms below as used with databases.

(i) Referential Integrity **(1mk)**

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(ii) Indexes **(1mk)**

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6. State the **three** functional parts that make up the CPU. **(1½ mks)**

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7. You are provided with USB, Parallel and Serial cables. Which of the cables provided can be used to:

a) Support variety of peripheral devices. **(1mk)**

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b) Transmit data in short distance. **(1mk)**

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c) Transmit data fast in long distance. **(1mk)**

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8. The formula, =K20 + P$18 was typed in cell L21 and then copied to cell M24 of spreadsheet. Write a formula as it appears in cell M24. **(2mks)**

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9. Distinguish between logical and physical files as used in computer. **(2mks)**

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10. Tea processing zone wants to acquire new software,

a) State **three** items that should accompany the software **(1½ mks)**

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b) State **three** purpose of word processing package. **(1½mks)**

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11. Give **two** differences of high and low level languages **(2mks)**

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12. Define terms below

a) Nibble **(1mk)**

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b) Bit **(1mk)**

……

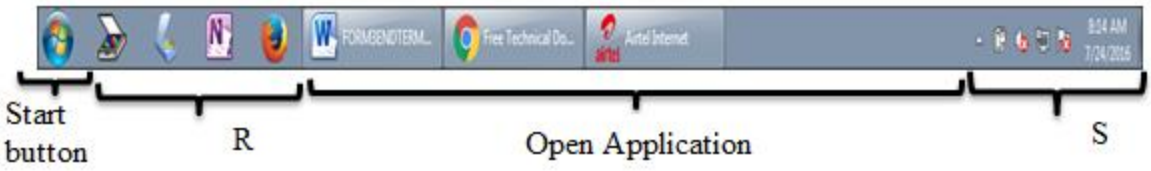
……

c) Word **(1mk)**

……

……

13. The diagram below represents a task bar. Use it to answer the questions below.



a) Name the part labeled

(i) R …… **(½ mk)**

(ii) S …… **(½mk)**

b) Explain the difference between R and S **(1mk)**

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14. a) Name any **two** examples of electronic data processing modes **(1mk)**

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b) Explain safety precaution in computer safeguarding

(i) Hardware **(1mk)**

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(ii) Loss of computer programs **(1mk)**

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SECTION B: 60MARKS

Answer question 15 and any other three questions from this section.

15. a) Define the terms below

i) Algorithm **(1mk)**

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ii) Pseudo code **(1mk)**

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iii) Flowchart **(1mk)**

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b) Draw a flowchart to compute the result of the following formula **(5mks)**

$K = \frac{1}{(M+1)^2}$

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c) Write a pseudo code for a flowchart in b(above) **(5mks)**

d) Describe the difference between the **While** and **Repeat..Until** loops **(2mks)**

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16. You are provided with the following entries in the spreadsheet.

	A	B	C	D	E	F	G
		Months					
1	Items	Jan	Feb	Mar	April		
2	Shoes	500	500	500	500		
3	Pencils	400	300	600	700		
4	Books	100	200	150	350		
5	Ruler	900	760	350	102		
6	Rubber	60	80	200	450		

a) State the cell data type represented by

i) Cell A4 **(1mk)**

……

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ii) Cell C 4 **(1mk)**

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iii)Explain the difference between cell A4 and C4 **(1mk)**

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b) Provide a formula for cell E5 that can be used to give 10% increase of cell E5 **(2mks)**

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c) Using **COUNTIF function,** write an expression to determine the number of items greater than 300 in the month of January **(2mks)**

d) Explain two reasons why

i) Hypertext markup language is not a true programming language. **(2mks)**

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ii) State three examples of web scripting language. **(3mks)**

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e) Differentiate between **source program** and **object code** as used in programming. **(1mk)**

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(f) Explain the concept of modular programming and give **one** advantage associated with it. **(2mks)**

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17.a)i) Explain **two** advantages of acquiring micro-computers in schools **(2mks)**

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ii) Describe any three types of computational errors. **(3mks)**

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iii) Explain the term data integrity. **(2mks)**

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b) Distinguish between:

i) Data encryption and passwords. **(1mk)**

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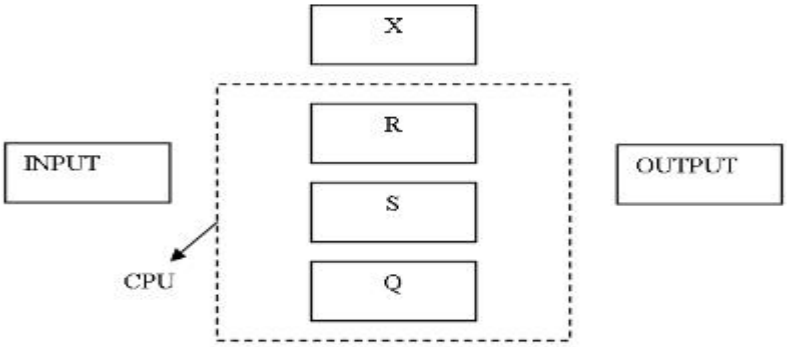
ii) Dry run and walk through **(1mk)**

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c) The diagram below represents essential features of a computer system. Study the diagram and answer the question the follows:



i) Name the components

X ……

R ……

S ……

Q …… **(4mks)**

ii) In the diagram above indicate the direction of data flow using arrows. **(2mks)**

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18.a) i) What is multimedia? **(1mk)**

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ii) State two examples of multimedia system. **(2mks)**

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b) Firestone Kenya purchased hardware components from World Computer services, Firestone Kenya later demanded a document of warranty.

i) What is a warranty? **(1mk)**

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ii) Describe three important information that may entail in the warranty. **(6mks)**

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c) Give three examples of special purpose memories found in the central processing unit. **(3mks)**

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d) Explain difference between read and write with reference to computer memory. **(2mks)**

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19. a) Explain how the operating system perform the following:

i) Job sequencing **(2mks)**

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ii) Job scheduling **(2mks)**

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b) With use of examples describe types of desktop publishing software. **(4mks)**

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c) Define the terms below

i) Chatting **(1mk)**

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ii) Website **(1mk)**

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iii) Search engine **(1mk)**

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d) Explain the effect of information technology in:

i) Employment **(2mks)**

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ii) Environment **(2mks)**

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This is the last printed page. Good luck

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……

SCHOOL: ……

ADM NO: …….. SIGN: ……. DATE: ……..

COMPUTER STUDIES PAPER 2 QUESTION PAPER

QUESTION 1 (50 Marks)

1.The information below was extracted from CMC vehicle selling business

Buyer Name	Buyer Address	Buyer Town	Vehicle Reg NO	Vehicle Type	Vehicle Make	Vehicle price	Buyer Number	Amount paid
peter	254	Nakuru	KAJ 001	Matatu	Nissan	1200000	B001	800000
john	678	Eldoret	KAJ 002	Bus	Mazda	2400000	B002	2000000
Ken	963	Nairobi	KAJ 003	Saloon	Toyota	800000	B003	600000
Peter	147	Nakuru	KAJ 004	Pick up	Peugeot	1000000	B004	700000
Roy	456	Bungoma	KAJ 005	Lorry	Isuzu	3000000	B005	2000000
Glen	789	Webuye	KAJ 006	Pick up	Toyota	1800000	B006	1600000
John	678	Eldoret	KAJ 007	Bus	Scania	7500000	B002	7500000
Ken	963	Nairobi	KAJ 008	Matatu	Toyota	1300000	B003	1300000
Phillip	159	Kisumu	KAJ 009	Saloon	Nissan	900000	B007	900000
Peter	254	Nakuru	KAJ 010	Pick up	Isuzu	1500000	B001	1200000
Ken	357	Kisumu	KAJ 011	Saloon	Peugeot	700000	B008	700000
Glen	789	Webuye	KAJ 012	Bus	Isuzu	10000000	B006	9500000
Peter	147	Nakuru	KAJ 013	Matatu	Nissan	2700000	B004	2700000

a) Create a database file named CMC **(2mks)**

b) Using the information in the table, create a table to hold vehicle detail and another to hold buyer details. Name them tbl vehicle and tbl buyer respectively **(4mks)**

c) Enforce referential integrity between two tables. **(2mks)**

d) Create different input screen for each table, giving them appropriate title. Name them frm vehicle and frm buyer. Use them to enter data into the tables. **(12mks)**

e) Display a report only showing the details of the buyers who have cleared paying for the vehicle. Name the report rpt cleared with ‘’CLEARED BUYERS’’ as the title of the report. **(10mks)**

f) Using the two tables create an outlined report showing the customer details, the total amountpaid by each customer and the total amount received by CMC during this time. Name the report rptnilbal and the title as ‘SUMMARY REPORT PER BUYER.’’ **(8mks)**

g) Create a query to display the vehicle details with balances of less than 500,000 but not less

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than 300,000. Name the query as qrymidbal. **(7mks)**

h) Create a report showing the vehicle type, the total sales for each type and the grand total. **(3mks)**

i) Print tblvehicle, tblbuyer, rptcleared, and rptnilbal and qrymidbal landscape orientation with footers being your last name and index number at the centre of the page. **(2mks).**

QUESTION 2 (50 Marks)

2.Use a spreadsheet to manipulate data in the table below.

Adm. NO	Name	Stream	Comp	Art	Bus	Eng	Mat	STUDENT MEAN	RANK
C001	Barasa	H	56	45	36	56	26		
C002	Wangila	K	58	57	90	54	23		
C003	Wafula	H	48	56	54	45	25		
C004	Wanjala	K	78	95	78	46	24		
C005	Kerubo	H	49	86	68	35	52		
C006	Akinyi	K	56	45	25	63	54		
C007	Odhiambo	H	75	78	45	65	56		
C008	Okunyuku	K	89	69	65	53	51		
C009	Nekesa	H	69	58	45	54	52		
C010	Simiyu	H	85	46	78	52	53		
	TOTAL								
	TOTAL	FOR H							
	TOTAL	FOR K							

a) Enter the data in all bordered worksheet and auto fit all columns. Save the workbook as mark1**(15 mks)**

b) Find the total marks for each subject **(3 mks)**

c) Find total for each subject per stream using a function**. (5 mks)**

d) Find mean mark for each student using a function **(5 mks)**

e) Rank every student in descending order using the mean **(5 mks)**

f) Create a well labeled colum chart on a different sheet to show the mean mark of every student.

Save the workbook as mark2. **(7 mks)**

g) Using mark1, use subtotals to find the average mark for each subject per stream. Save theworkbook as mark3 **(7 mks)**

h) Print mark1, mark2, and the chart **(3 mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

C.R.E PP1

TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER ANY **FIVE** QUESTIONS IN THE ANSWER SHEETS PROVIDED.

Answer any five questions in the answer sheet provided

1.a) Name the five books of the Bible which are referred to as Pentateuch **(5mks)**

b) Write down five teachings about marriage from the Biblical stories of creation **(10mks)**

c) Give five reasons why Christians read the Bible **(5mks)**

2.a) State seven promises that God made to Abraham **(7mks)**

b) Give eight reasons why circumcision was important to the Jews **(8mks)**

c) State five consequences of breaking taboos in Traditional African communities **(5mks)**

3.a) Describe the characteristics of False prophets in the old Testament **(7mks)**

b) State the Teachings of prophet Amos about the day of the Lord **(8mks)**

c) How can Christians assist the church leaders to perform their duties effectively? **(5mks)**

4.a) Give six reasons why Jeremiah was not willing to accept the call of God to become a prophet **(6mks)**

b) Explain four evils condemned by prophet Jeremiah during the Temple sermon **(8mks)**

c) State six ways in which church leaders communicate God's message to people in Kenya today **(6mks)**

5.a) From the call of Jeremiah identify eight qualities of God. (Jeremiah 1) **(8mks)**

b) Give six characteristics of the new covenant foreseen by Jeremiah **(6mks)**

c) Give six ways in which Christians assist victims of disasters **(6mks)**

6.a) Outline six rituals performed during the birth of a baby in Traditional African communities **(6mks)**

b) Give six reasons why children are important in Traditional African communities **(6mks)**

c) List eight duties of diviners in Traditional African communities **(8mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……

CRE PP/2 313/2

TIME: $2^1/_2$ hours

INSTRUCTIONS:

Answer any Five questions in the answer sheets provided

ANSWER FIVE QUESTIONS

1. a) What were the expectations of the Jews concerning the messiah. **(8mks)**

b) Identify what angel Gabriel said about person and mission of John the Baptist to Zacharia according to St Luke gospel 1; 13 – 17. **(6mks)**

c) Identify ways that showed that Jesus came from a poor background. **(6mks)**

2. a) Describe the call of the first disciples of Jesus in accordance to Lk 5: 1 – 11 **(8mks)**

b) Outline six reasons why Jesus chose the twelve disciples. **(6mks)**

c) State six instructions given by Jesus to the twelve disciples before sending them on a mission. **(6mks)**

3. a) Give four teaching about Jesus from the cure of the paralytic. **(8mks)**

b.) Identify seven teachings of Jesus in the parable of the coin and the lost sheep. **(7mks)**

c.) State five ways used by Christians to spread the gospel of Jesus today. **(5mks)**

4a) Relate the story of the widow and the unjust judge. **(6mks)**

b) Give eight reasons why Jesus used parables in his teaching. **(8mks)**

c) State six actions of Jesus which showed that he loved the needy. **(6mks)**

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5. Narrate Jesus triumphant entry into Jerusalem before his arrest LK 19 ; 28 – 40 **(8mks)**

b) Give six reasons that made Judas Iscariot betray Jesus. **(6mks)**

c) Identify 6 occasions when Jesus prayed as recorded in st Luke gospel. **(6mks)**

6.a) Explain the teachings of Jesus on the unity of believers as illustrated in the vine and branches **(6mks)**

b) Identify 8 gifts of the holy spirit. **(8mks)**

c) State six ways in which the gifts of the holy spirit are abused in the church today. **(6mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……....……

ADM NO: …….. SIGN: …….. DATE: ……..

KENYA CERTIFICATE OF SECONDARY EDUCATION

101/1

ENGLISH

Paper 1

Time: 2 Hrs

INSTRUCTIONS TO CANDIDATES

- Write your name and index number in the spaces provided above.
- Sign and write the date of examination in the space provided.
- Answer **ALL** the questions in this question paper.
- All the answer must be written in the spaces provided in this question paper.

FOR EXAMINERS USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	10	
3	30	
TOTAL SCORE	**60**	

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1.Functional writing

Imagine that you are the secretary of a commission that has investigated conditions in your country's prisons and what can be done to improve these conditions. Write a report. (20 Marks)

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2.CLOZE TEST **(10Mks)**

Complete the passage below by filling in the blank spaces with the most appropriate words.

