KCSE POSTMOCKS

ALL SUBJECTS SET 2

Dear Candidates, Attempt these KCSE Postmocks!

For Marking Schemes Call 0705525657

443/1

AGRICULTURE

Paper 1

Time : 2 Hours
SECTION A (30 MKS)

Answer all the questions in this section in the spaces provided

1.State three characteristic of shifting cultivation.   **(1 1/2mks)**

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2.State any four factors that determine the spacing of a crop .   **(2mks)**

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3.State two conditions under which the opportunities cost is zero in a farming practice.

(11/2mks)

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4.Give two activities carried out during hardening off tomatoes seedling **.**   **(2mks)**

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5.State three benefits of minimum tillage in crop production .   **(1 1/2mks)**

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6.Differrentiate between Olericulture and Pomoculture as used in crop production.**(1mks)**

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7.Name three negative effects of strong wind on Agriculture .   **(1 1/2mks)**

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8.Differentiate between hybrid and composite as used in crop production **.**   **(1mk)**

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9.Name three reasons for treating water in the farm.   **(1 1/2mks)**

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10.Outline four disadvantages of communal land tenure system**.**   (**2mks**)

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11.List three aspects of light that influence crop growth .   (**1 1/₂mks**)

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12.List three reasons for conserving forage.   (**1 1/₂mks**)

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13.Name four factors that influence soil erosion.   (**2mks**)

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14.What is integrated pest management**.**   (**1mk**)

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15.Name four types of water pumps which can be used in the farm **.**   (**2mks**)

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16. Statefour factors that determine the stage at which a grain crop is ready for harvesting .

(1 1/$_2$mks)

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17. Name four methods of farming**.**   **(2mks)**

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18 .State two crop production practices that can be carried out to maintainoptimumplant population**.**   **(1mk)**

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

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SECTION B (20 MARKS)

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

20 . A farmer has four plots P1,P2,P3,& P4 as shown in the table below .

P1	P2	P3	P4
Infested with Bacteria wilt	Deficient in Nitrogen	Infested with witch grass(strigaspp)	Prone to soil erosion

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a)A Farmer intends to grow Maize ,Irish potatoes ,beans and Rhodes grass .plan a rotation for the first year of the rotation system**.**   **(2mks)**

b)Account for the plan above **.**   **(4mks)**

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21)Study the illustration below and answer the question that follow.
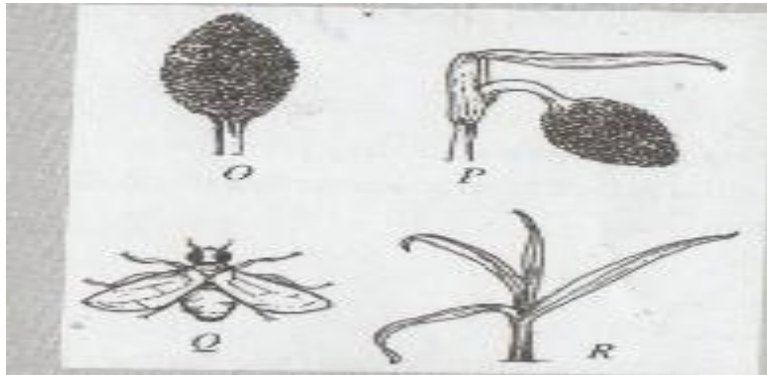
a)Name the varieties which is resistantto bird attack **.**   **(1mk)**

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

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c)Identify pest Q which has attacked sorghum seedling labeled R**.**   **(1mk)**

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d).State two methods that are used in controlling birds in a field of sorghum**.** **(2mks)**

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22.Below is a diagram of a crop pest .

a) Identify the pest in the diagram **.** **(1mk)**

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b) Suggest two ways of controlling the pest **.** **(2mks)**

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c) Name any two diseases of cabbages. **(2mks)**

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d) Give three advantages of training in crops. **(3mks)**

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SECTION C (40 MARKS

**Answer any two questions in this section in the space provided.**

23.a)Outline ten harmful effects of crop pest **(10mks)**

b)Statethe effect of land fragmentation **(10mks)**

24.Describe the production of tomatoes under the following sub heading :

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I.   Ecological requirement **(3mks)**
II.   Land preparation **(4mks)**
III. Transplanting (4mks)
IV.   field management practices**(3mks)**

b) Outline six importance of crop rotation.**(6mks)**

25.a)outline ten safety precations when using Herbicides.**(10mks)**

b)state and explain biotic factors that influence agriculture.**(10mks)**

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KCSE POSTMOCKS SET 2

443/2
AGRICULTURE
Paper 2
Time: 2 Hours
SECTION A (30MKS)

Answer all questions in this section in the spaces provided

1. Name a breed of goat that is brown in colour with two white stripes running from the eyes to the nose. (1mk)

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2. State three methods a farmer can use to control livestock diseases (1 ½ mks)

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3. State three factors that determine livestock distribution in Kenya. (1 ½ mks)

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4. State four factors that determine the nutritional requirement of an animal. (2mks)

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5. Give four reasons for breeding in livestock. (2mks)

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6. State four importance of feeding colostrum to calves.   (2mks)

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7. Give the function of each of the following female reproductive organs in poultry.

   a) Isthmus   (½ mk)

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   b) Magnum   (½ mk)

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   c) Infundibulum   (½ mk)

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   d) Vagina   (½ mk)

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8. Name one vector that transmit each of the following diseases.

   a) Anaplasmosis   (½ mk)

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b) East coast fever   (½ mk)

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c) Tryponosomiasis   (½ mk)

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9. Differentiate between incubation period and mortality rate as used in livestock health.

(1mk)

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10. Give one protozoan disease which is not transmitted by a vector.   (½ mk)

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11. (a) List four main sources of electrical power.   (2mks)

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(b) Name the part of the tractor where trailed implements are attached.   (1mk)

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12. Name the tools for carrying out each of the following activities.

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

a) One tool for tightening wires during fencing. (1mk)

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b) Four tools used when laying concrete blocks during construction of a wall. (2mks)

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13. State four factors considered when formulating livestock ration. (2mks)

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14. State six management practices in fish rearing. (3mks)

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15. State one use of sledge hammer. (1mk)

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16. Give three reasons for feeding bees. (3mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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SECTION B (20MKS)

Answer all questions in this section in the spaces provided.

17. Diagrams M, N, P and Q show some structures used in apiculture. Use them to answer the questions that follow.
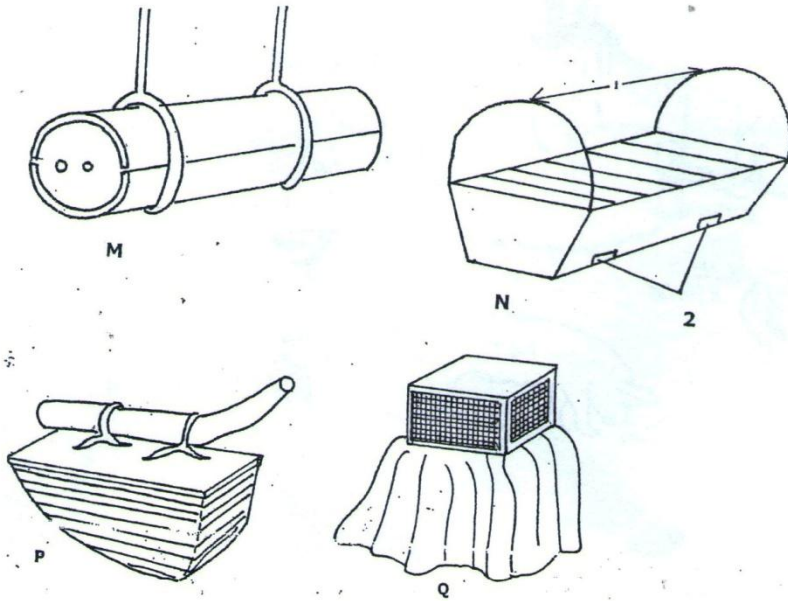
a) Identify the structures labelled M, N, P and Q.   (2mks)

M...

....

N...

....

P...

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Q..
......

b) State the uses of equipments P and Q.   (2mks)

P..
....

Q..
....

c) State two advantages of structure N over structure M.   (2mks)

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d) State the uses of the parts labelled 1 and 2 on structure N.

(2mks)

1. ....
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2. ....
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18. The illustration below shows a life cycle of an internal parasite.
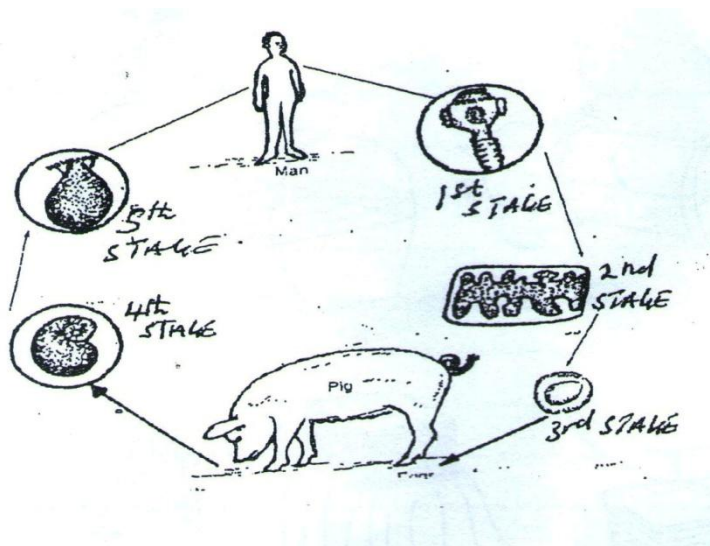
a) (i) Identify the parasite. (1mk)

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(ii) How is the parasite passed from livestock to man. (1mk)

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b) Give the form in which the parasite is found in livestock's muscle. (1mk)

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c) State the method used to control the parasite at the 5th stage. (1mk)

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19. The illustrations below show farm tools.
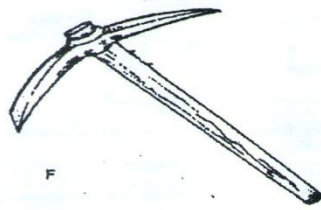
a) Identify the tools labelled F and G.

F.. (1mk)

G.. (1mk)

b) Give one use of the tools above. (2mks)

F..