A certain couple was worried about **(1)…….** son not wanting to study mathematics at the **(2) ……..** he was in, so they decided to send him to missionary school. (**3) ……..** the first day of school, their son came racing into the house, went to his room and **(4) ……..** the door shut. His parents were a little **(5) …….** about this and they went to his room to see if he was okay. They found him sitting at his desk doing his homework.

The boy kept on doing that for the rest of the term, the son brought home his report card and gave (6) **……** to his parents. When they looked at it they saw an A under (7) **……** Mother and father were very **(8)…….** and asked their son, "what changed your (9) **……..** about mathematics?"

The son looked at his parents and said, "Well on the first day when I walked into the classroom, I saw a guy nailed to the plus sign at the front of the classroom behind the teachers desk and I knew they meant (10) **…….**

3. (a)The battle

Helmet and rifle, pack and overcoat

Marched through a forest, somewhere up ahead
Guns thudded. Like the circle of a throat
The night on every side was turning red.

They halted and they dug. They sang like moles
Into the clammy earth between the trees
And soon the sentries, standing in their holes,
Felt the first snow. Their feet began to freeze
At dawn the first snow. Their feet began to freeze

At dawn the first shell landed with a crack
Then shells and bullets swept the icy woods.
This lasted many days. The snow was now black.
The corpse stiffened in their scarlet hoods

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Most clearly of that battle I remember
The tiredness in the eyes, how hands looked thin
Around a cigarette, and the bright ember
Would pulse with all the life there was within

(Louis Simpzon)

i. Identify the examples of onomatopoeia used in the poem. **(2Mks)**

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ii. Identify at least four words that have the /i: / sound. **(2Mks)**

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iii. Give at least two examples of alliteration used in the poem. **(2Mks)**

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a) Draw two columns then place each of the following words in the corresponding column to show whether it has a /z/ or /s/ sound **(5Mks)**

See, piece, scissors, waste, season, phase, axe, news, miser, girls

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b) Use each of the following words twice in a sentence to bring out two different meanings of the word. Do not change the form of the word. **(3Mks)**

Figure

Peter

Order

……

……

……

……

c) Provide a homophone for each of the following. **(3Mks)**

i. Die……

ii. Which……...

iii. Waist……

iv. Council……

v.Profit……

vi. Owe……..

d) Imagine that you were to narrate a story to an audience, how would you alert them that you are about to narrate the story? **(4Mks)**

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e) Write two things we need to do in order to have effective telephone conversation. **(1Mk)**

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(f) Mulwa walks to the neighbour's house from where blaring sounds of music can be heard. He knocks at the door and his neighbour appears.

Mulwa: I want you to turn off the music

Neighbour: You want me to …….. my foot! What impertinence! And why must I obey your orders?

Mulwa: You see I am trying to study.

Neighbour: That's your problem, for all I care

Mulwa: But I have an exam tomorrow.

Neighbour: So?

Mulwa: You turn down the volume

Neighbour: Young man, you mind your own business and let me be…….!

Now write the dialogue of at least eight exchanges, in which you use etiquette. **(8Mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

ENGLISH PAPER 2

FORM 3 END OF TERM TWO

(COMPREHENSION, SEEN COMPREHENSION

POETRY AND GRAMMAR)

101/2

ENGLISH

PAPER 2

TIME: 2 ½ HRS

INSTRUCTIONS TO CANDIDATES

1. ANSWER ALL QUESTIONS IN THIS QUESTION PAPER

2. ALL THE ANSWERS SHOULD BE WRITTEN IN THE SPACE PROVIDED IN THIS QUESTION PAPER

FOR EXAMINERS USE ONLY

QUESTION	MAX,UM SCORE	CANDIDATES SCORE
Comprehension	20	
seen comprehension	25	
Poetry	20	
Grammar	15	
Total	80	

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COMPREHENSION

INFORMATION SYSTEM ANALYSIS

Prof Atieno Ndede-Amadi the head of the university's school of Business at Technical University of Kenya (TUK) and associate professor of information systems and accounting, has embarked on a crusade to convince her peers of the need to introduce information systems (IS) analysis as a complete academic programme. She believes that the course would benefit young people interested in IT, as well as local enterprises that have had to rely on expatriates with the skill.

Prof Atieno's concern arises from her own study. She established that despite a high demand for information system analysts there weren't many Kenyans specially trained for the job.
As such, companies were hiring outsiders as local universities continued to concentrate on broad range computer science and programming courses, and failing to give much thought to IS analysis.

Information system analysts are trained to evaluate and develop technology systems to help business to run optimally. They identify user and consumer needs and translate them into technology solutions. Despite this critical function, there aren't many people called IS analysts in the local market, and that's because the universities here have not been keen to train in this specialization.

"A wide systems analysis skills gap exists in the country due to the absence of strong information system academic programs in local universities." Prof Atieno states in her study report which is titled," Information Systems Education in Kenya: Students Specialization Choice trends." The work has been published in the International Journal of Education and Development using Information and communication Technology (IJEDICT). The study found that of all the 32 public universities and university colleges studied, none offered an information systems or management information systems degree. Only two degrees came close with four institutions offering a Bachelor of Technology (Business Information Technology) degree in varying combinations, and one university offering a Bachelor in Business Information and Management.

Prof Atieno says that if both students and university heads fully appreciated the value of information systems analysis, they would be more focused on it as an area of study. She actually established in her study that the supply gap of people with the skill is largely a result of ignorance. Globally, a majority of IS programs within universities are located in business schools, and they have names such an information systems, management information systems, computer information systems, business information systems, or business information

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technology. An IS degree programme combines business and computing topics, with the emphasis on technical and organizational issues varying from one programme to another, and also from one academic institution to the next. Generally, it bridges business and computer science, using the theoretical foundations of information and computation to study various business models and related algorithmic process within the computer science discipline.

According to Prof Atieno, organizations cannot effectively and efficiently do business without solid IS setups for connecting systems within as well as with its supply chain stake holders, such as vendors and distributors. Yet, many students aren't aware of the possibility of a career in this field. In fact, the study found that only 11% of those interviewed knew about IS analysis as a possible area of specialization. "An Information system as an academic discipline seems to be largely unknown to high school students in Kenya, making it impossible for them to select it as an area of specialization in their university education," it states. The net effect is that the level of IS education in the country has suffered, resulting in a deficiency in systems analysis and related skills.

QUESTIONS

1.What campaigns has Prof Atieno Amadi involved herself in according to paragraph one . **(2mks)**

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2.Mention the consequence Kenyans face as a result of lack of personnel in Information Systems Analysis **(1mk)**

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3.Explain the irony evident in the passage **(2mks)**

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4. Enumerate the functions of an Information System analyst. **(2mks)**

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5.In your own words write the message in this passage **(3mks)**

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6.What do you think is shocking about the findings of this study **(2mks)**

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7.What is the tone of the passage? **(2mks)**

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8.i) A wide system analysis skills gap exists in the country due to the absence of strong information systems. **(1mk)**

Begin: As a result

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ii) There weren't many Kenyans specially trained for the job (add a question tag) **(1mk)**

……

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9.Explain the meaning of the following words and phrases as used in the passage **(4mks)**

i. Globally

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ii. Specialization

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iii. Supply chain stake holders

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iv. Algorithmic processes

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Read the excerpt on the Fathers Of Nations given below and then answer the questions that follow. (25 marks)

Read the Fathers of Nations excerpt below and answer questions that follow(25 mks)

Mossi: Far from the truth! Take the issue of development, for example. Everywhere in The Samaritan, I am being accused of inflating the cost of projects and presiding over shoddy Municipal works. Am I indeed responsible for that?

Nicole: Maybe it is because you are the overall leader. The buck stops with you, as they say.

Mossi: Oh, yes, it's easy to think so because I am the overall custodian of the public good in our Municipality. But take any project, such as the construction and maintenance of secondary roads in our town. Are any roads ever constructed? I will tell you what happens. Only a few kilometres of road are usually dug up and then levelled. Then the contractor pours old black oil and claims the road is tarmacked. Today, our secondary roads look like part of an abandoned battlefield where bombs were detonated. Even tractors can get stuck in those roads! Yet, the Council pays top dollar for these roads each year! Am I responsible?

Nicole: Tell me, Your Worship.

Mossi :(Standing up and pacing about at the boardroom) It is my Deputy! That irredeemable gossip and broker! As you know, he doubles up as our Municipal Secretary for the Department of Physical infrastructure. He uses this position to ensure only his companies or those of his relatives win tenders for road construction in our Municipality. The same happens with regard to tenders for the construction of bridges, pavements, drains and.

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watercourses. Sadly, they don't do any meaningful work! They simply **misappropriate** the funds!

Nicole i: So what does that have to do with the people?

Mossi : Doesn't bother you that the people overwhelmingly voted for this kind of a person knowing very well he has never accomplished anything in his life other than swindle the people?

Nicole: Oh, did they know?

Mossi: Of course, they did! There is hardly any person he has not conned in this town! You always find him leaning on the street poles in our town's backstteets, gazing vacantly into empty spaces like an evil Spirit — waiting for fake title deeds to be printed. He prints ten title deeds for the same plot, and then sells the same plot to ten different people. Yet the people went ahead and voted for him! Why do the people glorify evil and mediocrity, and then turn and whine when it hurts them? And you know what?

QUESTIONS

a) Place this excerpt in its immediate context. **(4 marks)**

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b) Mayor Mossi claims that **Hon. Ramdaye** has conned almost everyone in their town. Mention one Council leader who has been conned and explain how. **(2mks)**

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c) Discuss two themes raised in the excerpt. **(4mks)**

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d) Identify two-character traits of Hon. Ramdaye brought out in the excerpt. **(4mks)**

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e) What two stylistic techniques the writer has employed in the excerpt? **(4mks)**

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f) They simply misappropriate the funds! ***(Rewrite in the passive)*** **(lmk)**

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g) Only a few **kilometres** of road are usually dug up and then levelled. ***(Rewrite in the active voice)*** **(1mk)**

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h) Maybe it is because you are the overall leader. ***(Rewrite replacing "may be" with another word)***

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i) The buck stops with you, as they say. **(Rewrite adding a question tag)** **(1mk)**

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……

j) Everywhere in The Samaritan, I am being accused of inflating the cost of projects and presiding over shoddy Municipal works. (***Rewrite replacing the underlined word with a phrasal verb)*** **(lmk)**

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k) Explain the meanings of the following words used in the excerpt. **(2mks)**

Inflating

……

……

Misappropriate

……

……

POETRY

Read the poem below and answer the questions that follow

The face of hunger

I counted the ribs on his concertina chest
Bones protruding as if chiseled
By a sculptor's hand of famine

He looked with glazed pupils
Seeing only a bun on some sky-high shelf.

The skin was pale and taut
Like a glove of a doctor's hand.

His tongue darting in and out
Like a chameleon's
Snatching confetti of flies.

Oh! Child,
Your stomach is a den of lions
Roaring day and night.

By Oswald Mbuyiseni Mtshali

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a) Who is the persona in the poem. **(2mks)**

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b) Identify the imagery used and show its effectiveness **(6mks)**

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c) Explain the meaning of the following sentences:-

1) Seeing only a bun on some sky-high shelf.

2) Your stomach is aden of lions

Roaring day and night **(4mks)**

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d) What is the attitude of the persona towards the boy? **(2mks)**

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e) What is the meaning of the following words? **(4mks)**

1) Chiseled
2) Glazed
3) Taut
4) Confetti

f) What is the mood of the poem? **(2mks)**

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GRAMMAR

1.In the verb below, write two sentences showing both transitive and the intransitive form of the verb.(2mks)

Wash

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2. Rewrite the following sentences using instructions given after each.

(Do not change the meaning of the sentence)

a) The corporal hurts his head when Grusha hits him.(rewrite in simple past tense)

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b) The Al-Shabab sympathizers will get arrested. They assist them destroy innocent lives(begin using: if…….

……

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c) Kenya's economy will go down. Proper measures need to be taken (rewrite using….unless…..

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……

3.Fill the blanks using appropriate form of word given in the brackets.

a) Rivalry between Owuor and Otieno had_____ (begin) before Akoko got married.

b) If she had spoken to them, they_____(listen).

c) If form three students decide to work hard now, they_____(pass) in their fourth year exam.

4.Use the following adjective quantifiers to fill in the gaps in the sentences below.

a) Owing to the strike, only_____ (few/a few) workers were able to report before time.

b) Do you not have _____(some/any) money in your purse?

c) _____(a little /a few) timber was left in the store for usage.

5. Correct the underlined idioms in the sentences below

a) I found myself <u>between a rock and a soft place</u>.

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b) <u>My heart was in my chest</u> when I heard the sad news.

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c) <u>A lot of water had gone over the bridge</u> when the principal arrived.

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d) <u>I had developed hot feet</u> when the teacher on duty got into our class.

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

FORM 3 END TERM 2

PAPER 3

Instructions

Answer two questions only

One from the novel or the play and the other one imaginative

1.IMAGINATIVE COMPOSITION

Either

a) Write a story starting with:

As I said goodbye to her, little did I know that would be the last time I would be seeing her… **(20Mks)**

Or

b) Write a composition to illustrate the following proverb:

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

2.SAMARITAN (COMPULSORY)

The novel '**The Samaritan'** by **Paul B. vitta** exposes a number of incidents of conflict or disagreement. Write a composition in support of this statement

3.THE PLAY (OPTIONAL)

Action speaks louder than words. Discuss the truth of this saying using illustrations from Leonard Kibera's **A Silent Song.** **(20mks)**

OR

Poor choices have a negative impact on our life. How accurate is this assertion, given that it makes reference to Adipo sidang's play **Parliament of Owls?** **(20mks)**

OR

"Memory is unreliable" Show the validity of this statement focusing on character Ono in the novel **The artist of the floating world**. **(20mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……

SCHOOL: ……

ADM NO: …….. SIGN: ……. DATE: …….

KENYA CERTIFICATE OF SECONDARY EDUCATION

312/1

GEOGRAPHY

PAPER I

FORM 3

TIME: 2¾HRS

INSTRUCTION TO CANDIDATES

a) This paper consists of two sections: A and B.

b) Answer ALL the questions in Section A. in section B, answer question 6 and any two other questions

c) All answers must be written in the answer booklet provided.