G..

20. The diagrams N_1 and N_2 below show the fingers fitted between pelvic bones as a practice used in examining layers during culling.
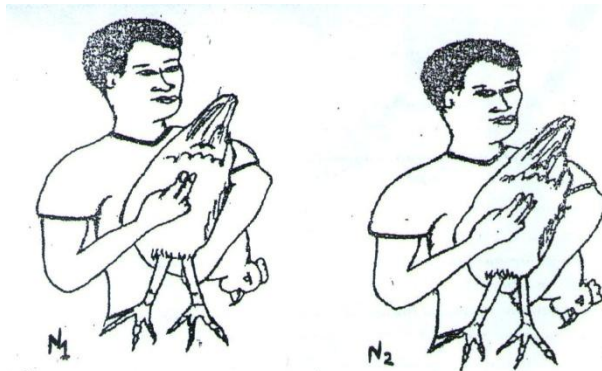
a) Which layer would be culled? (1mk)

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b) Give two other characteristics that can be examined when culling. (2mks)

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c) Other than using the characteristics of a layer, give another method that can be used to cull layers. (1mk)

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SECTION C (40 MARKS)

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

21. a) Describe the management of pigs under the following sub-headings.

   i.   Flushing and service (6mks)

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   ii.   Management before and during farrowing.

              (10mks)

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b) State four effects of mineral imbalance in livestock   (4mks)

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22. a) State five factors to consider when selecting construction materials. (5mks)

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c) Explain the procedure followed when constructing a barbed wire fence. (8mks)

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c) Describe seven characteristics of Hampshire down breed of sheep.   (7mks)

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23. a) Describe six advantages of farm mechanization. (6mks)

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b) Outline the factors that stimulate milk letdown in dairy cattle. (7mks)

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c) Describe life cycle of a two host tick. (7mks)

<u>KCSE POSTMOCKS SET 2</u>
<u>Kenya Certificate of Secondary Education KCSE)</u>

BIOLOGY PAPER 1

1. Name the blood vessel that suppIies:

    (a) The heart with nutrients.

        (1mk)

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(b) The foetus with oxygen

        (1mk)

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2. Explain why it is important to stain specimen to be observed under a light microscope.

    (2mks)

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3. What is wilting?

    (2mks)

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4. State the significance of the following steps while testing for disaccharide in food sample.

    (2mks)

  (a) Addition of dilute hydrochloric acid

…….

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(b) Addition of sodium bicarbonate.

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5. a) (i) Name the fluid produced by sebaceous gland.

(1mk)

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(ii) State **two** function of the fluid name in 5 a) (i) above.

(2mks)

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b) Explain how malpighian layer of the skin is adapted to perform its function.

(1mk)

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6. A certain animal had one cell from its alimentary canal observed under light microscope. A total of 40

chromosomes were seen.

(a) State the number of chromosomes in

(i) The spermatozoan of this animal

(1 mk)

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(ii) One of cells in the tongue.

(1mk)

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  (b) Name a structure in mature plant where meiosis takes place.
(1mk)

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7. A biological washing detergent contain enzymes which remove stain like mucus and oil from clothes which are soaked in water with the detergent.

    (a) Explain why stain would be removed faster with detergent in water at 35°C rather than 50°C
        (1mk)

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…….

    (b) Why is boiling clothes with the detergent less likely to remove stain.
        (1mk)

    (c) Name an enzyme that catalyses the decomposition of sodium hydrogen carbonate to facilitate transportation of carbon (IV) Oxide.
(1mk)

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8. Form 2 students from samba secondary school set up an experiment as shown below.

A Beginning of experiment   B   End of experiment
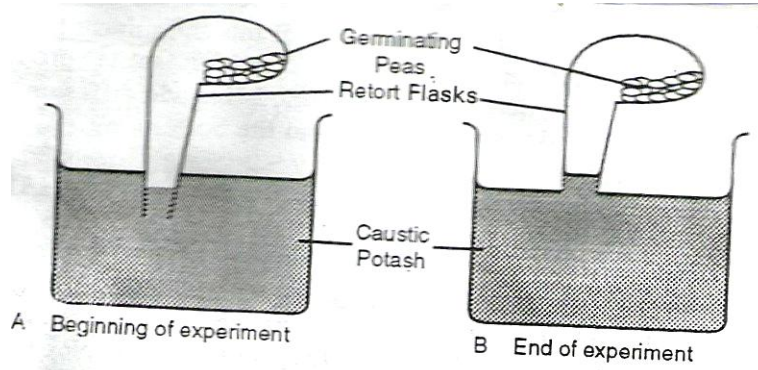
(a) Explain the change observed at the end of the experiment.

(2mks)

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a) Explain what would happen if water has been used instead of potassium hydroxide.

(2mks)

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9. State **two** advantages of metamorphosis to the life cycle of insects.

(2mks)

10. The concentration of lactic acid in blood during and after an exercise was determined. The results
are shown in the graph below.
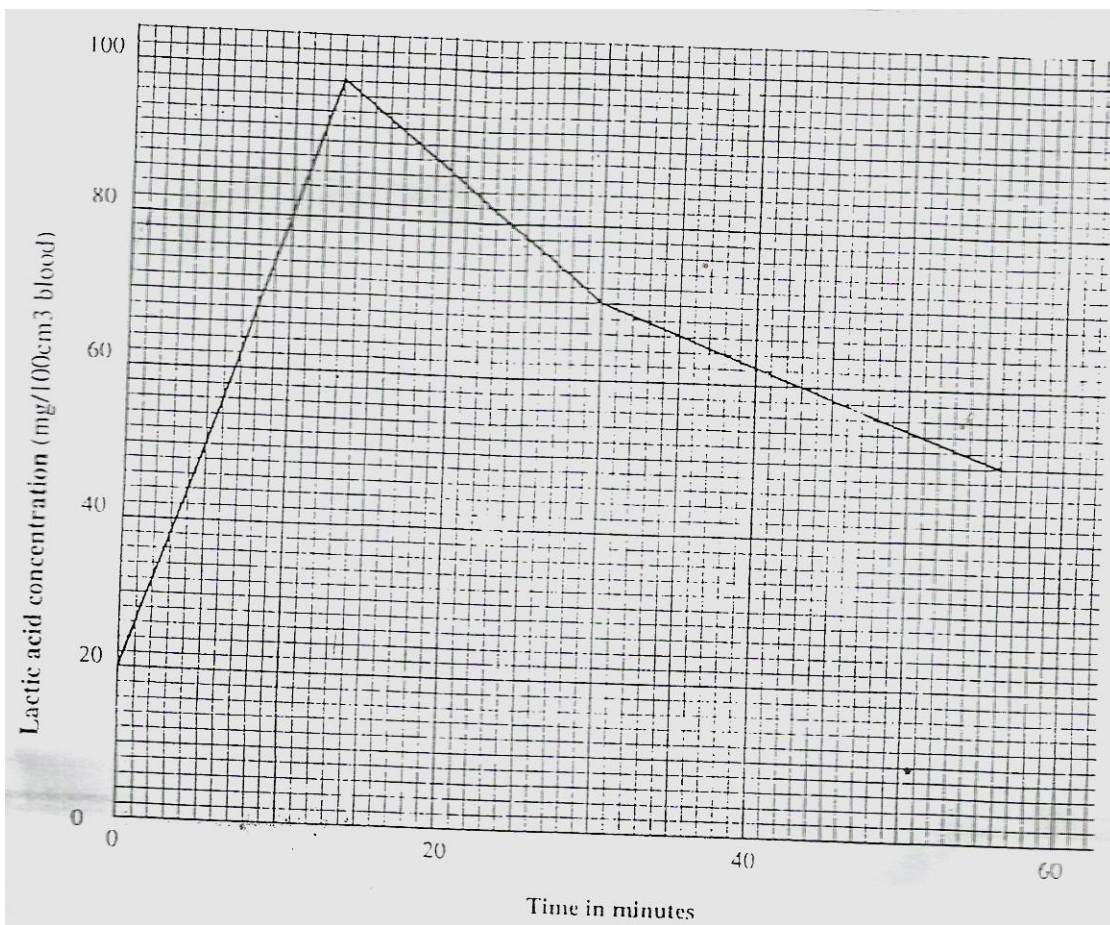
(a) (i) By how much did the lactic acid increase at the end of 10 minutes?
(1mk)

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(ii) After how many minutes was the lactic acid concentration 78mg/100cm^3
(2mks)

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       (iii) What would be the concentration of lactic acid at the 60th minutes.
         (1mk)

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  (b) Give a reason for the high rate of production of lactic acid during the exercise.
        (1mk)

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11. Name the part of human brain that perform the following function
(2mks)

       (a) Controls peristalsis

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       (b) Control intelligence

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12. Outline the differences between Darwin's theory and Lamarck's theory of evolution.
(2mks)

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13. Give **three** functions of cystokinin hormone in plant .
(3mks)

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14. Explain why plants do not require specialized excretory organ.
(3mks)

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15. The diagram below represents a stage in cell division.\
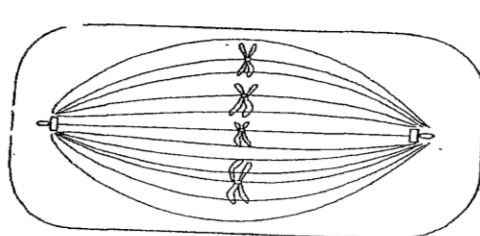
(a) Identify the stage of cell division
(1mk)

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(b) Give a reason for your answer
(1mk)

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16. Outline **three** functions of colon .
(3mks)

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17. State **two** advantages of closed circulatory systems in mammal.
(2mks)

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18. Explain what happens to excess amino- acids in the liver of humans   (3
Mks)

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19. (a) Which portions of the human nephron are only found in the cortex?
(3 mks)

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(b) (i) What would happen if a person produced less antidiuretic hormone?   (2 marks)

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(ii) What term is given to the condition described in (b) (i) above
(1 mark)

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20. Explain double fertilization as used in flowering plants.

(2mks)

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21. State one survival value for each of the following in plants
(*1mark)*

a) Haptotropism in stems

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………………………………………………………………………………………………………

(*1mark)*
b) Thigmonasty in *Mimosa pudica*

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………………………………………………………………………………………………………

c) What is meant by the term polyploidy?
(*1mark)*

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d) Give an example of a genetic disorder caused by non-disjunction in somatic cell

(1mark)

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22. (a) Explain how mammalian trachea is adapted to its function
(2mks)

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(b) Name the gaseous exchange site in bony fish.

(1mk)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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23. Explain the role of the following hormone in homeostasis

    (a) Insulin

        (3mks)

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        …………….

    (b) Aldosterone hormone when there is less water in blood stream.   (2mks)

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24. Outline **three** difference between plant divisions Bryophyta and Pteridophyta   (3mks)

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25. Name **two** products of light stage of photosynthesis that are useful in light independent stage.

        (2mks)

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26. State **two** functions of xylem tissue.

        (2mks)

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        …………….

27. State **two** function of golgi apparatus

        (2mks)

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KCSE POSTMOCKS SET 2
Kenya Certificate of Secondary Education KCSE)

BIOLOGY PAPER 2

SECTION A

1. The following is an illustration of a certain process that occurs in mammals
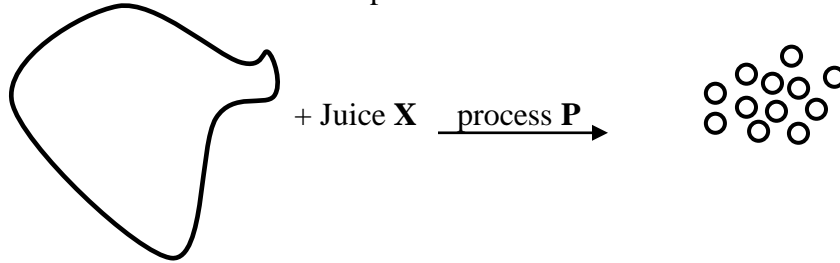
+ Juice **X**   process **P**

A fat molecule

(a) Name process **P**……………………………………………………… (1mark)

(b) Name the juice involved in the process **P**

…………………………………………………………………… (1 mark)

(c) List two Salts found in the juice name in (b) above that aids in process **P**   (2 marks)

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(d) Give a reason why liver damage leads to impaired digestion of fats   (1 mark)

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(e) What would be the likely effect on digestion if the small intestine of a human is reduced in an operation?   (2 marks)

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(f) State the fate of excess glucose in the human body. (1 mark)

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2. The diagrams below shows samples of blood obtained from two different persons **A** and **B.**
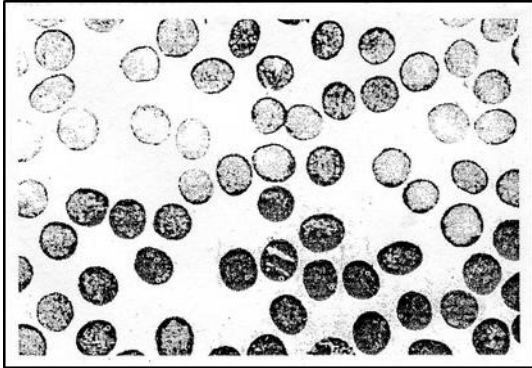
Blood sample from person **A**   Blood sample from person **B**

a) What genetic disorder is person **B** suffering from? (1 mark)

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(b) State one advantage and one disadvantage of the disorder in (a) above when its in heterozygous state. (2 marks)

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(c) Work out the genotypes and phenotypes of the resulting offsprings of marriage between person **A** and person **B** (5 marks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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3. The diagram below represents the pathways of water from the soil into the plant.
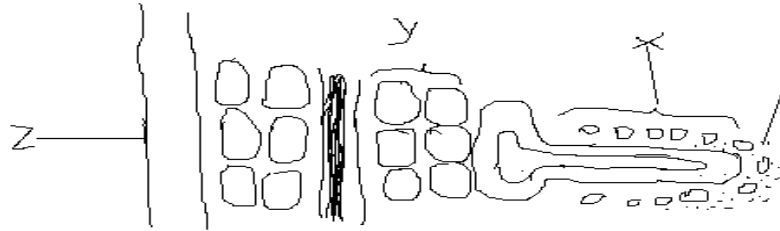
(a)Name the parts X, Y and Z.   (3marks)

X..

...Y...

...Z...

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(b) Explain how water moves from point X to Z. (5mks)

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4. During an ecological study of a grassland ecosystem, a group of students recorded the

following observations.

i.   Grasshoppers feed on grass
ii.   Guinea fowls feed on grasshoppers, termites
iii.   Vultures feed on guinea fowls and leopards
iv.   Leopards feed on gazelles
v.   Termites feed on grass
vi.   Gazelles feed on grass

(a) From this record of observations construct a food web.   (4 marks)

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(b) Write down, the food chains in which the guinea fowls are secondary consumers.
(2 marks)

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(c) Name the organisms through which energy from the sun enters the food web.
………………………………………………………………………………………(1 mark)

(d) Name the organism that has the least biomass in the food web.   (1mark)

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5. Below is a chemical equation, study it and answer the questions that follow:-

Carbon (IV) oxide + water $\underset{B}{\overset{A}{\rightleftharpoons}}$ Oxygen + glucose
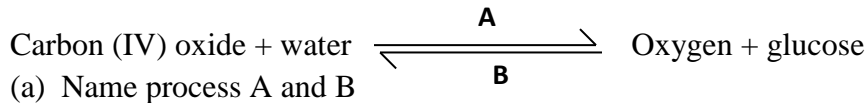
(a) Name process A and B   (2 marks)

A……………………………………………………………

 B……………………………………………………………

(b) What is the biological significance of process **A**   (1 mark)

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(c) In which organelle does process **A** and **B** take place?   (2 marks)

 A……………………………………………………….

 B……………………………………………………….

 (d) Name two stages of process **B**   (2 marks)

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(e) Define compensation point   (1mark)

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SECTION B (40 MARKS)
Answer Question 6 (Compulsory) And Either Question 7 Or 8 In The Spaces Provided
After Question 8

6. The graph below shows changes in pH and oxygen saturation in river water over a 24 hour period
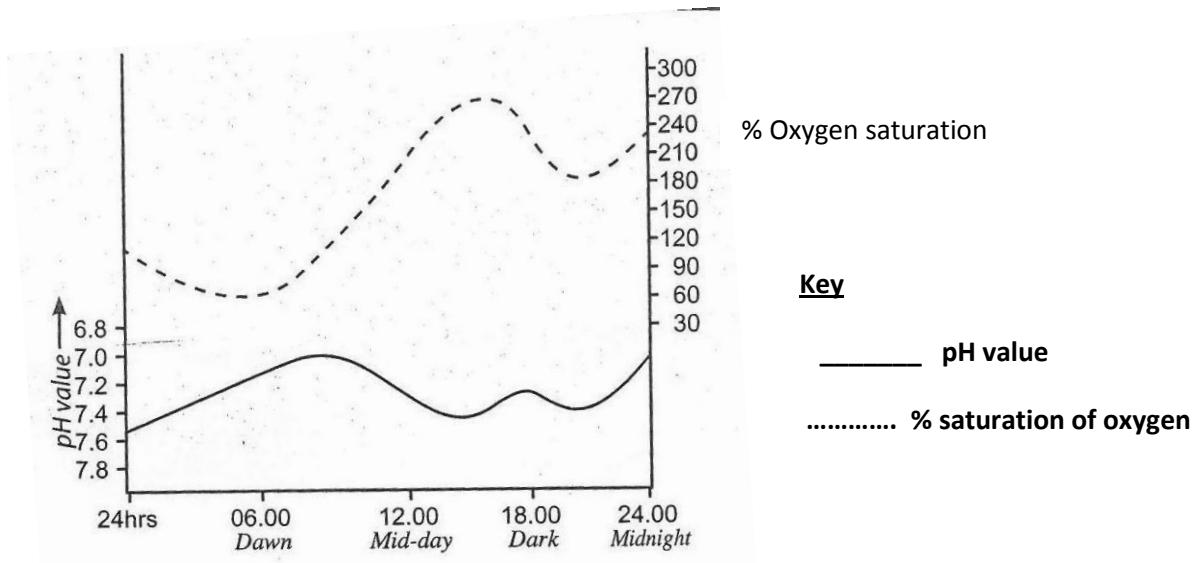
a) when is the pH value and dissolved oxygen saturation % highest?   (2 marks)

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(b) Account for the pH value recorded
(i) Between 08.00 and 1.00 p.m   (2 marks)

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(ii) Between 2100 and 2400 midnight   (2 marks)

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(c) Explain the influence of light intensity on % saturation of oxygen dissolved in this
study   (4 marks)

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(d) State two structural adaptations that the submerged plants in this river have, which enable them to carry out photosynthesis   (2 marks)

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(e) Explain the variations that will be recorded if a similar study was carried out in a river near a nitrate fertilizer industry.   (4 marks)

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7. Explain the various ways in which a typical cell is adapted to its functions (20 marks)

8. Discuss the causes, effects and control measures for water pollution   (20 marks)

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KCSE POSTMOCKS SET 2

Business Studies

Paper 2

This paper consists of 3 printed pages. The candidate must check to ensure no page is missing.

1(a) Every institution has office staff which should have certain prescribed code of

behaviour. Explain five office etiquette of an office staff.   (10mks)

 (b) Explain five methods that government uses to protect consumers.   (10mks)

2.(a) Explain five insurance policies that the proprietor of Umoja Supermarket may take

to his business.   (10mks)

  (b) Explain five negative effects of inflation.   (10mks)

3.(a) Describe five channels used to distribute manufactured goods in Kenya.

  (b) Highlight five differences between a co-operative and a public limited

company.   (10mks)

4.(a) Explain five consideration that the county government should look into before

     Incurring any expenditure.   (10mks)

 (b) The following transactions were extracted from the books of NKUNDI enterprise

for the month of August.

   (i) August 1ˢᵗ cash in hand Ksh.13,000 and at bank Ksh.28,000.
   (ii) August 3ʳᵈ cash sales amounting to Ksh. 15,000.

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(iii)   August 5th received Ksh. 7,800 form Mwenda after deduction of 2 ½ % cash discount.
(iv)   August 7th paid Kananu Ksh.17,000 by cheque in full settlement of her account of Ksh.17,500.
(v) August 9th received Ksh.19,000 from Kawira after allowing 5 % cash discount.
(vi)   August 10th Deposited Ksh.15,000 into the bank from the cash till.
(vii)   August 11th took Ksh.9,500 cash for personal use.
(viii)   August 15th paid Barazaksh. 8,800 after deducting 12% cash discount by cheque.
(ix)   August 20thBanked some cash leaving Ksh.12,300 in the cash till.