SECTION A (25 MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION

1.(a) Name two theories put forward to explain the causes of earth movements **(2mks)**

(b) Define three main boundaries that separate tectonic plates **(3mks)**

2 (a) Name two types of Igneous rocks **(2mks)**

(b) State the three classes of Igneous rocks based on their chemical composition **(3mks)**

3.(a) Name the three layers of the atmosphere from the surface of the earth upwards **(3mk)**

(b) Name two boundaries separating layers of the atmosphere **(2mks)**

4.(a) A part from the sun name three other components of the solar system **(3mks)**

(b) Give two reasons why the sun is considered a unique start **(2mks)**

5.(a) In your answer booklet draw and label diagram of a simple fold **(3mks)**

(b) Name two fold mountains in Africa **(2mks)**

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SECTION B

Answer question 6 and any other two questions from this section

6.Study the Map of Kitale 1 = 50000 (sheet 75/3) provided and answer the following questions

(a) (i) Name two administrative division of Kitale Map extract **(2mks)**

(ii) Give six figure grid reference of Kipsain Police Post **(2mks)**

(iii) Mention two methods used to represent relief on the Map extract **(2mks)**

(b) (i) Calculate the area of Kitale Municipality. Give your answers in $59Km^2$ **(2mks)**

(ii) Name two functions of Kitale township **(2mks)**

(iii) Give longitudinal extent of Kitale Map extract **(2mks)**

(iv) Identify two types of vegetation found on the area covered by the Map extract **(2mks)**

(c) Draw a rectangle measuring 10cm by 12cm between Easting 24 to 29 and Northing 12 to 18 **(5mks)**

On the rectangle mark the following:

- Seasonal Swamp South of Northing 14
- River Kiotobos
- Road C641
- Sandrums bridge

(d) Farmer at deigany farm carried out a study at colleagues farm at Longieat estate

(i) State two reasons why they would need the Map of Kitale **(2mks)**

(ii) Name two methods they would use to collect data **(2mks)**

(iii) Identify two data information they would collect **(2mks)**

7.(a) (i) Differentiate between an ocean and a sea **(2mks)**

(ii) Name any two types of waves along the African Coast **(2mks)**

(b) Describe three ways in which waves erode the coasts **(6mks)**

(c) Using diagrams describe how a stack is formed **(5mks)**

(d)(i) Name three types of Coasts **(3mks)**

(ii)State three conditions necessary for growth of coral polyps **(3mks)**

(e) Students of Budonga School went for a field study along the coast.

Identify four wave depositional features they may have observed **(4mks)**

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8.(a)(i) Name any two deserts in Africa **(2mks)**

(ii) Name three types of deserts according to the nature of their surfaces **(3mks)**

(b)(i) State two factors which influence wind transportation **(2mks)**

(ii) Describe three ways through which wind transport its load **(6mks)**

(c) Using illustrations describe the formation of Mushroom block **(6mks)**

(d) Students of Kirima school carried out a field study of a desert region

(i) State two ways in which students prepared **(2mks)**

(ii) Name four desert water features they may have seen **(4mks)**

9. (a)(i) Name three sources of ground water **(5mks)**

(ii) Give four features (factors) which influence the existence of ground water **(2mks)**

(iii) State four conditions ideal for the formation of artesian walls **(4mks)**

(b)(i) Name three surface features found in Karst Sceneries **(3mks)**

(ii) Describe how a stalactite is formed **(5mks)**

(c) Explain three significance of resultant features in limestone areas **(6mks)**

10. (a) Draw a Map of Africa and on it mark and name **(5mks)**

- The Benguela current
- The canary current
- Regions of tropical continental climate
- Mozambique current

(b)(i) State six characteristics of tropical continental climate **(6mks)**

(ii) Explain how the following factors influence the climate of a region

(i) Latitude **(2mks)**

(ii) Aspect **(2mks)**

(iii) Ocean currents **(2mks)**

(c) You intend to carry out a field work in a weather station around the school

(i) State four preparations you would make before the field study **(4mks)**

(ii) Name two instruments you would observe in the Stevenson, screen **(2mks)**

(iii) Give two follow up activities you would undertake after the field study **(2mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……

SCHOOL: ……

ADM NO: …….. SIGN: ……. DATE: ……..

END TERM II

KENYA CERTIFICATE OF SECONDARY EDUCATION

312/2

GEOGRAPHY

PAPER II

FORM 3

TIME 2 $^{3}/_{4}$ HOURS

INSTRUCTIONS TO CANDIDATES

a) This paper consists of two sections: A and B.

b) Answer ALL the questions in section A. in section B, answer question 6 and any two other questions.

c) All answers must be written in the answer booklet provided.

SECTION A: 25 MARKS

Answer all the questions

1. (a) Name two areas where gold is mined in Tanzania. **(2 mks)**

(b) State three industrial use of copper as a mineral. **(3 mks)**

(c) Name three methods of alluvial mining (placer mining). **(3 mks)**

2.(a) A photograph is divided into 3 parts. Name them. **(3 mks)**

(b) State three limitations of using photographs. **(3 mks)**

3.(a) List three main types of sampling. **(3 mks)**

(b) Name the methods that are used to analyse statistical data. **(3 mks)**

4.Name two types of questionnaires. **(2 mks)**

5.Outline three types of field work. **(3 mks)**

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SECTION B:

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

6.Use the table below to answer the questions that follow.

(a) The table below shows the quantity of minerals produced in Kenya in tonnes in 2010 and 2011.

MINERALS/YEARS	2010	2011
Soda ash	290,000	350,000
Fluorspar	40,000	80,000
Salt	20,000	40,000
Others	10,000	20,000
TOTAL	360,000	490,000

(i) Draw proportional circles to present the information above. **(14mks)**

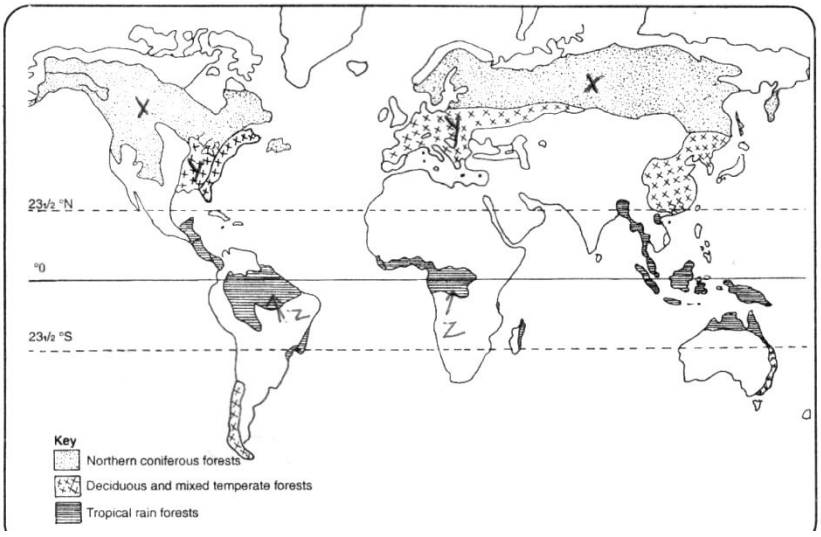
(ii) State two advantages of using proportional circles in data representation. **(2mks)**

(b) (i) Name any two fuel minerals. **(2mks)**

(ii) Name three major oil producers in the Middle East. **(3mks)**

(iii) State four contribution of oil to the economies of the Middle East countries. **(4mks)**

7.Study the map below showing the distribution of world's natural forests.



a) Name the types of forests found in the regional marked X, Y and Z. **(3 mks)**

b) State three characteristics of temperate hardwood forests. **(3 mks)**

c) (i) Differentiate between afforestation and Re-afforestation. **(2 mks)**

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(ii) Explain four measures the government has taken to realize effective management of the forests. **(8 mks)**

(iii) State five problems facing forests in Kenya. **(5 mks)**

(d) Explain two importance of forest exploitation in Canada. **(4 mks)**

8.(a) Name two major types of aerial photographs. **(2 mks)**

(b) To describe the major relief features in a photograph, some clues are used. Name four of them. **(4 mks)**

(c) Explain how each of the following features would be indentified in a photograph**.** **(8 mks)**

(i) Settlement

(ii) Planted trees

(iii) Mining

(iv) Manufacturing

(d) (i) Name two methods of open cast mining. **(2 mks)**

(ii) Briefly explain the shaft method of underground mining. **(5 mks)**

(iii) Name the areas where the following minerals are mined in Kenya. **(4 mks)**

i. Fluorspar –
ii. Diatomite –
iii. Gold –
iv. Titanium –

9.(a) What is field work? **(2 mks)**

(b) Name three types of fieldwork. **(3 mks)**

(c) You plan to carry out a field study of an open air market near your school.

(i) State four types of information you would collect during the field study. **(4 mks)**

(ii) List four methods you would use to collect the data. **(4 mks)**

(iii) Explain three ways in which the local authority would use your findings to improve the open air market. **(6 mks)**

(iv) State two hypothesis for the study. **(2 mks)**

(v) What are the advantages of learning geography through fieldwork. **(4 mks)**

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10. (a) The table below represents Kenya's export crops 2009-2011 in '000 tonnes.

COMMODITY	2009	2010	2011
Coffee	230	200	190
Tea	210	240	320
Sisal	50	30	40

(a) (i) Using the table above, draw a comparative bar graph to present the data. **(7 mks)**

(ii) State two advantages of using comparative bar graphs to present data. **(2 mks)**

(iii) Name three other methods of data presentation that can be used to present the data above. **(3 mks)**

(b) Name two methods used in taking measurement as a way of collecting statistical data. **(2 mks)**

(c) Name three secondary sources of statistical data. **(3 mks)**

(d) Explain four factors you would consider when setting up questions in a questionnaires. **(8 mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……...

311/1

HISTORY & GOVERNMENT

PAPER I

FORM 3

INSTRUCTIONS TO CANDIDATES

This paper consists of three sections; A, B and C. Answer all the questions in section A, three questions from section B and two questions from section C.

SECTION A (25 MARKS)

Answer all the questions in this section.

1. Identify one branch in the study of History and Government of Kenya. **(1mk)**

2. Give the name of the hominid whose remains were discovered at Fort Ternan near Kericho in 1961. **(1 mk)**

3. Name the dispersal area of the Eastern Bantu speakers. **(1 mk)**

4. State two duties of the Orkoiyot among the Nandi. **(2 mks)**

5. Identify the MAIN feature of the decentralized communities in Kenya. **(1 mk)**

6. Give the main reason why the rulers of Malindi welcomed the Portuguese in the 16th century. **(1 mk)**

7. Give two factors which influenced Seyyid said to develop agriculture in Zanzibar in the 19th century. **(2 mks)**

8. Apart from the Nandi name two other communities that resisted the establishment of British colonial rule in Kenya. **(2 mks)**

9. State the main duty of the governor during the British colonial rule in Kenya. **(1 mk)**

10. State one grievance raised by the Asians in Kenya that was addressed by the Devonshire white paper. **(1 mk)**

11. State one reason why the colonial government established local native councils in Kenya in 1924. **(1 mk)**

12. Identify two features of African farming in Kenya during the colonial period. **(2 mks)**

13. State two problems faced by independent schools established by Africans during the colonial period. **(2 mks)**

14. Identify one natural way of becoming a Kenyan citizen. **(1 mk)**

15. Give two reasons why the government may limit a persons freedom of speech. **(2 mks)**

16. State two ways in which the rights of a child in Kenya have been abused. **(2 mks)**

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17. Give the two houses of parliament in Kenya as per the 2010 constitution. **(2 mks)**

SECTION B (45 MARKS)

Answer any three questions from this section.

18. (a) State five reasons why the Eastern Bantu speakers migrated from Shungwaya. **(5 mks)**

(b) Explain five results of the interaction between the Bantu and the Cushites upon their settlement in Kenya. **(10 mks)**

19. (a) Give five factors that led to the rise and growth of towns along the Kenyan coast during the pre-colonial period. **(5 mks)**

(b) Discuss five reasons for the decline of the coastal towns. **(10 mks)**

20. (a) Give three reasons why Africans were denied the right to grow cash crops in colonial Kenya. **(3 mks)**

(b) Explain six reasons why the colonial government encouraged white settlement in Kenya. **(12 mks)**

21. (a) Mention three features of the African political organizations formed in Kenya before 1939. **(3 mks)**

(b) Identify the problems encountered by Kenyan nationalists during the struggle for independence. **(12 mks)**

SECTION C (30 MARKS)

Answer any two questions from this section.

22. (a) State three circumstances under which one would cease to be a citizen of Kenya. **(3 mks)**

(b) Explain six ways in which the Bill of Rights protects the rights of the individual**.** **(12 mks)**

23. (a) Give five reasons why national integration is important in Kenya. **(5 mks)**

(b) Explain five factors that have undermined national unity in Kenya. **(10 mks)**

24. (a) Outline five ways how a Kenyan citizen can participate in the democratic process. **(5 mks)**

(b) Describe five principles of democracy today. **(10 mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: …….. DATE: ……...

HISTORY & GOVERNMENT PAPER 2

TIME 2 ½ HOURS

311/2

Instructions

This paper contains three sections, A, B and C.

Answer ALL questions in section A, THREE questions in section B and TWO questions in section C in the answer sheets provided.

1.Identify one type of artifact that is likely to be found in archeological site **(1Mk)**

2.Name one source of information on the creation theory **(1Mk)**

3.Give the main form of transport that was used in the trans-Saharan trade. **(1Mk)**

4.Name two groups of people that were involved in the trans-Atlantic trade. **(2Mks)**

5.Identify the main factor that contributed to the growth of Athens in ancient Greece. **(1Mk)**

6.Give the main reason why the Europeans powers held the berlin conference of 1884 to 1885**.** **(1Mk).**

7.Give two reasons that made early human being to live in groups during the Stone Age period. **(2Mks)**

8.Identify two ways through which iron working spread in Africa. **(2Mks)**

9.Name two metals that were used as currency in pre-colonial Africa. **(2Mks)**

10. State two advantage of the use of money over barter trade as a medium of exchange. **(2Mks)**

11. State two disadvantages of using wood as a source of energy. **(2Mks)**

12. Give two functions of chiefs in Zimbabwe during colonial period **(2Mks)**

13. Give two results of the French assimilation policy in Senegal. **(2Mks)**

14. State two roles played by the African chiefs in the British colonial administration in Nigeria. **(2Mks)**

15. State two social factors that led to the scramble for colonies in Africa by European powers **(2Mks)**

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SECTION B. (45 MARKS)

(Answer any THREE questions)

16.

a. State five reasons why early people domesticated crops and animals during the neo-lithic period. **(5Mks)**

b. Explain five causes of food shortages in Africa today. **(10Mks)**

17.

a) Give three ways in which the invention of the wheel revolutionalized transport in Europe before the 19th century. **(3Mks)**

b) What are the disadvantages of using air transport? **(12Mks)**

18.

a. Give three methods used to acquire slaves from west during the Trans-Atlantic trade. **(3Mks)**

b. Explain six factors that led to the decline of the Trans-Atlantic trade. **(12Mks)**

19.

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

b. Explain six social effects of the industrial revolution in Europe during the 18th century. **(12Mks)**

SECTION C. (30 MARKS)

(Answer any TWO questions)

20.

a.Give three functions of the Kabaka of the Buganda Kingdom during the pre-colonial period. **(3Mks)**

b.Describe the political organization of the Shona during the pre-colonial period. **(12Mks)**

21.

a. Give three conditions which one had to fulfill inorder to become a French citizen in Senegal. **(3Mks)**

b. Explain six differences between the use of British indirect rule and the French assimilation policy.**(12Mks)**

22.

a. State three factors that enabled European powers to colonize Africa in the late 19th C **(3Mks)**

b. Explain six effects of the partition of African on African communities. **(12Mks)**

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NAME: ……..

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

441/1

HOME SCIENCE

FORM THREE

PAPER 1

THEORY

2 ½ HOURS

Kenya Certificate of Secondary Education

HOME SCIENCE

PAPER 1

2 ½ HOURS

INSTRUCTIONS TO CANDIDATES

This paper contain three section A, B and C

Answer all questions in section A.

Question 20 (compulsory) in section B, and any two questions from section C

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SECTION A.(40 MKS). Answer all questions.

1.By giving one example in each case state two categories of cooking methods. **(2 mks)**

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2.What is arecipe? **(2 mks)**

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3.State two causes of cracked feet. **(2 mks)**

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4.Outline two reasons why metal boxes are lined before storage of clothes. **(2 mks)**

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5.List down three types of conspicuous seams. **(3 mks)**

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6.Give two reasons for steeping in laundry work. **(2 mks)**

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7.State two functions of salt in laundry work. **(2 mks)**

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8.State four types of permanent stitches. **(2 mks)**

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9.State two advantages of bathing with warm water. **(2 mks)**

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10. State three qualities to consider when choosing fabric for table cover. **(3 mks)**

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11. State two effects of immersing a hot aluminium frying pan in water. **(2 mks)**

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12. State three measures that can be used to control bedbugs in the house. **(3 mks)**

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13. Identify three points to consider when buying land for a family house. **(3 mks)**

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14. State three advantages of using wooden spoons when cooking. **(3 mks)**

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15. Suggest two reasons why synthetic detergent are popular for laundry work. **(2mks)**

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16. Name four types of scissors. **(2 mks)**

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17. State three reasons why labels are important to a consumer. **(3 mks)**

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SECTION B (20 MKS)

Answer all questions.

18.

a) Describe the procedure of cleaning your school leather shoes. **(10 mks)**

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b) Describe the procedure of laundering of white cotton shirt. **(10mks)**

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SECTION C (40 MKS)

Answer any two questions from this section.

19.

a) What is malnutrition? **(2 mks)**

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b) Explain four causes of malnutrition in your society. **(8 mks)**

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c) Suggest three ways that can be used to save expenditure on food in the home. **(6 mks)**

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d) State four reasons why food is cooked. **(4 mks)**

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20.

a) Give four rules to be used in order for darning work to be best. **(4 mks)**

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b) State four qualities of a well-made seam. **(4 mks)**

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c) Give four qualities of a fabric for making a school shirt/blouse. **(4 mks)**

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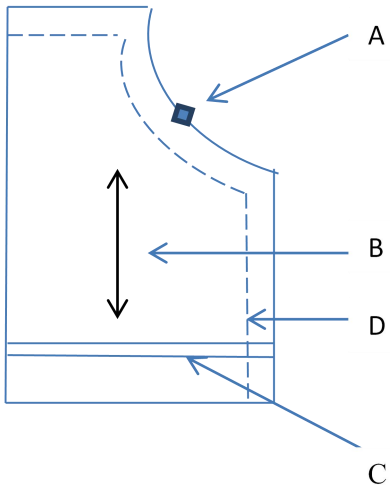
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d)

i. Label the pattern symbols on the bodice pattern below. **(4 mks)**



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ii. State the functions of symbols A,B,C,D above. **(4 mks)**

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21.

a.Mention six ways that could be used to maintain our personal clothes. **(6 mks)**

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b. Explain four dangers of improper disposal of polythene bags at home. **(8 mks)**

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c. State six differences in laundering of white and fast coloured cotton. **(6 mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

HOME SCIENCE

FORM 3

441/2

CLOTHING AND TEXTILE

A pattern of a girl's skirt is provided . You are advised to study the sketches, the question paper and the layout carefully before you begin the test.

Materials provided

1.Pattern pieces

- Skirt front
- Skirt back
- Front yoke

2. Light weight cotton fabric 50cm by 90cm wide

3.Sewing thread to match the fabric

4.One large envelope

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The test

Using the materials provided, cut out and make up the RIGHT HALF of the skirt to show the following processes.

a. Making of the back dart
b. The preparation of the gathers on the skirt front piece. Leave the gathering stitches
c. Attatchment of the yoke piece to the skirt front using a neated overlaid seam. Neaten by loop stitches
d. Making of a neated side seam. Neaten by overcasting
e. Preparation of the skirt hem and slip hemming it

At the end of the examination, carefully sew on to your work, on a single fabric a lable bearing your name and admission nunber. Remove pinsand needles from your work,then fold your work carefully and place it in the envelope provided. Do not put scraps of fabricin the envelope.

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……..……

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FOOD AND NUTRITION

HOMESCIENCE PRACTICAL – 441/3

FORM THREE

Planning Session: 30 min

Practical : $1\frac{1}{4}$ *hrs*

Instructions:

1.Read the test carefully

2.Textbooks and recipes may be used during the planning session as reference materials

THE TEST

Your friend is visiting to spend a weekend with you. Use the items listed below to prepare, cook and serve breakfast for two. Include 2 dishes to accompany the beverage and fruit.

Ingredients

- Milk
- Tealeaves
- Sugar
- Bread
- Eggs
- Fruits in season
- Margarine

Planning session: 30 min

Use separate sheets of paper to make duplicating copies of the following.

1.Identify the dishes and write down their recipes

2.Write down your order of work

3.Make a list of foodstuffs and equipment you will require.

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

JINA: ……..

SHULE: ……..……

NAMBARI YA USAJILI: …… SAHIHI: ……. TAREHE: ……

KIDATO CHA TATU
KISWAHILI/ INSHA
KARATASI YA KWANZA (102/1)
MWISHO WA MUHULA WA PILI
MUDA: SAA $1^{3}/_{4}$

SWALI LA LAZIMA **(ALAMA 20)**

1) Wewe ni katibu wa chama cha viongozi wa wanafunzi katika shule za sekondari katika kaunti. Hivi majuzi mmekuwa na mkutano wa kujadili matatizo yanayowakumba viongozi hao.
Andika kumbukumbu za mkutano wenu.

2) Njaa ni tatizo sugu katika nchi yetu.

Fafanua mbinu mwafaka zinazofaa .

3) Andika insha juu ya Methali mcheza na tope humrukia.

4) Andika insha itakayoishia kwa maneno haya.
……. Nilisimama na kuangalia nyuma. Nilipokumbuka wosia wa walimu, wazazi na wenzangu nilidondokwa na machozi.

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

JINA: …….

SHULE: ……..……

NAMBARI YA USAJILI: …… SAHIHI: ……. TAREHE: ……..

KISWAHILI KIDATO CHA TATU

KARATASI YA PILI

MUDA: SAA 2

MAAGIZO

JIBU MASWALI YOTE

SWALI	**UPEO**	**ALAMA**
1	15	
2	15	
3	40	
4	10	
JUMLA	**80**	

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UFAHAMU (ALAMA 15)

Soma kifungu kifuatacho kasha ujibu maswali yafuatao:-

Pengine mwandishi Goerge Orwell alikuwa na maono ya jinsi mataifa mengi ya Kiafrika yangekuwa pindi baada ya kujinyakulia uhuru, alipoandika riwaya ya 'Shamba la wanyama.'

Riwaya hiyo inaakisi hali halisi ya mataifa haya, Kenya ikiwemo, ambapo imejikita katika dhihirisho la jinsi ujenzi wa matabaka ya kitawala, ubinafsi na ukandamizaji wa wananchi, unavyoweza kuzua maasi na hatimaye mapinduzi ya uongozi ulio mamlakani.

Baada ya kuwaambia wanyama kuhusu maono aliyokuwa nayo ya ulimwengu ambao kila mmoja angeishi huru, nguruwe mmoja anayeitwa Old Major, alijenga ari ya wenzake ili kushinikiza ndoto yake, kwa kuandika amri saba ambazo zilihakikisha kuwa rasilimali zote katika shamba hilo zingegawanywa kwa kila mmoja.

Lakini haya yote hayakuzingatiwa muda mfupi baadaye kwani ubinafsi uliokithiri ulichakachua amri hizo na kusambaratisha mfumo wa uongozi katika shamba hilo. Hali hiyo ndiyo tunayoshuhudia kwa sasa, wananchi wanapoandamana katika majimbo mbalimbali kulalamikia 'kodi mpya za maendeleo' zinazoanzishwa na serikali hizo. Huu ndio mkasa wa ubepari, uliojificha katika mfumo kandamizi wa ugatuzi, ambao kwa wazo langu,hatukuwa tumejitayarisha kabisa kuuanzisha.

Tumegatua kila aina ya uovu, umero na wizi. Tulilolisahau ni kuwa 'magavana' hawa tulioamka mapema kuwachagua walikuwa viongozi wale wale waliokuwa wakihudumu katika serikali za hapo awali, na hawakuwa ',miungu wa ukombozi kama walivyotupulizia baragumu zao walipokuwa wakitunadia kila aina ya 'ahadi' wakati wa kampeni.

Kwani ufisadi ndio umekithiri uovu mwingine tulioagatua ni ukabila. Kwa sasa, tofauti zilizopo si za kumchukia Mkikuyu au Mturkana akihiana na Mluo. Kila jamii kwa sasa zinaona wenzao kwa misingi ya kiukoo.

Mathalani, mzozo wa uongozi jimboni Embu unaelezwa 'kuchochewa' na tofauti za uwakilishi kati ya jamii za Waembu na Wambeere. Hapo awali, hatungesikia 'mikataba' kama hii! Huu ni moto uwakapo, kama si safari ya kuzimu tunayoelekea!

Kwani vita vya kikabila havitasikika tena, bali mafarakano yatakayochukua nafasi yake ni 'mizozo ya kiukoo, ambayo katika majimbo yote 47 ni mkasa kama si saratani tuliyojiambukiza.

Ikiwa hatutatahadhari, huenda tukashuhudia maasi ya kiukoo katika nchi ndogo 47' – na kizungumkuti kitakuwa jinsi ya kuyazima, kwani kila koo 'likipigania nafasi yalo.'

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MASWALI

a) Kwa mujibu wa mwandishi wa makala haya ni mambo yapi yanayoweza kuzua maasi katika nchi ? **(alm3)**

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b) Eleza mifano miwili ya maovu ambayo yamezungumziwa katika kifungu **.** **(alm2)**

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c) "Huu ni moto uwakapo, kama si safari ya kuzimu….." maneno haya yana maana gani kwa mujibu wa taarifa hii. **(alm3)**

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d) Kwa nini mwandishi amefananisha mataifa mengi ya kiafrika baada ya uhuru na shamba la wanyama? **(alm3)**

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e) Dhihirisha kauli ya mwandishi kuwa 'tumegatua kila aina ya uovu, umero na wizi**.** **(alm2)**

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f) Eleza maana za msamiati ufuatao kama ulivyotumiwa katika taarifa (alama2)

(i) Inaakisi

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(ii) Mizozo ya kiukoo

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2. MUHTASARI

Uhaba wa nafasi za kazi unaeendelea kushika kasi, nayo serikali inatoa wito kwa watu wa matabaka mbalimbali kujibidiisha kujiajiri badala ya kungojea kazi za ajira kutoka kwa mashirika mbalimbali.

Hata hivyo, ingawa hili ni wazo nzuri, utapata kwamba kuna vikwazo mbalimbali vinavyowafanya watu kutotaka kuanzisha biashara zao ndogondogo . Ingawa kuna
Tumaini kuwa uchumi wa nchi umeanza kukua, baadhi ya watu hawataki kujijasirisha kuanzisha biashara zao kwa hofu ya kutofaulu.

Wengi wanaogopa kuwekeza pesa zao kwenye biashara ambazo huenda zisiwafaidi katika siku za usoni. Ingawa kuna wale wangetaka kuanzisha viwanda vyao vidogovidogo, kuna tazizo la ukosefu wa pesa za kununulia mtaji.

Vijana wengi wanaotaka kubahatisha katika upande huu hujipata wakiwa hawana hata hela za kununulia vifaa, sikwambii kulipia kodi ya nyumba za kufanyia kazi. Hali hii inazidishwa na tatizo la kupata mikopo kwani hawana wadhamini.

Hakuna atakayewaamini kiasi cha kuwapa mikopo. Aidha, katika miaka ya hivi majuzi mashirika ya kutoa mikopo yamekuwa yakidai riba kubwa mno kwa wadeni wao. Jambo ambalo huwafisha moyo wawekezaji wadogowadogo . utapata kuwa hata wale ambao tayari wameanzisha biashara zao hawawezi kuzipanua kwa sababu ya riba kubwa zinazotozwa na mashirika haya.

Baadhi ya watu hudharau kazi za kujiajiri, hasa zile za mikono, wakidai kuwa hazina pato nono. Kwa mfano ukimwambia mwanamke aanze kazi ya ususi wa vikapu, labda atasema kuwa hiyo ni kazi duni, ya pato duni na

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atahiari kuendelea kusagika kwa shida badala ya kufanya kazi anayoiona duni. Wengine huona kuwa itachukua muda mrefu kwa biashara hizo kuanza kuleta faida na kuweza kufidia kiasi cha pesa walizotumia kuzianzisha.

Watu wengine huona vigumu kuanzisha biashara ndogondogo kwa sababu ya kuchelea kulipa kodi. Kuna wale wanaoona kuwa kodi watakazolipa kwa serikali ni kubwa sana na hawataweza kuzimudu. Nao ushindani kutoka kwa mashirika ambayo tayari yamestawi huwafisha moyo wafanyabiashara wadogo wadogo. Wengine hulazimika kufunga biashara zao na kubahatisha kwingine. Tatizo la ukosefu wa masoko ni kikwazo kingine.

Kabla ya kuanzisha biashara, mtu hana budi kuwa na soko kwa bidhaa zake. Hata hivyo, utapata kuwa baadhi ya watu hukosa masoko kwani wateja wao huhiari kununua bidhaa kutoka ng'ambo au hata mashirika makubwa ya humu nchini. Jambo hili huua biashara ndogondogo. Kwa mfano, soko la mafundi wa juakali si pana kwa sababu ya wananchi wengine kudharau bidhaa zao.