Required: Prepare a three column cash book for Njundi Enterprise duly balanced.
(10mks)

5.(a) Kwanza limited operates as monopolist. Explain five possible factors that made

this firm acquire monopoly power.   (10mks)

 (b) A flower farmer in Njoro has secured market for her flowers in a foreign market.

   Explain five reasons why the farmer should use air to transport his flowers.

6.(a) Explain four factors that lead to business success.   (8mks)

 (b) The following trial balance was extracted from the books of Hekima Traders as at

   30th June 2010.

Details	Dr.(sh)	Cr(sh)
Premises	1,500,000	
Debtors & creditors	20,000	30,000
Cash (bank)	90,000	
Cash (hand)	10,000	
Purchases and sales	140,000	320,000
Stock 1st June 2010	45,000	
Salaries and wages	50,000	

Discounts	6,000	
Commissions		2,000
Power & lighting	12,000	8,000
Returns	15,000	19,000
Carriage inwards	5,400	
Carriage outwards	2,300	
Capital		1,543,700
Furniture	27,000	
	1,922,700	1,922,700

Stock on 30th June 2010 was worth shs. 22,000

Required:

Prepare a trading, profit and loss account for the year ending 30th June 2010.(12mks)

KCSE POSTMOCKS SET 2

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

1. a) During winter in European countries Sodium Chloride is poured on roads. Explain.   (1mk)

   b) Apart from iodine, dry ice and ammonium chloride name two other substances that sublime. (2mks)

2. Explain how the following factors affect the rate of a chemical reaction.

   (a) Temperature   (2mks)

   (c) Concentration
   (2mks)

3.   Use the information in the table below to answer the questions that follow. (The letters do not
       represent the actual symbols of the elements)

Element	P	Q	R	S	T
Atomic number	20	8	18	8	19
Mass number	40	16	40	18	39

(a) Which **two** letters represent the same element? Give a reason
(2mks)

(b) Give the number of neutrons in an atom of element T.
(1 mk)

4.   The set-up below was used to investigate the rate of diffusion of different gases.
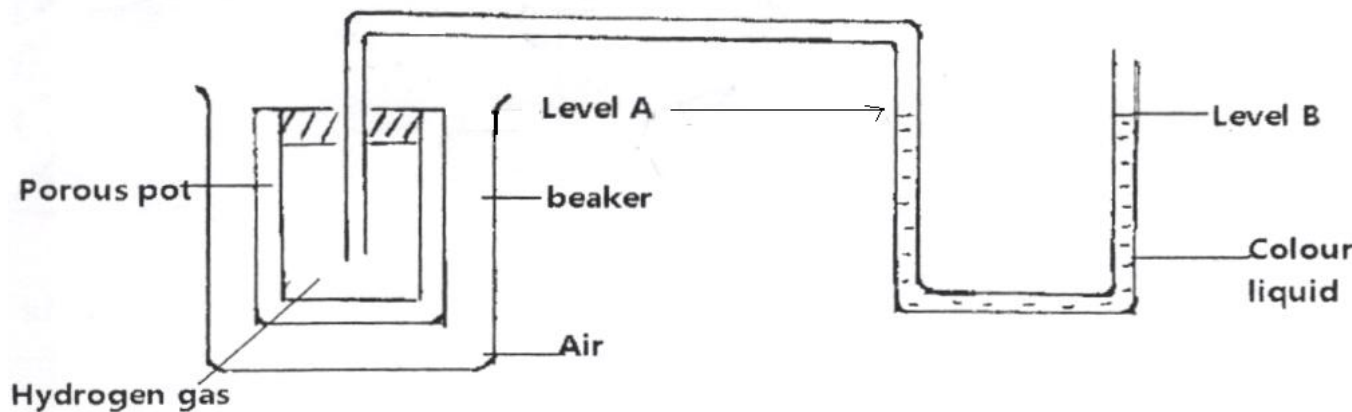
(a) Explain why a coloured liquid is used in this experiment   (1 mk)

(b) In relation to the level of the coloured liquid, State and explain the observation made after 20

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

minutes.

(2mks)

5.   When a few drops of aqueous ammonia were added to a colourless solution **X**, a white precipitate formed which dissolved in excess to form a colourless solution **Q**.

(a) Name the white precipitate formed

(1mk)

(b) Write the formula of the complex ion present in the colourless solution Q   (1 mk)

(c) Name another reagent that can be used in place of ammonia solution to give the same results.

(1mk)

6.   Draw the set of apparatus that can be used to separate a mixture of ammonium chloride and sodium chloride.

(2 mks)

7.   An element T has two isotopes with relative abundance of 65% and 35%. If the mass number of the two isotopes is X and 31 respectively, find the mass number represented by X, given that the relative atomic mass of T is 30.

(3mks)

8. Use the thermochemical equation below to draw an energy level diagram. (3mks)

$$C_{(s)} + O_{2(s)} \longrightarrow CO_{2(g)} \qquad \Delta H = -393kJ/mol$$

9. A student collected the samples of water from two different sources. She measured equal volumes of water in two different test-tubes. She added soap solution from a burette until permanent lather was formed. She then boiled another two samples of the same waters and repeated the experiment. She recorded the results in the table below.

Sample of water	Volume of soap used before boiling(cm^3)	Volume of soap used after boiling (cm^3)
A	30	10
B	30	30

(a)Name the type of water hardness in sample A. Explain
(2mks)

(b) Name the cations that cause water hardness .
(lmk)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

10. Methane gas reacts with Chlorine gas as shown in the equation below.

$$CH_{4(g)} + Cl_{2\ (g)} \xrightarrow[\text{light}]{\text{u.v}} CH_3Cl + HCl_{(g)}$$
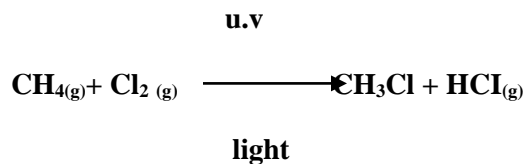
Use the bond energies in the table below to calculate the enthalpy change for the above reaction.

Bond	Bond energy (kJ/Mo1)
C-H	413
Cl-Cl	242
C-Cl	346
H-Cl	431

(2mks)

11. The table below shows physical properties of some substances. Use the information in the table to answer the questions that follow.

Substance	Melting	Boiling	Electrical conductivity	
	Point ºC	Point ºC	Solid	Liquid

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

M	1083	2595	Good	Good
N	801	1413	Poor	Good
O	5.5	80.1	Poor	Poor
P	-114.8	-84.9	Poor	Poor
Q	3350	4827	Poor	Poor

(a) Which substance is likely to be:

(i) A Metal?

(lmk)

(ii) A Liquid at room temperature?

(lmk)

(b)Which substance is likely to have the following structures?

(i) Simple molecular?

(1mk)

(ii) Giant atomic?

(1mk)

12. The diagram below show a set-up for the laboratory preparation of dry chlorine gas.

Manganese(IV) oxide   Water
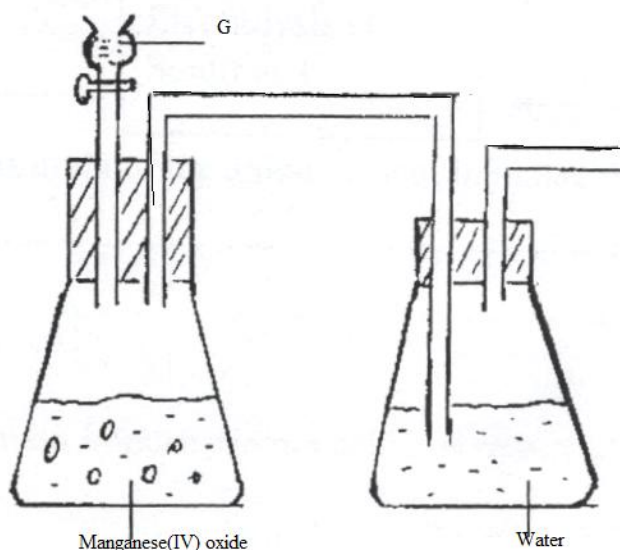
(a) Complete the diagram to show how dry chlorine gas is collected
(2mks)

(b) Name substance G
(1mk)

(c) State the role of manganese (IV) oxide in the experiment.
(1mk)

13. Solutions can be classified as acids, bases or neutral. The table below shows solutions and their pH

values.

Solution	pH values
K	1.5
L	7.0

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

M	14.0

(i) Select any pair that would react to form a solution of pH 7 (1mk)

(ii) Identify **two** solutions that can react with Aluminium hydroxide. Explain. (2mks)

14.   a) In which homologous series do the following compounds belong:

(i)CH_3 CH CH_2

(lmk)

(ii) $-[CH_2 - CH_2]_n$
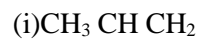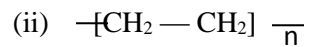
(lmk)

(b) Draw the structure of propyne.

(1mk

15. (a) Starting from Calcium Carbonate, describe how a solid sample of Calcium sulphate can be

prepared.
(3mks)

(b) Give **one** commercial use of calcium sulphate.

(lmk)

16. The table below gives information about some reactions of metals A, B, C and D and their

nitrates.