Usalama ni jambo muhimu sana kwa ufanisi wa biashara yoyote ile. Watu wengi hawataki kuthubutu kuanzisha biashara zao kwa sababu ya ukosefu wa usalama. Katika mitaa ambayo kodi si ghali, kuna visa vingi vya wizi na ujambazi ambao huwafanya watu wengi wasianzishe kazi zao huko.

Serikali ina dhima ya kuwashawishi wananchi kujiajiri ili kupunguza tatizo la uhaba wa nafasi za kazi. Ili kufikia lengo hili, viongozi wanapaswa kuwapa vijana mikopo
yenye masharti nafuu. Aidha ni wajibu wa serikali kuhakikisha kuwa vijana hawa wametozwa kodi nafuu.
Serikali pia inafaa kuwalinda wafanyabiashara wadogowadogo dhidi ya ushindani mkali kutoka kwa bidhaa za kuagiza kwa kuzitoza ushuru mkubwa bidhaa zinazoingia nchini.

Maswali

(a) Eleza mambo muhimu yanayozungumziwa katika aya ya kwanza na ya pili.(maneno 100-110)
alama 10,1 ya utiririko)

Matayarisho

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Jibu

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(b) Bila kubadilisha mawazo ya mwandishi fupisha aya ya mwisho.

(maneno 60-65) (alama 5, 1 mtiririko)

Matayarisho

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Jibu

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3. Matumizi ya lugha

(a) (i) Eleza maana ya silabi. **(alm2)**

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(iii) Andika silabi ya KKKI **(alm1)**

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b.Changanua sentensi ifuatayo kwa njia ya jedwali**.** **(alm4)**

Mgeni ambaye amewasili ni mtoto wangu.

(c) Tunga sentensi moja moja kubainisha **(alm2)**

(i)Kihusishi cha ujirani.

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(ii) kitenzi kushirikishi kipungufu ‘ndi’ **(alm2)**

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(d) Bainisha shamirisho katika sentensi hii. **(alm3)**

Mwalimu alimwandikia mwanafunzi wake mtihani kwa kalamu.

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(e) Tumia kitenzi katika mabano ili kuunda nomino mwafaka kukamilisha sentensi. **(alm1)**

Hospitali hii ilikuwa na **……..……**bora sana hapo zamani (huduma)

(f) Tambua maana mbili za sentensi ifuatayo**.** **(alm2)**

Mwalimu ametupa kitabu.

(g) Akifisha

Bi tolo alienda kwa batu kuomba mapambo ya kujirembesha akamwambia ndugu yangu najua langu ndilo lako na lako ndilo langu naomba uniazimie marashi**.** **(alm3)**

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(h) Tunga sentensi zitakazodhihirisha matumizi yafuatayo ya neno'kwa'

(i)Kifaa kilichotumiwa kufanyia jambo. **(alm2)**

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(i) Tunga sentensi kubainisha.

(i)kielezi cha namna linganishi. **(alm2)**

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(ii) kiunganishi cha masharti.

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(j) Andika kwa wingi

Punda aliumia ukwato wake alipokuwa akipita uani**.** **(alm2)**

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(k) Kanusha

Wao wangetuazima kitabu tungemaliza kazi kwa wakati. **(alm2)**

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(l) Andika katika hali ya kutendesheka. **(alm2)**

Huyo mtoto hawezi kusomeshwa Historia.

(m) Bainisha vishazi katika sentensi hii kisha useme ni vya aina gani. **(alm2)**

Niliosha vyombo kisha nilikimbia sokoni.

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(n) Andika upya kwa kubadilisha kivumishi kuwa kiwakilishi. **(alm2)**

Kitu kipya ni kizuri hata kikiwa kidonda.

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(o) Huku ukitoa mifano, eleza matumizi manne ya herufi kubwa. **(alm2)**

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(p) Tunga sentensi ya neno moja kisha uonyeshe sehemu zifuatazo. **(alm3).**

(i) Viambishi awali vya nafsi 1, wakati, kirejeshi.

(ii) Mzizi

(iii) Viambishi tamati-iw,a

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(q) Eleza maana mbili za neno ‘rudi’. **(alm1)**

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4. **ISIMU JAMII (ALAMA 10)**

(a) Eleza mitazamo mitatu kuhusu Chimbuko la Kiswahili huku ukionyesha kama mitazamo hiyo ina mashiko.

(alm6)

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(b) Fafanua dhima nne za lugha ya Kiswahili nchini. **(alm4)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

JINA: ……..

SHULE: ……..……

NAMBARI YA USAJILI: …… SAHIHI: ……. TAREHE: ……

KISWAHILI KIDATO CHA TATU
102/3
KISWAHILI

Karatasi ya 3

FASIHI

MUDA: SAA 2 ½

MAAGIZO

a) Jibu swali MOJA kila sehemu

b) Usijibu maswali mawili kutoka sehemu moja

c) Mtahiniwa ahakikishe kwamba kurasa zote za maswali zimepigwa chapa sawasawa na kuwa maswali yote yamo.

SEHEMU A

1. **USHAIRI (LAZIMA)**

Soma shairi lifuatalo kisha ujibu maswali.

WAPENDA MTU KWA KITU

Shairi nakuleteya , tafadhali mwana twaa
Hikwita hunikimbiya, na kunitiya tamaa
Kumbe mebadiliniya , hata washenzi watwaa
Una mahaba tamaa, wapenda mtu kwa kitu.

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Nilidhani u libasi, njema ya mtu kuvaa
Hawa sina wasiwasi, popote ninapokaa
Kumbe u mtu rakhisi , atakaye hukutwaa
Una mahaba tamaa, wapenda mtu kwa kitu.

Usinionye miuja, miuja haitafaa
Kwamba huna nami haja, ukanambia si baa
Mtu hupenda kimoja, sende nami kwa hadaa
Una mahaba tamaa, wapenda mtu kwa kitu.

Umejifunza wekevu, kutaka kunihadaa
Na huno wako uovu, ni bure hautafaa
Mimi ni wana mtuvu , sitendwi hataataa
Una mahaba tamaa, wapenda mtu kwa kitu.

Kunena mengi nataka, lakini sina wasaa
Na hapa tulipofika, ni kheri hakuambaa
Maana u mtu nyoka, huna ahadi ua baa
Una mahaba tamaa, wapenda mtu kwa kitu.

Tamati sineni sana, muhibu toa tamaa
Ulotenda nishaona, wala hutanihadaa
Sasa kheri kuatana, kulla mtu akakaa
Una mahaba tamaa, wapenda mtu kwa kitu.

(A. Nasir, Malenga wa mvita, uk 163)

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Maswali

a) Kwa kurejelea vina vya shairi, eleza bahari ya shairi hili. **(alm2)**

b) Eleza maana ya `una mahaba tamaa, wapenda mtu kwa kitu` **(alm2)**

c) Je, msemaji analalamika mambo gani katika shairi? Eleza. **(alm3)**

d) Eleza tabia za mhusika anayezungumziwa katika shairi hili. **(alm3)**

e) Taja na ufafanue tamathali mbili za usemi zilizotumika katika shairi hili. **(alm4)**

f) Eleza dhamira ya mtunzi. **(alm2)**

g) Maneno yafuatayo yameendelezwa kishairi. Yaandike kwa njia sanifu. **(alm4)**

i. Hikwita_____

ii. Kulla_____

iii. Miuja _____

iv. Kuatana_____

SEHEMU B

MAPAMBAZUKO YA MACHWEO

2.Mwandishi wa hadithi ya "mapambazuko ya machweo" uwajibikaji kwa kiasi kikubwa mno. Illihirisha ukweli na kauli hii **(alm20)**

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

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

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

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

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SEHEMU C: NGUU ZA JADI

4. Fafanua madhara ya uongozi mbaya kwa kurejelea riwaya ya Nguu za Jadi. **(al.20)**

AU

0. *"Hakika kila mtu ni mhusika mkuu katika kisa cha maisha yake mwenyewe. "*

a) Fafanua muktadha wa dondoo hili **(alm.4)**

b) Tibithisha ukwell kuwa mrejelewa wa maneno haya allipa hadhlra yake kitu chakuwatla moyo. **(alm16)**

SEHEMU D: BEMBEA YA MAISHA

6. Eleza mambo yanayorudisha bara la Afrika nyuma kulingana na tamthilia ya Bembea ya Maisha **(alm20)**

7. "Unayafanya makubwa bure mwenzangu. Unafahamu vizuri kuwa hiyo si hulka yangu. Sasa mimi nina haja gani kuuvunja mji?"

(a) Eleza muktadha wa dondoo hili **(alm4)**

(b) Bainisha toni ya msemaji **(alm2)**

(c) Msemaji amepitia dhiki mbalimbali katika jamii yake, Tambua dhiki alizopitia **(alm4)**

(d) Onyesha namna maudhui ya mgogoro yanavyojitokeza katika tamthilia nzima **(alm10)**

SEHEMU E: FASIHI SIMULIZI

a. Fafanua maana ya istilahi zifuatazo **(al 5)**

i. Kisasili
ii. Lakabu
iii. Kitendawili
iv. Ushairi simulizi
v. Ngomezi

b.

i. Taja vianzio viwili vya ngano **(al 2)**
ii. Eleza majukumu matatu ya vianzio vya ngano **(al 3)**

c.

i. Eleza sifa mbili za mtambaji bora **(al 2)**
ii. Tambulisha nyiso **(al 1)**
iii. Jadili majukumu mawili ya nyiso katika jamii **(al 2)**

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

ii . Fafanua sifa za misimu **(al 3)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: ……. DATE: ……...

121/1

MATHEMATICS ALT 1

FORM 3

2½ HRS

Instructions

(a) Write your name, class and admission number.

*(b) Answer all the questions in **section I** and **ONLY** Five in **section II.***

(c) Show all the calculations in the spaces provided

(d) KNEC mathematical tables and non-programmable calculators may be used.

For Examiners Use

Section 1

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

Section

11

17	18	19	20	21	22	23	24	Total

Grand total

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

SECTION I

1. Evaluate without using a calculator. **[1Mk]**

$$\frac{(2\frac{3}{7}-1\frac{5}{6})\div\frac{5}{6}}{\frac{2}{3}of\,2\frac{1}{4}-1\frac{1}{7}}$$

2. The equation of a straight line L_1 is $3y + 4x = 12$

i. Find the gradient of L_1 **[1Mk]**

ii. The equation of another line L_2 which is perpendicular to L_1 and passes through (1,2) **[2Mks]**

3. Evaluate using mathematical tables only expressing your answer to 4 significant figures. **[3Mks]**

$$\frac{3}{0.2311} + (0.7918)^2$$

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4.Given that:

$\sin(3x - 35) = \cos(x + 20)$. Find x **[2Mks]**

5.The size of an interior angle of a regular polygon is $(3x)°$ while the exterior angle is $(x - 20)°$. Find the number sides of the polygon **[3Mks]**

6.Three bells ring at intervals of 9 minutes, 15 minutes and 21 minutes. The bells will next ring together at 11.00pm. Find the time the bells had last rung together**.** **[3Mks]**

7.Find all the integral values of x which satisfy the following inequalities **[3Mks]**

$2(2 - x) < 4x - 9 < x + 11$

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8. At a party, every two people shared a plate of Ugali between them. Every 3 people shared a plate of soup and every 4 people shared a plate of meat. If 65 plates were used in total. How many people were there?

[3Mks]

9.Find the value of x which satisfies the equation; **[3Mks]**

$16^{x^2} = 8^{4x-3}$

10. Mary and John live 140km apart. Mary starts from her home at 7.00am and drives towards John's home at 80km/hr. John starts at 7.30am and drives towards Mary's home at 100km/hr. at what tome did they meet?

[3Mks]

11. Two points P and Q have coordinates (-2, 3) and (1, 3) respectively.

A translation maps point P to P^1 (10,10).

a.Find the translation vector **[1Mk]**

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b. Find the coordinates of Q the image of Q under the translation. **[1Mk]**

c. Find the values of M and N if;

$mP - nQ = \begin{pmatrix} -12 \\ 9 \end{pmatrix}$ **[3Mks]**

12. A Kenyan company received $100,000 US dollars. The money was converted into Kenya shillings in a bank which buys and sells foreign currencies as follows;

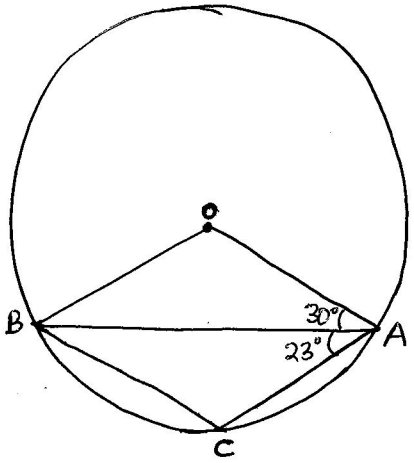
	Buying.	**Selling**
1 US Dollar ($)	77.23	78.11
1 Sterling Pound (£)	121.04	122.93

a. Calculate the amount of money, in Kenya shillings the company received **[2Mks]**

b. The company exchanged the Kenya-shilling calculated in (a) above into sterling pounds to buy a car from Britain. Calculate the cost of the car to the nearest sterling pound. **[2Mks]**

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13. In the figure below, O is the centre of the circle. Angle OAB=30^0 and angle BAC = 23^0. Find angle ABC. **[3Mks]**

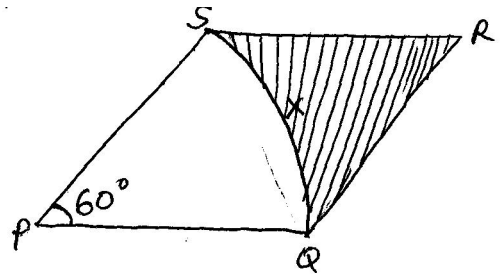


14. A number n is such that when it is divided by 27, 30 or 45, the remainder is always 3. Find the smallest value of n. **[2Mks]**

15. A particle accelerates uniformly from rest and attains a maximum velocity of 30m/s. after 16 seconds. It travels at this constant velocity for 20 seconds before decelerating to rest after another 8 seconds.
Calculate the total distance travelled by the particle. **[4Mks]**

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16. The figure below shows a rhombus PQRS with PQ=9cm and $< SPQ = 60°, S \times Q$ is a circular arc center P.



Calculate the area of the shaded region correct to 2 decimal places. **[3Mks]**

SECTION II

Answer any 5 Questions in this Section. **(50Mks)**

17. A salesman received a basic salary of sh. 50,000 a year together with a commission of 6% on the value of goods sold and a car allowance of sh. 2.50 per km.

a.Find the total amount he received in a year in which he sells goods worth sh. 625,000 and travels 10,000km. **[4Mks]**

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b.The next year he travels 12,000km and receives a total of sh. 134,000.

i. Calculate the value of goods sold. **[4Mks]**

ii. Calculate the percentage increases in the value goods sold. **[2Mks]**

18. The following measurements were recorded in a field book at a farm using XY=400m as the baseline.

	Y	
C 60	340	
	300	120 D
	240	100 E
	200	160 F
B 100	140	
A 120	80	
	X	

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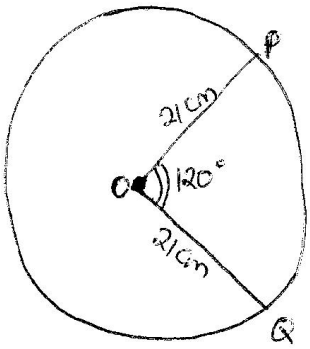
a. Using the scale of 1:4000 (1cm represents 40m) draw accurately the map of the farm. **[4Mks]**

b. Determine the actual area of the farm in hectares. **[4Mks]**

c. If the farm is on sale at Ksh. 80,000 per hectare, how much does the farm cost? **[2Mks]**

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19. The minor arc PQ of a circle radius 21cm subtends an angle of 120^0 at the centre of the circle as shown below.



a. Find the area of the minor sector POQ **[2Mks]**

b. Find the perimeter of the minor sector POQ **[3Mks]**

c. The minor sector POQ is folded to form a right circular cone.

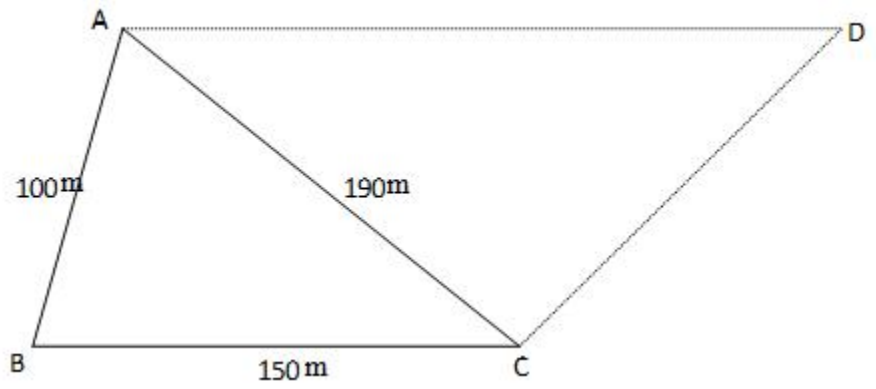
Calculate:

i. The radius of the cone. **[3Mks]**

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ii. The height of the cone. **[2Mks]**

20. A triangular piece of land ABC has sides AB=100m, BC=150m and AC=190m.



a) Calculate the area of the triangular piece of land ABC **[2Mks]**

b) Calculate the value of angle ACB. **[3Mks]**

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c) A new piece of land ABCD is a trapezium with AD//BC whose area is three times that of triangle ABC, calculate the perimeter of ABCD. **[5Mks]**

21. Three business partners, Bela, Joan and Trinity contributed Kshs. 112, 000, Kshs. 128, 000 and Kshs. 210, 000 respectively to start a business. They agreed to share their profits as follows:

30% to be shared equally

30% to be shared in the ratio of their contributions

40% to be retained for the running of the business.

a) If at the end of the year, the business realised a profit of Kshs. 1. 35million

Calculate:

b) The amount of money retained for running the business at the end of the year. **[1Mk]**

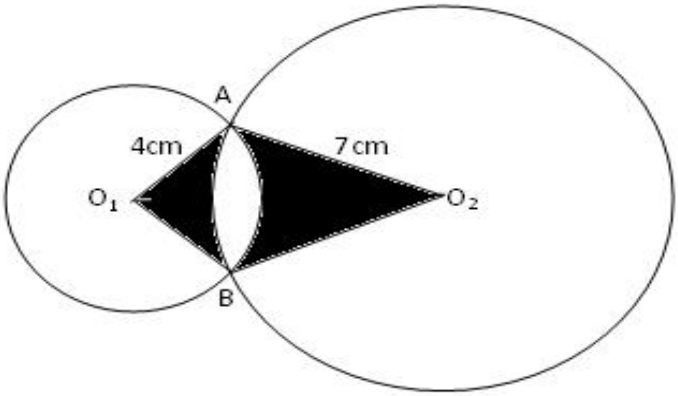
c) The difference between the amounts received by Trinity and Bela. **[6Mks]**

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d) Express Joan's share as percentage of the total amount of money shared between the three partners.

[3Mks]

22. In the figure below, O_1 and O_2 are the centres of the circles whose radii are 4 cm and 7 cm respectively. The circles intersect at A and B and angle $AO_1O_2 = 60^\circ$



Find by calculation; take $\pi = 3.142$

a. The angle AO_2O_1 **[1Mk]**

b. The area of the quadrilateral AO_1BO_2 **[4Mks]**

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c. The shaded area **[5Mks]**

23. Members of a certain group decided to raise sh. 225,000 to buy a plot of land, with each contributing the same amount. Before the due date for collection of the contribution, ten of the members withdrew from the project.

a. Letting n represent the original membership of the group, show that the increase in contribution per member was $\frac{2250000}{n(n-10)}$ **[4Mks]**

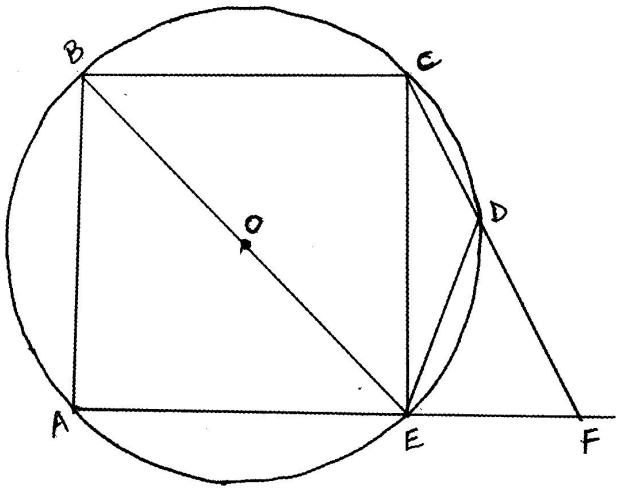
b. If the increase in contribution per person was sh. 1125, what was the original number of members in the group? **[4Mks]**

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c. Calculate the percentage increase in the contribution per person caused by the withdrawal of the members.

[2Mks]

24. In the figure below, O is the center of the circle. $<AEB=50^0$, $<EBC=80^0$ and $<ECD=30^0$



Giving reasons calculate

i. <CDE **[2Mks]**

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ii. <DFE **[2Mks]**

iii. Obtuse <COE **[2Mks]**

iv. <ADE **[2Mks]**

v. <CAE **[2Mks]**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……....……

ADM NO: …….. SIGN: …….. DATE: ……...

121/2

MATHEMATICS ALT 1

2½ HRS

FORM 3

END OF TERM II EXAM

Instructions

(a) Write your name, class and admission number.

*(b) Answer all the questions in **section I** and **ONLY** Five in **section II.***

(c) Show all the calculations in the spaces provided

(d) KNEC mathematical tables and non-programmable calculators may be used.

For Examiners Use

Section 1

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

Section 11

17	18	19	20	21	22	23	24	Total

Grand total

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SECTION I

1. Evaluate using logarithms. **[4Mks]**

$$\frac{\sqrt[3]{0.04689}}{51.64\times 0.793}$$

2. Find the value of k if the expression $4x^2 - 10x + k + 3$ is a perfect square **[2Mks]**

3. A rectangular block has a square base whose sides are exactly 8cm. Its height, measured to the nearest millimeter is 3.2cm. calculate the greatest possible error in calculating its volume **[4Marks]**

4. A matrix is given by $T = \begin{pmatrix} 6 & 5 \\ -3 & 5 \end{pmatrix}$. Find T^{-1} **[2Mks]**

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5. The vectors a, b, c are given as $a\begin{pmatrix}3\\2\end{pmatrix}$ $b\begin{pmatrix}4\\-3\end{pmatrix}$ and $c\begin{pmatrix}0\\4\end{pmatrix}$. Another vector q is such that $q = 2a - 3b + 2c$. Calculate $/q/$ correct to 3 decimal places. **[3Mks]**

6. Simplify by rationalizing the denominator; **[2Mks]**

$\frac{3}{2\sqrt{3}-\sqrt{2}}$

7. A scientific calculator is marked at sh. 1560. Under hire purchase it is available for a downpayment of sh. 200 and six monthly instalments of sh. 250 each. Calculate;

a. The Hire purchase price. **[2Mks]**

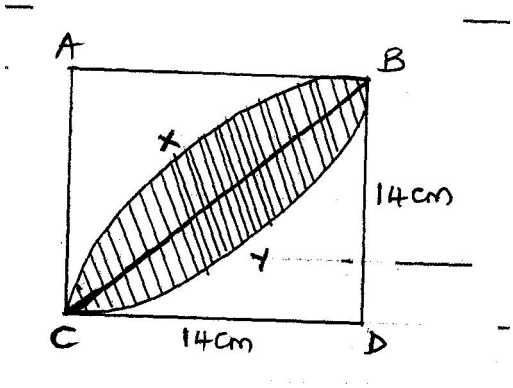
b. The extra amount paid out over the cash price. **[1Mk]**

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8. Solve the equation; **[3Mks]**

$\log(x+24) - 2log3 = \log(9-2x)$

9.In the figure below, ABCD is a square of side 14cm. CXB and CYB are arcs of circle centre A and D respectively. Calculate the area of the shaded region **[3Mks]**

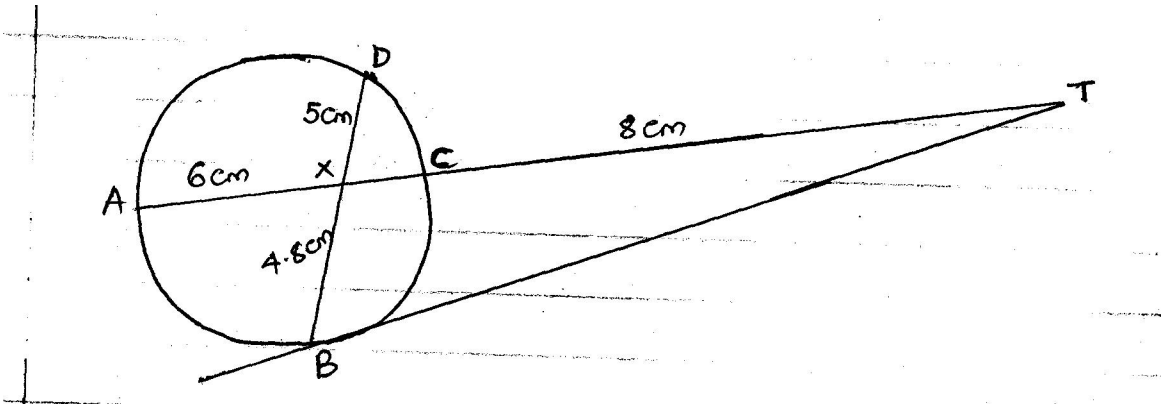


10. Make x the subject of the formula; **[3Mks]**

$p = \frac{a\sqrt{x^2+b^2}}{y}$

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11. In the figure below, BT is a tangent to the circle to the circle at B. AXCT and BXD are straight lines. AX=6cm, CT=8cm, BX=4.8cm and XD=5cm.



Find the length of;

a.XC **[2Mks]**

b. BT **[2Mks]**

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12. Find the value of x if the matrix $\begin{pmatrix} x & 1 \\ 4 & x-3 \end{pmatrix}$ is a singular matrix. **[3Marks]**

13. The first – term of an arithmetic sequence is -7 and the common difference is 4.

a.List the first 6 terms of the sequence **[2Mks]**

b. Determine the sum of the first 30 terms of the sequence **[2Mks]**

14. A manufacturer sells a bottle of fruit juice to a trader at a profit of 40%. The trader sells it for sh. 84 at a profit of 20%. Find.

a.The traders buying price. **[2Mks]**

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b. The cost of manufacture of one bottle. **[1Mk]**

15. ABC is a triangle whose base BC = 35. The point X on BC is such that BX=21cm, AX=16cm and angle AXB=60^0. Calculate;

a. The length of AB **[1Mk]**

b. The length of AC **[1Mk]**

c. The size of angle BAC **[1Mk]**

16. A small cone of height 8cm is cut off from a bigger cone to leave a frustrum of height 16cm. if the volume of the smaller cone is 160cm^3, find the volume of the frustrum. **[3Mks]**

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SECTION II answer ANY 5 questions in this section

(50 marks)

17. The position vectors of A and B with respect to the origin are $\begin{pmatrix}-8\\5\end{pmatrix} and \begin{pmatrix}12\\5\end{pmatrix}$ respectively. Point M is the mid-point of AB and N is the mid-point of OA.

a. Find;

i. The coordinates of N and M **[3Mks]**

ii. The magnitude of NM **[3Mks]**

b. Express vector $\underset{\sim}{NM}$ in terms of OB **[1Mk]**

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c. Point P maps onto P′ by a translation $\begin{pmatrix} -5 \\ 6 \end{pmatrix}$.

Given that OP=OM+2MN. **[3Mks]**

Calculate the coordinates of P′

18. Complete the table below for the function Y=$2x^2 + 4x - 3$

a. **[2 Marks]**

x	-4	-3	-2	-1	0	1	2
$2x^2$	32			1	0		
$4x$							
-3			-3			-3	
y			-3				

b. On the grid provided, draw the graph of the function

$y = 2x^2 + 4x - 3$ for $-4 \leq x \leq 2$ and use your graph to determine the roots of the quadratic equation $2x^2 + 4x - 3 = 0$ to 1 decimal place. **[3Mks]**

c. Use your graph to solve the roots of the quadratic equations.

i. $2x^2 + x - 5 = 0$ **[2Mks]**

ii. $2x^2 + 3x - 2 = 0$ **[2Mks]**

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19. The table below shows the masses to the nearest kilograms of 65 animals in a farm.