Metal	Reaction with acid	Reaction with water	Action of heat on its nitrate
A	Hydrogen evolved	No reaction	Oxide formed
B	No reaction	No reaction	Metal formed
C	Hydrogen evolved	Hydrogen evolved	Oxide formed
D	No reaction	No reaction	Oxide formed

Arrange the metals in order of decreasing reactivity (starting with the most reactive)
(2mks

17. a) Define a binary electrolyte.   (1mk)

b) Molten lead (II) bromide can be electrolyzed using graphite electrodes. Write the anode and

   cathode equations.
         (2mks)

Anode

Cathode

18.   Study the flow chart below and answer the questions that follow.
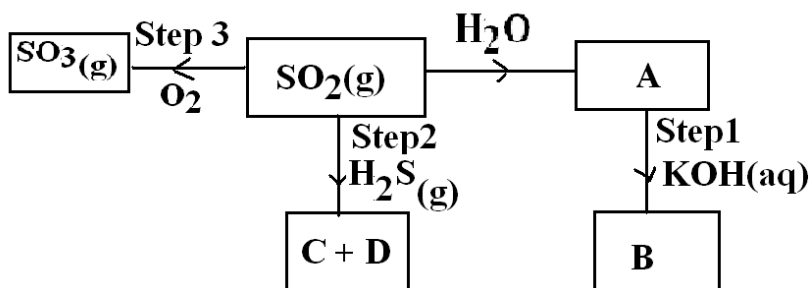
(a)   Name the substance

        (i)   A

        (ii)   B
(1mk)

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(b)   State the property of SO_2 exhibited in step 2
(1mk)

19.   The diagram below represents a set-up that was used to collect the products of burning kerosene.
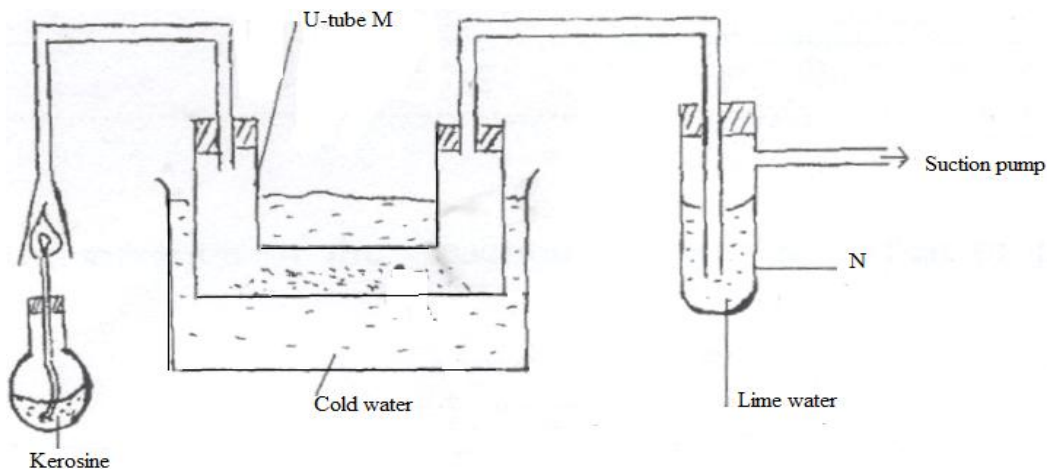
(a) Name the substance that is formed forms in U-tube **M**

(b) Describe a chemical test for substance **M**   (1 mk)

(c) What observation would be made in tube **N**? Explain your answer
(2mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

20.   An ion of phosphorous can be represented as $31 \, P^{3-}_{15}$. Draw a diagram to show the distribution of the electrons and the composition of the nucleus of the ion of phosphorous.   (2mks)

21.   (a) State Gay Lusssac's Law
(lmk)

(b When $100cm^3$ of a gaseous hydrocarbon (C_xH_y) burn in $400cm^3$ of oxygen, $100cm^3$ of oxygen is unused, $200cm^3$ of carbon (IV) oxide and $200cm^3$ of steam are formed. Deduce the equation for the reaction and the formula of the hydrocarbon.
                                  (3mks)

22. An equilibrium exists between the reaction of bromine and bromide ions as represented by the

equation.

$$Br_{2(aq)} + H_2O_{(l)} \rightleftharpoons OBr^-_{(aq)} + Br^-_{(aq)} + 2H^+_{(aq)}$$

What effect would addition of sodium hydroxide solution have on the above equilibrium?

Explain your answer
      (2mks)

23. Distinguish between malleability and ductility.   (2mks)

24. The chemical equations below are the main reactions in large scale manufacture of sodium carbonate.

$$NH_{3(g)} + CO_{2(g)} + H_2O_{(l)} \longrightarrow NH_4HCO_{3\ (aq)}$$

$$NH_4HCO_{3\ (aq)} + NaCl_{(aq)} \longrightarrow NaHCO_{3(s)} + NH_4Cl_{(aq)}$$
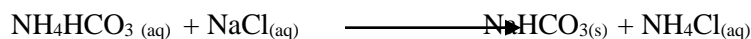
   a) Explain how the **two** products, NaHCO$_3$ and NH$_4$Cl are separated.
(1mk)

      b) (i) How is sodium carbonate finally obtained?
(1mk)

      (ii) Explain how ammonia is recovered and recycled?
      (1mk)

25.   Hot concentrated Sulphuric (VI) acid was added to copper metal. A blue solution was formed
       and colourless gas that turns acidified potassium chromate (VI) solution from orange to green was
       also formed. Explain these observations.
       (2mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

26.   The reaction between marble chips (calcium carbonate) with excess 2M hydrochloric acid was
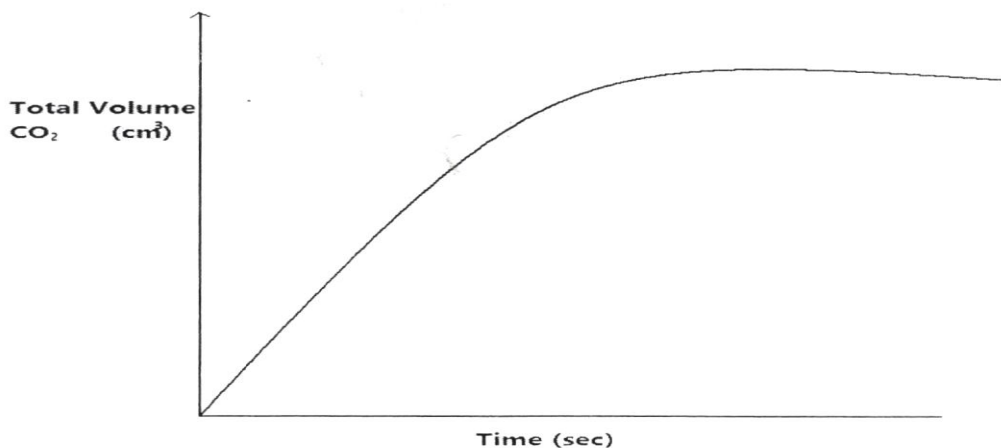
investigated at 25°C by measuring the volume of carbon(IV) oxide gas produced as the reaction progressed. The sketch below represents the graph that was obtained when volume of Carbon (IV) oxide produced was plotted against time.

On the same diagram, sketch the curve that would be obtained if the marble chips was replaced

with calcium carbonate powder of the same mass.

(1mk)

27.   State **one** factor which makes chlorofluorocarbons serious gaseous pollutants.

(lm

28. In an experiment a certain volume of air was passed repeatedly from syringe over heated excess zinc powder as shown in the diagram below.
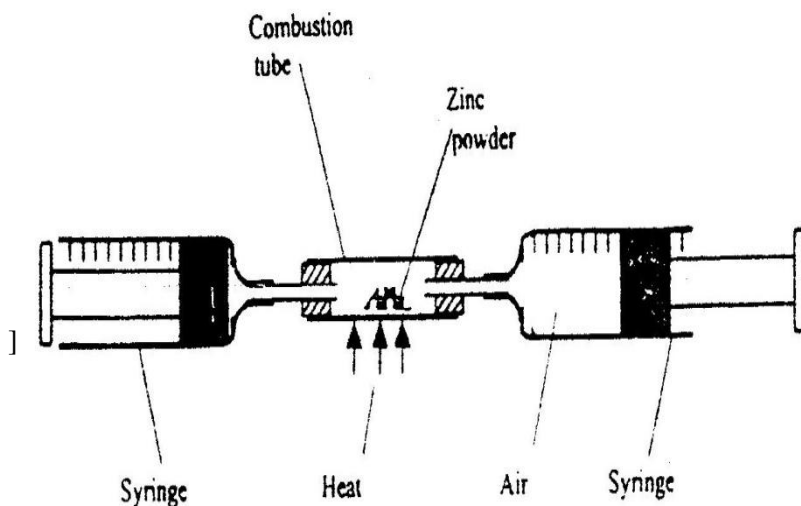
The experiment was repeated using excess magnesium powder. In which of the experiments was the change in volume of air greatest? Give reasons.
(2mks)

29. A label on a bottle containing Sulphuric (VI) acid has the following information.

-Density $=1.836gcm^3$
-Percentage purity $=98\%$
-Relative formula mass. $=98$

Calculate

a) The concentration of the acid in moles per litre.   (2mks)

b) The volume of the acid that should be diluted to produce 2 litres of 2M sulphuric (VI) acid.
(1mk

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KCSE POSTMOCKS SET 2

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

233/2
Chemistry
Paper 2
2 Hours

1. The grid below is part of the periodic table. Use it to answer the questions that follow. (The letters are not the actual symbol of the elements)

P								S	T	U	V	W	X
Q										M			Y
R													Z

a) Which is the most reactive metallic element shown in the table? Explain.(2marks)

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b) i) Write the formula of the compound formed when element Q reacts with element V. (1mk)

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ii) Name the type of bond in the compound formed between element T and W. (1mark)

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c) i) What is the name given to the group of elements where P, Q and R belong?(1mark)

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ii) Write an ionic equation for the reaction that occurs when element R in solid form react with an aqueous solution containing ions of element P. (1mark)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

d) J is an element that belongs to the 4th period of the periodic table and is a member of the halogen family of elements. Show the position of J in the grid. (1mark)

e) M forms two oxides. Write the formula of each of the two oxides. (1mark)

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f) Give one use of element Y. (1mark)

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g) i) Write the symbol of the most stable ion of element V.(1mark)
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ii) Using dots and crosses to represent electrons show the bonding in the compound formed between M and W. (2marks)

2. The set up below was used to prepare hydrogen gas.
(a)   (i)   Complete the diagram to show how a
    dry sample of the gas can be collected.   (3mks)

Dilute hydrochloric acid
Zinc Granules
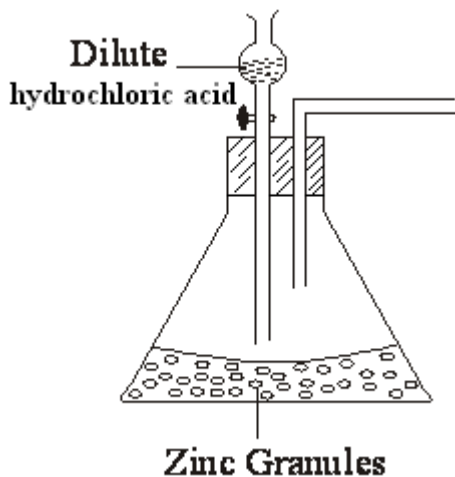
ii) Write an equation for the reaction producing hydrogen gas.   (1mark)

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iii) How can the rate of production of the gas be increased in the above set up ?(1mark)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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(b)   Dry hydrogen gas was passed over heated copper (II) oxide in a combustion tube as shown below.
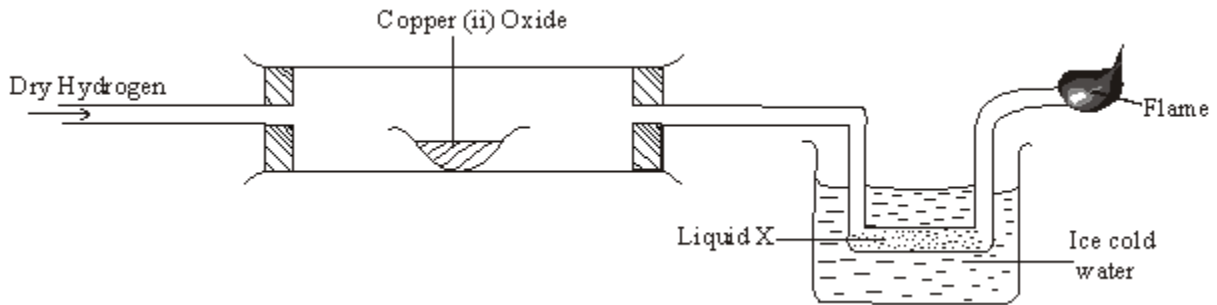
i)   State and explain the observation made in the combustion tube. (2marks)

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

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c)   Describe one chemical test than can be used to prove the identity of liquid X.(2marks)

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d) (i) When magnesium oxide is used in place of copper (ii) oxide, no liquid is formed in the U-tube dipped in ice cold water. Explain.   (1mark)

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  (ii) Write an equation for the reaction at the flame point.(1mark)

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3. (a)(i) With the aid of a chemical equation, explain how boiling removes water hardness.(2mks

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(b) The solubility of Sodium Nitrate in 100g of water is given for various temperatures in ^0C.

Temperature (^0C)	0	20	40	60	80	100
Solubility (g/100g of H_2O)	73	88	104	124	148	180

(i) Plot a graph of solubility of Sodium Nitrate against temperature.(3marks)
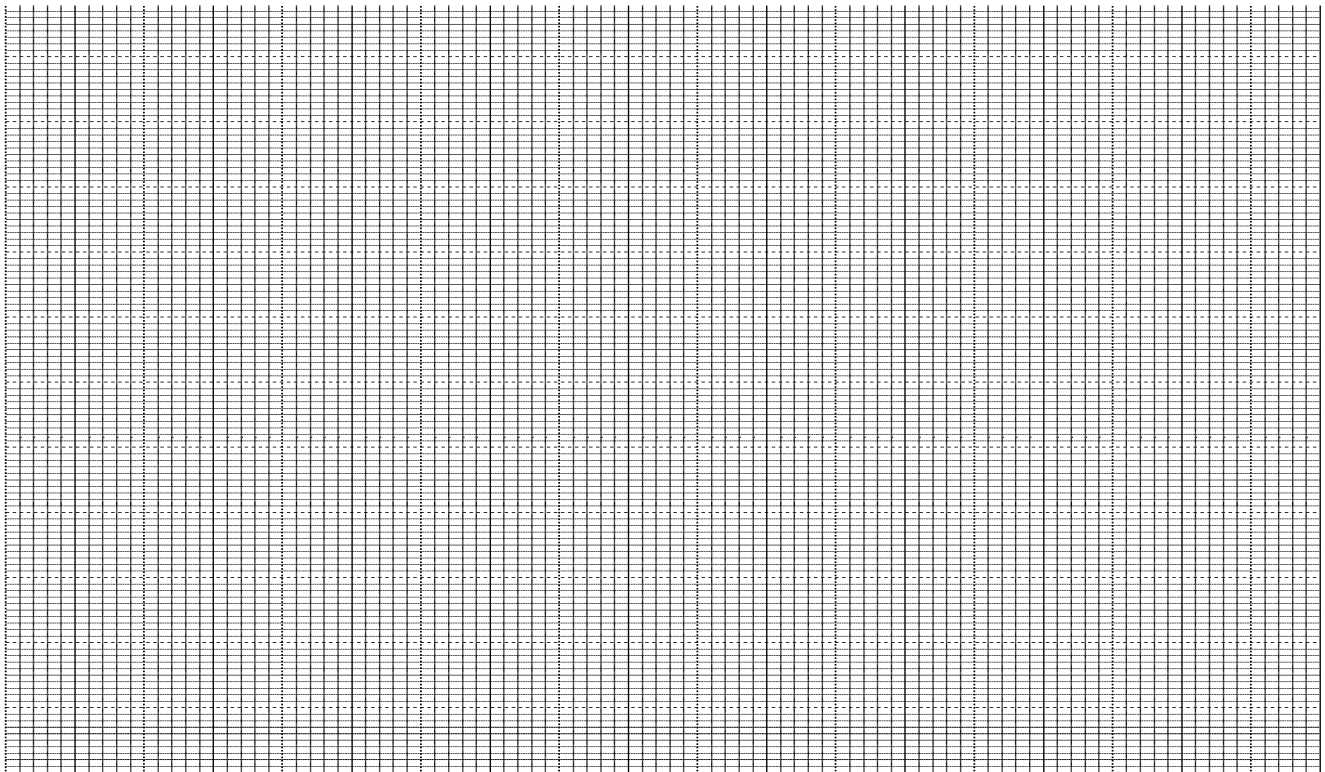
ii)Using the curve determine the solubility at 70^0C.(1mk)

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………… iii) 100 grams of water is in saturated condition at 10^0C withsodium nitrate. Using the curve,determine the mass in grams of the salt which will have to be added to make the solution just saturated at 80^0C. (2mks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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iv) State**one** application of solubility. (1mark)

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4.The diagram below illustrates the contact process for the manufacture of sulphuric (VI) acid. Study it and answer the questions that follow.

Air

Solid A → Burner → SO$_2$ Air → Purifier → CLEAN SO$_2$, Air → Drier

Con.Sulphuric acid

Dry SO$_2$, Air

Absorption tower ← Cooler ← Heat exchanger

Oleum

SO$_3$ SO$_2$ Air

Diluter → Catalytic converter

Concentrated Sulphuric acid
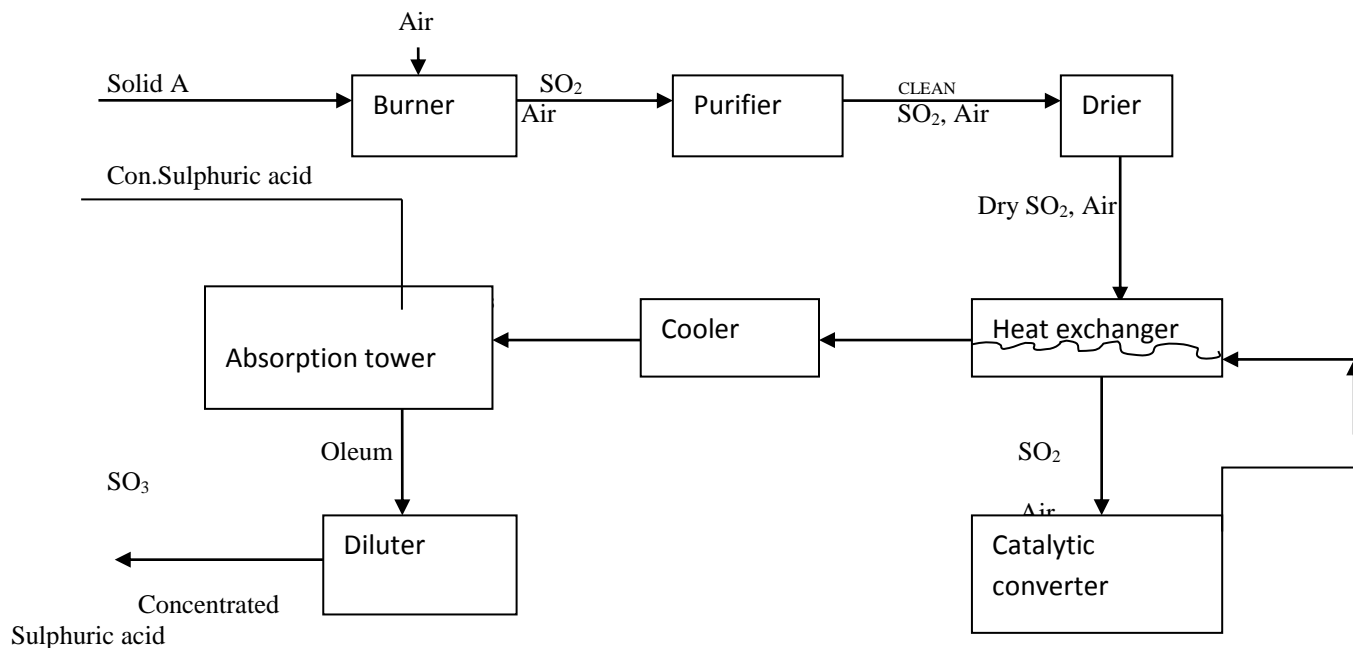
(a) Name two possible identities of solid A.   (2mks)

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(b) (i) Name two impurities removed by the purifier.(1mk)

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(ii)Why is it necessary to remove the impurities?