Mass in Kg	26-30	31-35	36-40	41-45	46-50	51-55
Frequency	9	13	20	15	6	2

Use the table to find.

a) Modal and median class **[2Mks]**

b) Mean of the data **[3Mks]**

c) The median mass **[3Mks]**

d) The percentage of animals with a mass between 36kg and 45kg. **[2Mks]**

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20.

a. A matrix T is given by $T=\begin{pmatrix}4 & 5\\ 6 & 4\end{pmatrix}$

Find T^{-1} **[2Mks]**

b. Truphena bought 20 bags of maize and 25 bags of beans at a total cost of sh. 77,000. If she had bought 30 bags of maize and 20 bags of beans, she would have spent sh. 7,000 more.

i. Form a matrix equation from this information. **[1Mk]**

ii. Determine the cost of a bag of maize and a bag of beans. **[3Mks]**

c. She sold all the maize and beans at a profit of 10% on a bag of maize and 12 ½ % on a bag of beans. Calculate the total percentage profit. **[4Mks]**

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21. At the beginning of the year 2000, Kanyora bought two houses, one in Thika and the other in Nakuru each at 1,240,000. The value of the house in thika appreciated at a rate of 12% p.a.

a. Calculate the value of the house in Thika after 9 years to the nearest shilling. **[2Mks]**

b. After n years, the value of the house in Thika was 2,741,245 while the value of the house in Nakuru was 2,917,231.

i. Find n **[4Mks]**

ii. Find the annuakl rate of appreciation of the house in Nakuru. **[4Mks]**

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22. The table below shows income tax rates.

Taxable income in k£ per month	**Rate in shs. per k£**
1 – 325	**2**
326 – 650	**3**
651 – 975	**4**
976 – 1300	**5**
1301 – 1625	**6**
Over 1626	**7**

Waketi earns a basic salary of 20,500. He has a house allowance of sh. 6,000 per month, medical allowance of sh. 4,000 per month and transport allowance of sh. 3,000 per month. He claims a tax relief of sh. 1,056 per month.

a. Calculate

i. Waketi's taxable income in k£ per month. **[2Mks]**

ii. Gross tax. **[3Mks]**

iii. Net Tax **[2Mks]**

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b.His net income per month has the following deductions

Health insurance fund – sh. 150

Loan interest – sh. 200

Service charge – sh. 200

Sacco loan – sh. 2,500

Calculate his net income per month. **[3Mks]**

23. P varies directly as the square of Q and inversely as R.

a. If Q increases by 5% and R decreases by 10%, find the percentage change in P **[5Mks]**

b. Given that P=2 when R=5 and Q=4, find the positive value of Q when P=4.5cm and R=5cm. **[5Mks]**

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24.

a. The first term of an arithmetic progression is 2. The sum of the first 8 terms of the AP is 240.

i. Find the common difference of the AP. **[2Mks]**

ii. Given that the sum of the first n terms of the AP is 1,560. Find n **[2Mks]**

b. The 3rd, 5th and 8th terms of another AP from the first three terms of a G.P. If the common difference of the AP is 3.

Find.

i. The first term of G.P **[4Mks]**

ii. The sum of the first 9 terms of the G.P to 4 s.f. **[2Mks]**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……..…….

ADM NO: …….. SIGN: ……. DATE: ……..

232/1

PHYSICS

PAPER 1

TIME: 2 HRS

INSTRUCTION TO CANDIDATES:

1.Write your name and Admission number in the spaces provided.

2.Answer all the questions in the spaces provided.

3.Mathematical tables and electronic calculators may be used.

4.All workings must be clearly shown where necessary.

FOR EXAMINERS USE ONLY:

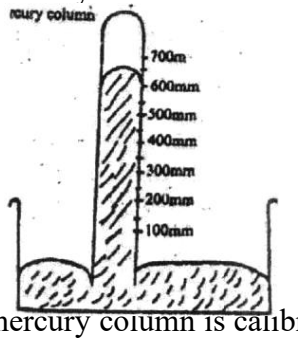
SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A	1 – 13	25	
B	14	14	
	15	08	
	16	11	
	17	12	
	18	10	
TOTAL	**80**		

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SECTION A: (25 MARKS)

Answer all question

1.The figure below shows a mercury column.



Given that the height of the mercury column is calibrated in mm, state the reading of the column height. **(1 mk)**

2.Two springs of negligible weights and of constants K_1=50N/M and K_2=100N/M respectively are connected end to end and suspended from a fixed point as shown in the diagram.



A 200g mass was hung on the lower end.

Calculate the spring constant of the combination. **(2 mks)**

3.A nurse applies a force 30N to syringe. Given that the cross-sectional area of the tip of the needle is $1.0 \times 10^{-7} m^2$, calculate the pressure produced at the tip of the needle. **(2 mks)**

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4.Define diffusion. **(1 mk)**

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5.The pressure exerted by a gas of volume $0.024m^3$ at room temperature is 4.2x105 pa. Determine the pressure at which the volume of the gas reduces to 0.018m3 at the same temperature. **(3 mks)**

6.State principle of moments. **(1 mk)**

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7.Droplets of water sprinkled on greasy glass plate form spherical shapes. Explain. **(1 mk)**

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8.A boy throws a ball of mass 100g vertically upwards to a height of 5m. Calculate the kinetic energy with which the ball leaves the hand.

(2 mks)

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9. Give a reason why a house constructed with concrete beams reinforced with steel does not crack when subjected to temperature changes.

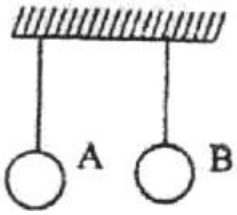
(1 mk)

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10. The figure below shows two balloons inflated with air at room temperature.



Balloon A is painted black and balloon B is painted white. A little amount of ice-cold water is poured on each balloon. State and explain the observation made. **(2 mks)**

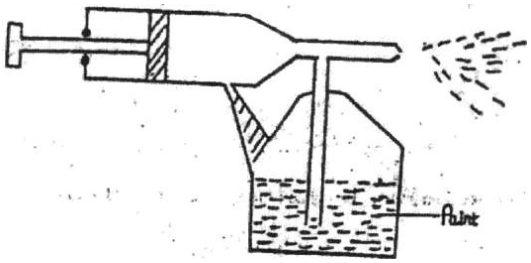
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11. The diagram shows a paint spray gun.



Explain how the gun works. **(3 mks)**

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12. A drop of oil of volume 5.0 x $10^{-3}cm^3$ forms a patch of diameter 35cm on a water surface. Calculate the diameter of a molecule of oil. **(3 mks)**

13. A uniform metre rule pivoted at the 70cm mark balances when a mass of 100g is hung at the 90cm mark. Calculate the mass of metre rule. **(3 mks)**

SECTION B: (55 MARKS)

14. (a) Differentiate between distance and displacement. **(1 mk)**

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(b) A car starts from rest and accelerates uniformly to 15m/s in 5 seconds. It then continues at that speed for 40 seconds and then decelerates uniformly to a stop in 3 seconds.

(i) Sketch the velocity – time graph for the motion. **(3 mks)**

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(ii) Determine the distance covered by the car. **(2 mks)**

(iii) Find the average speed of the car during the journey. **(2 mks)**

(c) A trolley of mass 1.4kg moving at $0.8ms^{-1}$ on a frictionless horizontal surface was acted on by a force of 0.7N. If the resulting speed of the trolley was $1.7ms^{-1}$, determine

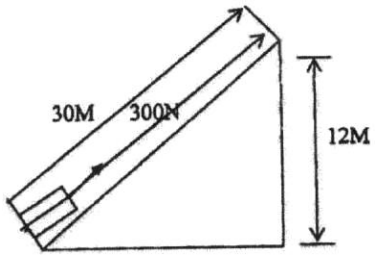
(i) The change of momentum of the trolley. **(2 mks)**

(ii) The time interval the force acted on the trolley. **(2 mks)**

(iii) The acceleration of the trolley. **(2 mks)**

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15. The figure shows a mass of 50kg pulled along an inclined planed by a force of 300N parallel to the inclined plane. The mass moves through a distance of 30m along the plane and rises a vertical height of 12m.



(a) Determine:

(i) The work done on the load. **(2 mks)**

(ii) The work done by the force. **(2 mks)**

(iii) Efficiency of the inclined plane. **(2 mks)**

(b) Give two ways by which the efficiency of the inclined plane can be improved. **(2 mks)**

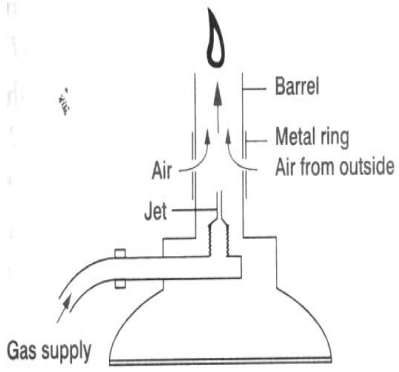
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16. (a) Write the expression for the equation of continuity and define each component of the equation. **(2 mks)**

(b) The figure below shows a Bunsen burner in operation with the air hole open.



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(i) Explain how the air is drawn into the barrel when the gas supply is opened. **(2 mks)**

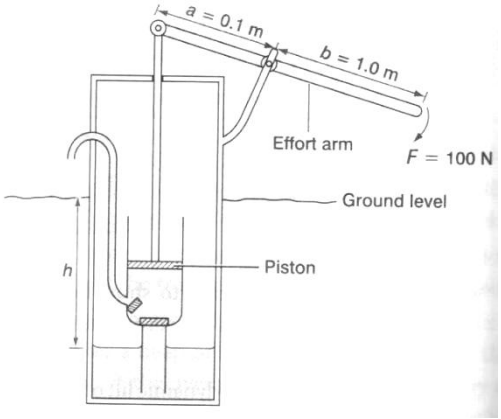
(ii) What is the purpose of the metal ring? **(2 mks)**

(c) A pipeline is 15cm in diameter at one point and 7.6cm in diameter at another point. If the speed of water in the wider section is 1.2m s^{-1}, determine:

(i) The speed of water in the narrow section. **(3 mks)**

(ii) The rate of discharge. **(2 mks)**

17. (a) The diagram below shows a water pump designed to raise water from a well.



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Take a=0.1m, b=1.0m, F=100 N, the diameter of the piston = 5cm, g=10 N kg^{-1} and the density of water = 1.0 x 10^3 kg m^{-3}.

(i) Determine the maximum force on the piston when a force of 100 N is applied at the end of the effort arm during the downward stroke. **(3 mks)**

(ii) Calculate the maximum pressure exerted by the piston on the water. **(4 mks)**

(iii) Determine the maximum height to which the water can be raised. **(2 mks)**

(b) The height of a mercury barometer at a place is found to be 58 cm. what is the atmospheric pressure at the place? (Density of mercury is 1.36 x 10^4 kg m^{-3}.) **(3 mks)**

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18. (a) In an experiment to demonstrate Brownian motion, smoke was put in an air cell and observed under a microscope. Smoke particles were observed to move randomly in the cell.

(i) Explain the observation. **(1 mk)**

(ii) Give a reason for using small particles such as those of smoke in this experiment. **(1 mk)**

(iii) What would the most likely observation be if the temperature in the smoke cell was raised? **(1 mk)**

(b) An oil drop of average diameter 0.7mm spreads out into a circular patch of diameter 75cm on the surface of water in a trough.

(i) Calculate the average thickness of a molecule of the oil. **(4 mks)**

(ii) State two assumptions made in (b) (i) above when calculating the thickness of the oil molecule. **(2 mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……..

SCHOOL: ……....…….

ADM NO: …….. SIGN: ……. DATE: ……..

232/2

FORM THREE PHYSICS PAPER 2

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1.Write your name, admission number and class in the spaces provided
2.This paper consists of TWO sections: section A and B
3.Answer all question in the both section A and B in the spaces provided
4.Mathematical tables and electronic calculators may be used
5.All working MUST be clearly shown.
6.Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.
7.Candidates should answer the questions in English.

SECTION A: (25 MARKS)

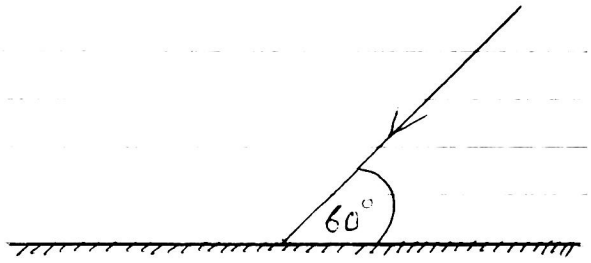
1.Under which condition is the potential difference across the terminal of a cell equal to its e.m.f? **(1mk)**

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2.The figure below shows a ray of light incident on a plane mirror



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Determine the angle of reflection when the mirror is rotated 10^o anticlockwise **(2mks)**

3.A soldier standing some distance from a wall blows a whistle and hears its echo 1.8 seconds later. How far is the wall from the soldier? (Speed of sound in air = $330ms^{-1}$) **(3mks)**

4.Other than temperature, state any other factor that affects the resistance of an ohmic conductor **(1mk)**

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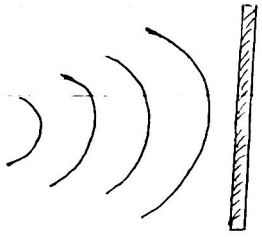
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5.Using the domain theory, differentiate between magnetic and non-magnetic materials **(1mk)**

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6.The figure below shows circular waves approaching a plane barrier.



On the same diagram, sketch the reflected rays **(1mk)**

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7.State one application of the following: **(2mks)**

a) Convex mirrors

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b) Parabolic mirrors

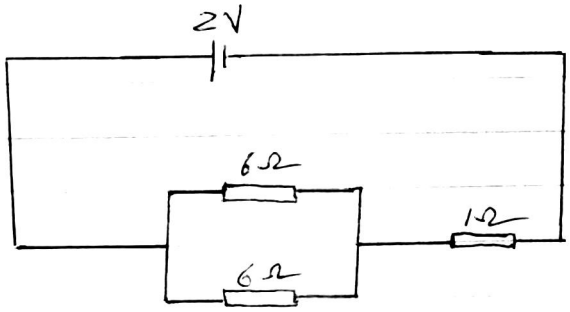
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8.A pin is placed below the surface of transparent water of depth 10cm and refractive index 1.33. Calculate the vertical displacement of the pin **(3mks)**

9.The figure below shows an arrangement of resistors in a circuit.