(1mk)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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(c). Write down the equation for the reaction that takes place in the converter.(1mk)

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d) (i) Name the **two** catalysts that can be used in the converter.   (1mk)

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  (ii) Which of the **two** catalysts is most commonly used and why?(1mk)

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(e) Why is sulphur (VI) oxide not absorbed directly into water? (1mk)

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(f) Give the equation for the reaction that takes place in the absorption tower.(1mk)

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(g) Name the main pollutant in the contact process. (1mk)

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 (h) State**two** methods by which pollution is controlled in the contact process.(2mks)

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  5. (a) i) What is meant by the term heating value of a fuel?   (1mk)

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  ii) Calculate the heating value of methanol given that $\Delta H_{(c)}$ (CH_3OH) = - 715.0 kilojoules

  per mole. (C=12, H=1,O=16)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(2mks)……………………………………………………………………………………………………

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b) The diagram below represents a set up that was used to determine the molar mass of combustion of ethanol (CH_3CH_2OH)
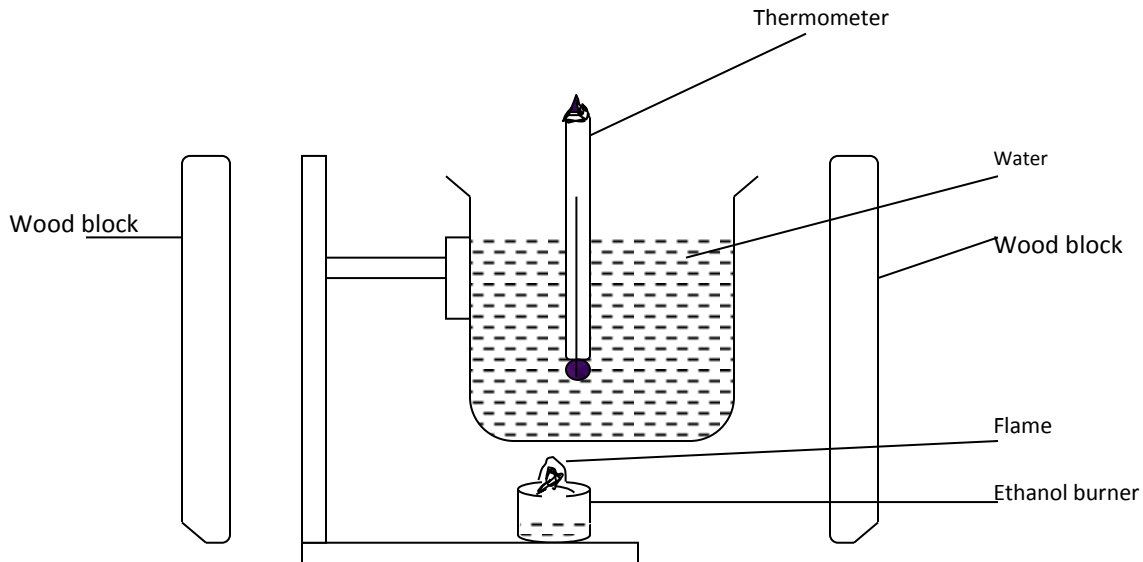
During the experiment the data given below was recorded.

Volume of water = $400cm^3$

Initial temperature of water = 26^0C

Final temperature of water = 47.5^0C

Mass of Ethanol + lamp before burning 125.5g

Mass of Ethanol + lamp after burning = 124.0g

Specific heat capacity $4.2kJKg^{-1} K^{-1}$

i) Calculate the number of moles of ethanol burnt during the experiment. (1mk)
   (C=12, H=1, O=16)

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Calculate the the heat change in the experiment. (1mk)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

iii)Calculate the the molar heat of combustion of ethanol.(1mk)

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(c) The value of the molar heat of combustion of ethanol obtained in b) iii above is lower than the theoretical value. Give a reason. (1mk)

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 (d) Write down the thermochemical equation for the reaction.

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(e) (i). On the axes below draw the energy level diagram for the reaction. (2mks.)

Energy

Reaction path

ii) Study the information in the table below and answer the question that follow.

Bonds	C-H	Cl-Cl	C-Cl	H-Cl	C-C
Bond Energy(kJmol⁻)	413	244	340	431	393

Calculate the enthalpy change for the reaction:
$C_2H_6 (g) + Cl_2 (g) \longrightarrow C_2H_5Cl (g) + HCl (g).$
(3mks)

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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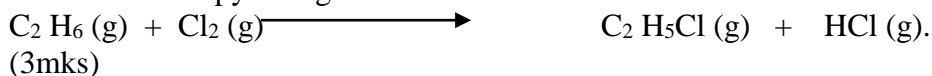
6. a) What are isomers? (1mk)

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b) Draw and name all the isomers of butane. (2marks)

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c) Describe a chemical test that can be used to distinguish between propane and propene.(2marks)

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……………………………………………………………………………………….………………………………

d) The following scheme represents various reactions starting with ethene. Use it to answer the questions that follow.
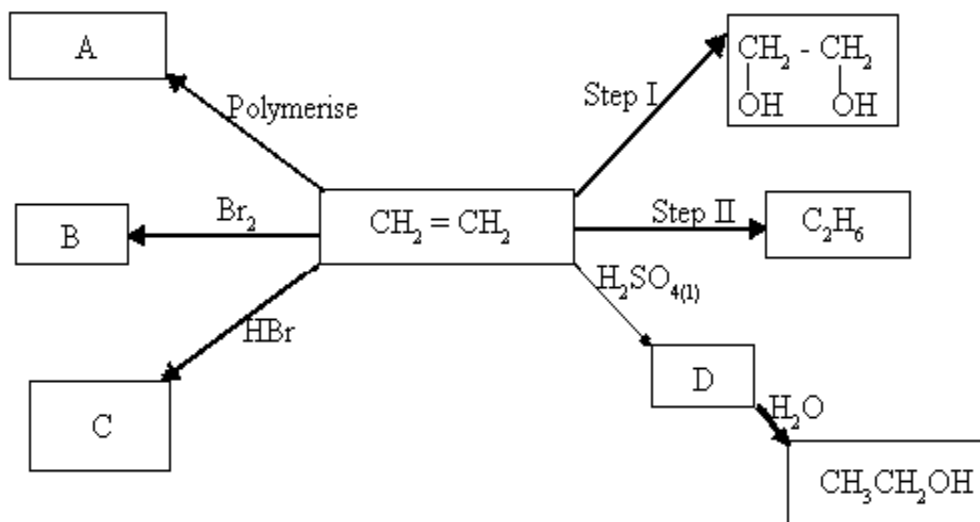
i) State the reagent and conditions necessary for step II to take place. ($1^1/_2$marks)

Reagent…………………………………………………………………………………………………

……………

Conditions…………………………………………………………………………………………………

………

……………………

ii) Give the general formula and name of the polymer Z.   (1mark)

……

……………

iii) Name the reagent used in step I. ($^1/_2$mark)

……

…………

iv) Give the name of the type of reaction that take place in steps I and II, (1mark)

I…………………………..…………………………………………………………………………

…………

II………………………………………………………………………………………………………

……………..

v) Write the equation for the reaction that leads to the formation of substance B. (1mark)

………

……

……………………

vi) Name substances D and C.   (1mk)

D……

……………

C……

……………

7. Equal masses of magnesium ribbons were reacted separately with equal volumes of 1M hydrochloric acid and 2M hydrochloric acid. The results were plotted on a graph as shown below. Two curves X and Y were obtained.

Time (s)
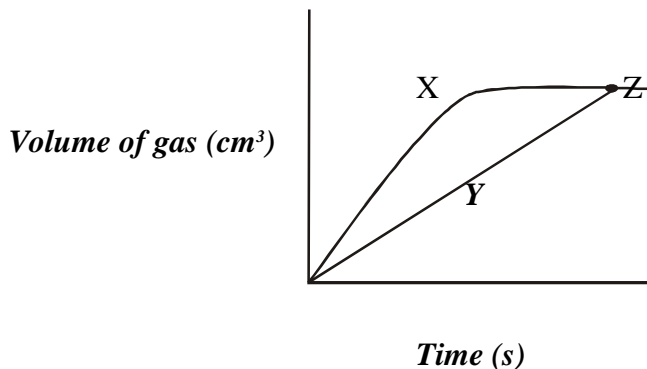
a) Which curve represents.
    (i) 1M hydrochloric acid.   ($^1/_2$ mark)

    ………
………

    (ii) 2M hydrochloric acid.   ($^1/_2$

    mark)

    ……
……………

    (b)   State the significance of point Z. (1 mark)

    ……
…….

    (c)   On the same axis, sketch the curve you would obtain if the same mass of powdered
magnesium was reacted with the same quantity of 2M hydrochloric acid. Mark the curve W.
(1 mark)

    (d)   Write an equation for the reaction between magnesium and dilute hydrochloric
acid.(1 mark)

    ……
..

    (e)   Calculate the maximum mass of the gas that would be produced if 1.2g of
magnesium reacted with excess hydrochloric acid.   (Mg = 24, H = 1)(2 marks)

    ……
    ……
    ……
    …………………………………………..

    (f)   Calculate the volume of the gas produced in (e) above atr.t.p(molar volume of a gas at
r.t.p is 24.0dm^3)   (1mark)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

……
……
……
………………………………………………

g) State Le Chatellier's principle.(1mark)

………
………
………

b) Study the equilibrium equation below and answer the questions below it.

$A_{2(g)} + B_{2(g)} \rightleftharpoons 2AB_{(g)} \Delta H = + 7kJ/mol$
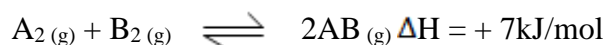
i) Explain the effect of increasing pressure on the equilibrium above.

(2 marks)

………
………
………………………………………………………………………………………………………

ii) What is effect of raising temperature on the equilibrium mixture?

(1 mark)

……
……
………………………

KCSE POSTMOCKS SET 2
Kenya Certificate of Secondary Education (KCSE)
CRE PP1

1.   (a) Give seven reasons that qualify the bible as the word of God.
     (7mks)

     (b) Outline four similarities between the two accounts of creation in the Genesis 1 and 2.

     (8mks)

     (c) Explain how the study of CRE contributes to National development.
             (5mks)

2.   (a) Describe the background to the call of Abraham.
             (7mks)

     (b) Identify seven conditions given to the Israelites by God, for the renewal of the Sinai
covenant.
     (7mks)

     (c) State six values that Christians learn from the Ten Commandments.
             (6mks)

3.   (a) With reference to the story of Naboth, show seven ways in which Ahab broke the
     covenant way of life.
             (7mks)

     (b) Identify four factors that led to the division of the kingdom of Israel after the death of
     King Solomon.
              (8mks)

     (c) State five causes of power struggle in the church in Kenya today.
             (5mks)

4.   (a) State eight importance of prophets in Israel.
             (8mks)

     (b) Identify seven social evils committed by dishonest merchants during the time of
     prophet Amos.   (7mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(c) Outline five ways in which the church is promoting social justice in Kenya today. (5mks)

5. (a) Outline seven occasions when Nehemiah prayed. (7mks)

(b) Give reasons why Jeremiah is referred to as the suffering prophet. (6mks)

(c) Give seven ways in which the church is carrying out its prophetic roles in the society today.