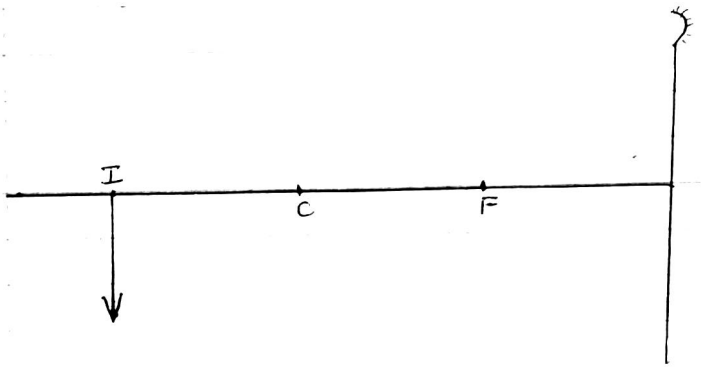
Determine:

a) The effective resistance **(2mks)**

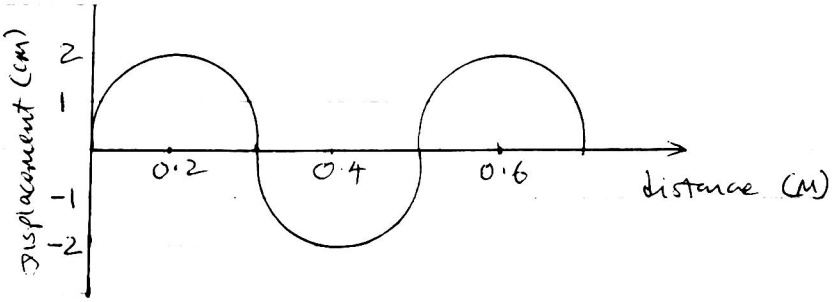
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b) The voltage drop across the 1Ω resistor **(3mks)**

10. The figure below shows the image I formed by a concave mirror. Using ray diagrams, locate the position of the object **(3mks)**



11. The figure below shows a displacement-distance graph of a wave travelling at $2ms^{-1}$



Determine:

a) The amplitude **(1mk)**

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b) The wavelength **(1mk)**

c) The frequency of the waves **(2mks)**

SECTION B (55MARKS)

12. a) Draw the electric field pattern between the charges shown below **(2mks)**



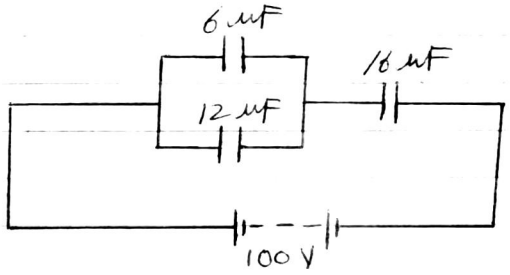
b) State two factors that affect the capacitance of a parallel plate capacitor **(2mks)**

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c) The figure below shows a network of resistor connected to a 100V power source.



Determine:

i) The effective capacitance of the circuit **(3mks)**

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ii) The charge on the 16*uF* capacitor **(3mks)**

iii) The p.d. across the 12*uF* capacitor **(3mks)**

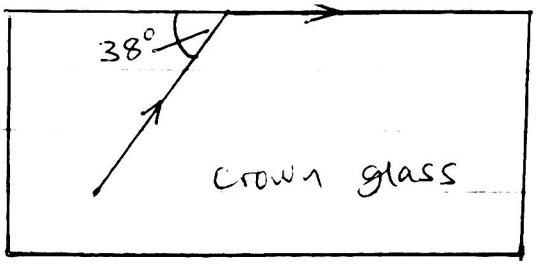
13. a) State the Snell's law of refraction of light **(1mk)**

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b) The figure below shows a ray of light travelling from crown glass to air.



Determine:

i) The refractive index of crown glass **(3mks)**

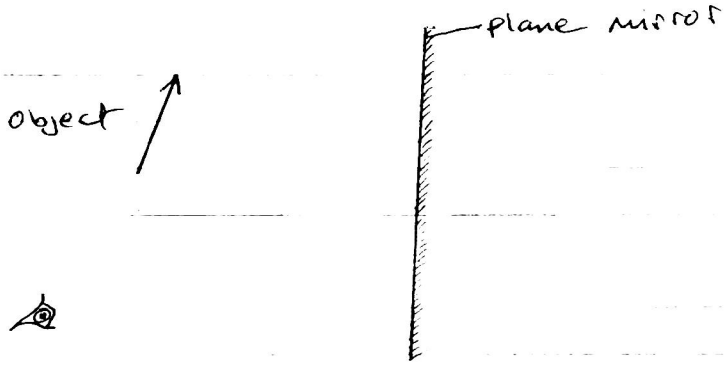
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ii) The speed of light in crown glass. **(3mks) (Speed of light in air = $3.0x10^8ms^{-1}$)**

c) i) What would be the effect on the image of increasing the length of a pinhole camera? **(1mk)**

iii) A girl stands 5m in front of a pinhole camera of length 50cm. If the girl is 1.2m tall, determine the size of her image as formed by the pinhole camera **(3mks)**

d) The figure below shows an object in front of a plane mirror. Using rays, locate the image as seen by the eye shown **(3mks)**



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14. a) State the Ohms law **(1mk)**

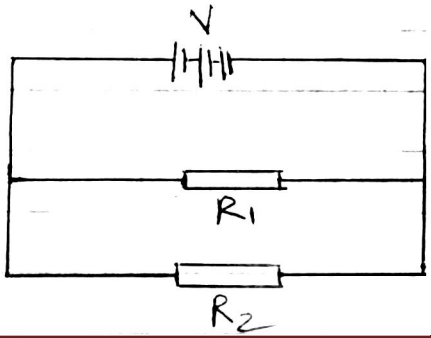
b) State the effect on the resistance of a conductor when the conductor is heated **(1mk)**

c) Three identical dry cells each of e.m.f 1.6V are connected in series to a resistor of resistance 11.4Ω. If a current of 0.32A is flowing through the circuit, determine:

i) the total e.m.f of the cells **(1mk)**

ii) the internal resistance of each cell **(3mks)**

d) The figure below shows resistors R_1 and R_2 connected in parallel. Their ends are connected to a battery of potential difference V volts.



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i) In terms of V_1, R_1 and R_2, write an expression for:

I) Current I_1 through R_1 **(1mk)**

II) Current I_2 through R_2 **(1mk)**

III) Total current in the circuit **(1mk)**

ii) Show that the total resistance R_T is given by **(3mks)**

$$R_T = \frac{R_1R_2}{R_1+R_2}$$

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

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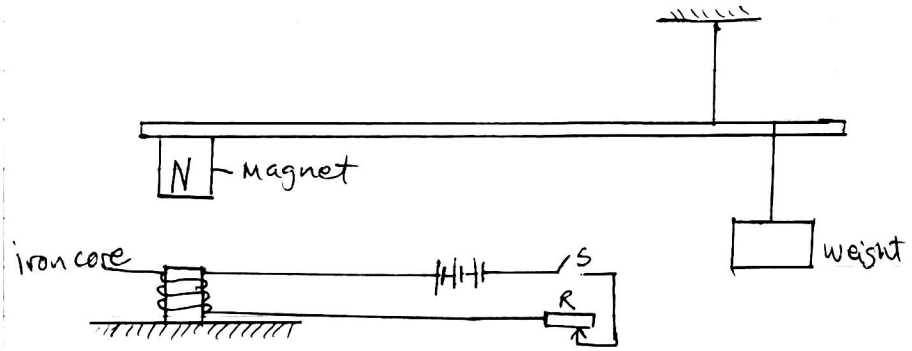
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c) In the set up shown below, the suspended metre rule is balanced by the magnet and the weight shown. The iron core is fixed to the bench.



i) State and explain the effect on the metre rule when the switch is closed **(3mks)**

ii) What is the effect of reversing the battery terminals? **(1mk)**

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d) State one defect of a simple cell and how it is corrected **(2mks)**

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16. a) Differentiate between transverse and longitudinal waves **(2mks)**

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b) State two conditions necessary for two progressive waves travelling in the opposite direction to form stationary waves **(2mks)**

c) A wave has a periodic time of 0.2 seconds and a distance of 30cm between successive troughs. Determine the speed of the wave **(3mks)**

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BRILLIANT STUDENTS FORM 3 END TERM 2 SERIES 1 EXAMS

NAME: ……...

SCHOOL: ……..……

ADM NO: …….. SIGN: ……. DATE: ……..

FORM3 TERM 2

PHYSICS PAPER 3

INSTRUCTIONS TO THE CANDIDATES:

- Write your **name** and **index number** in the spaces provided above.
- Answer ***all*** questions in the spaces provided in the question paper.
- You are supposed to spend the first 15 minutes of the 2 ¼ hours allowed for this paper reading the whole paper carefully.
- Marks are given for a clear record of the observation actually made, their suitability, accuracy and the use made of them.
- Candidates are advised to record their observations as soon as they are made.
- Mathematical tables, slide rules and calculators may be used.
- Record your observations as soon as you make them.

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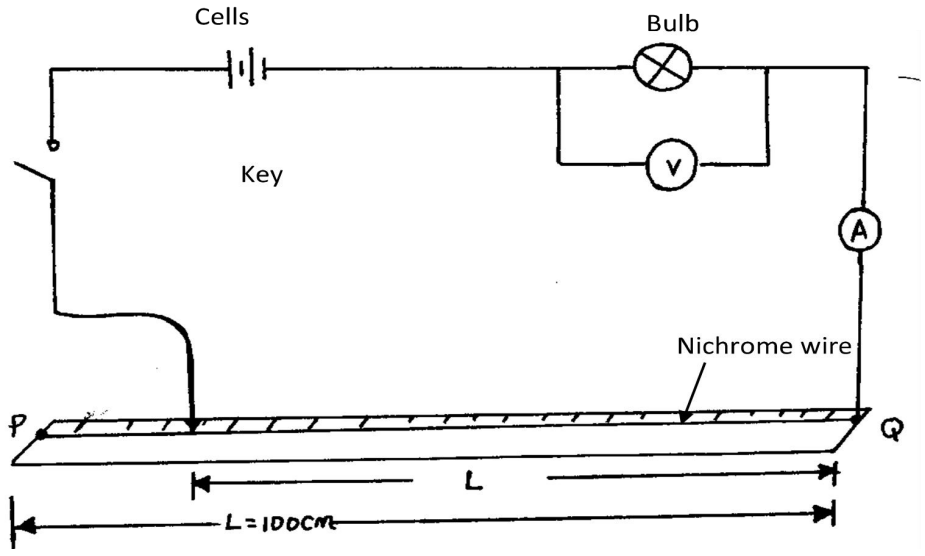
QUESTION 1

You are provide with the following;

- Two dry cells
- One bulb
- Voltmeter (0 – 3 v or o – 5v)
- Ammeter (0 – 2.5A)
- A mounted nichrome wire on millimetre scale;
- Switch
- Seven connecting wire at least two with crocodile clips.
- Micrometer screw gauge

Procedure as follows;

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



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ii) With the crocodile clip at P take the voltmeter reading and the ammeter reading. Record V and I. Repeat the readings for L = 80,60,40,20 and 0 cm respectively. Complete the table below;

Length L (cm)	100	80	60	40	20	0
Voltage V (v)						
Current, I (A)						

(4mks)

(iii) What changes do you observe on the bulb as L decreases from P ? **(1mk)**

(iv) Plot a graph of the ammeter reading (y = axis) against voltmeter reading **(5mks)**

v) Determine the slope of your graph at V = 1 volt **(3mks)**

(vi) What physical quantity is represented by the slope of the graph at any given point.? **(1mk)**

b) (i) Given the apparatus in a (i) above, draw a diagram of the a circuit you would use to determine the current through the resistance wire and the potential difference across it. **(1mk)**

(ii) Set up the circuit you have drawn. Record the ammeter reading I and the voltmeter reading

V, when L = 100cm. **(2mks)**

V = …….

I = ……..

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(iii)Using a micrometer screwgauge, measure the diameter d of the wire. **(1mk)**

d = **……**m

(iv) Calculate the quantity,

p = 0.785 $\left(\frac{V}{I}\right)\left(\frac{d^2}{L}\right)$ and give its units, where L is one metre. **(2mks)**

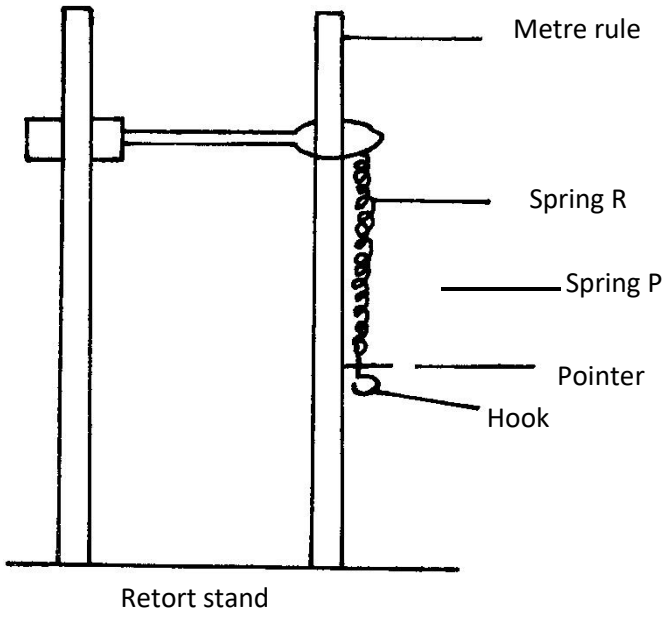
QUESTION2. You are provided with the following;

- A Complete retort stand
- A Stop watch/stop clock
- A Metre rule
- Two identical springs labeled R and P.
- A Weighing balance (to be shared)
- A Set of masses 10g, 20g, 50g and 100g
- A Pendulum bob

Proceed as follows

a. Join springs R and P in parallel so that it has only one hook at one end and then arrange the apparatus as shown in the figure below.

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Note and record the initial pointer reading.

Initial pointer reading = ……..……cm mark.

(This mark should be maintained throughout the experiment)

b. Hang the 30g mass on the hook of the combined spring balance and record the final pointer reading. Hence calculate the extension, e, for m = 30g.

c. With mass, m = 30g, still suspended, slightly displace the mass vertically and time 20 complete oscillations

d. Repeat the experiment for m = 50, 70, 100, 120 and 150g and record your results in the table below.

Mass m (g)	Extension *e* (cm)	*e* (m)	Time, *t*, for 20 complet oscillations	Periodic time, T	$T^2(s^2)$
30					
50					
70					
100					
120					
150					

(7mks)

e. (i) On the grid provided, plot a graph of e(x – axis) against T^2 **(5 mks)**

ii) determine the slope, S, of the graph. **(2 mks)**

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f. If the experiment obeys the law $T = 2\Pi\sqrt{\frac{e}{k}}$ where k is a constant, determine the value of k ($\Pi = 3.142$)

(2 mks

g. Weigh and record the mass of the pendulum bob provided.

Mass, m of pendulum bob = **……..……..g = ……..…….kg** **(1 mk)**

h. Suspend the pendulum bob on the combined spring balance and note the extension produced.

extensione_1= **…….……..cm = ……..……..m** **(1 mk)**

i. If $\nu = \frac{mg}{e}$ where m = mass of the pendulum bob and e is the extension produced, find the value of ν where ν is the elastic constant of the springs. **(2 mks)**

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