(7mks)

6. (a) state the role of priests in Traditional African Communities (8mks)

(b) Outline the significance of marriage in African traditional community. (7mks)

(c) Give factors that are affecting the role of diviners today (5mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

KCSE POSTMOCKS SET 2
Kenya Certificate of Secondary Education (K.C.S.E)

CRE PP2

Answer any five questions

1. a) The message of the angel Gabriel to Mary in Luke 1:26-38 (6mks)
   b) State six activities that took place when Jesus was born Lk 2:6-20 (6mks)
   c) State eight ways through which Christians in Kenya express joy for the birth of Jesus
   (8mks)

2. a) Describe the baptism of Jesus of john the Baptist Lk 3: 21-22 (6mks)
   b) Outline eight reasons why Jesus was baptized and yet he was not a sinner (8mks)
   c) Give six reasons why Christians undergo baptism (6mks)

3. a) Describe the triumphant of Jesus into Jerusalem Lk 19:28-40 (6mks)
   b) Outline the events that took place from the timeJesus was arrested up to the time he wasSentenced to death. (7mks)
   c) State seven lessons Christians learn from the suffering and death of Jesus. (7mks)

4. a) Identify the gifts of the holy spirit according to saint Paul (1corinthians 12:7-12)
   b) How was the life of peter transformed during the day of Pentecost (6mks)
   c) Explain six ways in which the gifts of the Holy Spirit are abused in the church today.(6mks)

5. a) Explain seven reasons why Christians should condemn idleness (7mks)
   b) Identify seven factors that may lead to unemployment in Kenya (7mks)
   c) What are the Christian criteria of evaluating leisure (6mks)

6. a) state seven ways in which wealth was acquired in traditional African communities (7mks)
   b) Explain seven negative effects of the introduction of money economy in traditional
       African communities (7mks)
   c) How can Christians in Kenya help to narrow the gap between the rich and the poor?
   (6mks

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

KCSE POSTMOCKS SET 2

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

ENGLISH PP1

Fuctional Writing (20marks)

There has been a change over in the Administration of your school. The chairperson of the school Student Council Executive which comprises of eight members calls for a familiarization meeting with the Principal.

The Executive has the following members: The School Chair the Deputy, the Dining Hall Prefect, the Games Captain, the Medical Prefect and three Dorm Prefects.

The following issues were addressed in the meeting:

(i)   Introduction of members
(ii)   Election of Council Members
(iii)   The Role of Council in School
(iv)   Motivation of members
(v)   Discipline of members
(vi)   Any other Business

During the meeting, the Dining Hall prefect sends his apology due to an on-going exam, while two Dorm Prefects are away due to fees.

As the Secretary of the Student Council Executive Committee, write the Minutes of your first meeting with the new Principal.

CLOZE TEST (10 marks)

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

Although the government has--1--------------------a number of county schools to national status, most of them have not shown any--2------------------------achievement to warrant their newly-acquired title. Thus, the-3------------------- is for government to provide adequate resources to prepare the schools to take their rightful place and ultimately-4--------------alternative centers of excellence. The reason for elevating more schools to national status is-5-----------------------just in name, but to offer opportunities for more primary school leavers to benefit--6--------------------------------- the resources in these institutions. ---7----------------------that is not achieved, and then the drive to expand national schools will become an academic exercise. After form four, the -8-----------------------------------will be looking for progression to universities or other tertiary institutions. Statistics indicate that about-9----------------------------------third of the candidate, 149,717 out of 482,133 who registered for the exams, scored grades C+ and above, --10----------------------for university admission.

Read the poem below and then answer the questions that follow.

When, in disgrace with Fortune and men's eyes,

I all alone beweep my outcast state,

And trouble deaf heaven with my bootless cries,

And look upon myself and curse my fate,

Wishing me like to one more rich in hope,

Featured like him, like him with friends possessed,

Desiring this man's art and that man's scope,

With what I most enjoy contented least,

Yet in these thoughts myself almost despising;

Haply I think on thee, and then my state,

(Like to the lark at the break of day arising)

From sullen earth sings hymns at heaven'ss gate,

For thy sweet love remembered such wealth brings

That then I scorn to change my state with kings.

(*William Shakespeare's Sonnet 29*)

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i) Identify any **four** pairs of words that rhyme in this poem. **(2 marks)**

(ii) Give **two** instances of alliteration **in** this poem.   **(2 marks)**

iii) Imagine you are performing this poem to learners who are visually impaired. Explain four ways in which you would ensure that they get the message effectively.   **(4mks)**

Identify any five pairs of homophonesin the list below.   **(5 marks)**

phloem   mad   heir

floors   flaws   berry

hair   coarse   flame

clause   mud

course   cause

close   cloze

bold   bald

floss   air

phlegm   bury

 (i)…………………………………..   …………………………………….

(ii)…………………………………..   …………………………………………..

(iii) ………………………………….   …………………………………………..

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(iv)…………………………………..   …………………………………………..

(v)……………………………………   …………………………………………

Provide two words for each of the following sounds.**(2 marks)**

/a:/   **/ʒ:/**

   I)   I)
   II)   II)

The underlining indicates the stressed word in the sentences below.

      Briefly explain what each sentence means.**(3 mks)**

      <u>Mary</u> bought a present for John.

      Mary <u>bought</u> a present for John.

      Mary bought a present for <u>John.</u>

Using a riddle of your choice , explain the riddling process. **(6 marks)**

Classify the following sub-genre. **(2 marks)**

Ken can can a can of curled kales

The following is a conversation between a father and his daughter.

DAUGHTER: (*shortly having arrived home from school*) Good afternoon,

Daddy

FATHER: *(Sitting complacently in the sofa, reading a newspaper. Looking up.....)* Good afternoon *(Resumes reading)*

DAUGHTER: (*Holding out her school report form)* Daddy, I'm excited. My teacher said I was the best improved. I was………..

FATHER: Oh, you were? Me, I used to be number one. I was absolutely unbeatable.

DAUGHTER: Chemistry has been a particular headache *(now looking at the report form which she thought her father would want to see)*, but this time…….

FATHER: (*Stretching his arms, looking preoccupied)*

Chemistry for me was particular easy.

I never scored anything less than 90%

DAUGHTER: Dad, I was going to tell you that this time…….

FATHER: *(Absent minded)* by the way, where is your mum?

DAUGHTER: Mum is in the garden picking vegetables. But dad, you're not listening to my story. I was telling you about Chemistry

FATHER: You mean you have a story about chemistry? Chemistry is not about stories. It is hard science.

DAUGHTER: It's about my improvement……..

FATHER: (laughing) me, it wasn't matter of improvement. I was always at the top of the class

DAUGHTER: Daddy, I give up. You're not listening

FATHER: (*looking surprised)* Listening? I heard you: you were talking about improvement in chemistry, weren't you?

DAUGHTER: anyway, Dad. Thank you for paying attention. Enjoy your newspaper.

FATHER: Oh yes, I'm reading an interesting story about politics

Question

Identify four ways in which the father can improve hislistening skills   (**4mks)**

CALL/TEXT/WHATSAPP

FOR

ENGLISH PAPER 2&3

KCSE POSTMOCKS SET 2

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

BUSINESS PAPER 1

1. Give four features of basic human wants.   (4mks)

   ....
   ....
   ....
   ....
   ....

2. Define the following terms appropriately.

   (4mks)

   a) Mortality rate

   ....
   ....
   ....

   b) Fertility rate

   ....
   ....
   ....

   c) Life expectancy

   ....
   ....
   ....

   d) Infant mortality rate

   ....
   ....
   ....

3. Distinguish between the following

   (5mks)

Debentures	Preference shares
a.	
b.	
c.	
d.	
e.	

4. State the type of document described below.   (4mks)

a. Show from which country the goods are coming from.

   ....

b. Written by an exporter authorizing his bank to sell goods on his behalf

   ....

c. Allow importer to get goods on credit and cannot be changed by the importer without exporters permission.

   ....

d. Help in quicker clearance and it is issued by country's official abroad.

   ....

5. Indicate whether the following items are falling in real, nominal or private accounts.

   (3mks)

   Account

   (a) Sales

   ....

   (b) Carriage inwards

   ....

   (c) Fixture and fittings

   ....

(d) Stock

....

(e) Cash

....

(f) Capital

....

6. Outline four characteristics of multiple shops   (4mks)

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....

7. Highlight four ways in which the central bank acts as a banker to the government. (4mks)

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....

8. State four negative effects of high taxation in Kenya.

  (4mks)

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....

9. Write whether the following transactions will have an increase, decrease or no effect on the balance sheet totals.

  (4mks)

Transaction	**Effect**

a. Withdrew stock for personal use

....

b. Paid a creditor by cheque

....

c. A debtor paid by cash

....

d. Received a loan by cheque

....

10. Give Meshack four reasons why he should not introduce division of labour in his factory(

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....

11. Highlight four roles played by personal secretary   (4mks)

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12. In a well labelled illustration, show a shift in the supply curve.
          (5mks)

13. Given the following information of Elisha Traders
    (4mks)

Land and Building.	490,000
Machinery	300,000
5 year loan	110,000
2 year loan	80,000
Creditors	90,000
Debtors	100,500
Stock	75,600
Cash	40,000
Bank overdraft	69,900

Calculate,

a) Working capital
    (1mk)

b) Current ratio
    (1mk)

c) Capital owned
    (1mk)

d) Borrowed capital

(1mk)

14. Outline four trends in forms of business units.

(4mks)

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....
....
....
....

15. State four reasons that can lead to the termination of an insurance policy.

(4mks)

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....
....
....
....

16. State four essential elements in communication.

(2mks)

....
....
....
....
....

17. Record the following transaction in the General journal.

June 1st   bought furniture on credit from Wahu traders 25,000/=

June 2nd   exchange a motor van book value 240,000 for a machine valued at 280,000/=

June 3rd   sold furniture valued at 15,000 on credit to Erick for 13,400/=

June 4th   bought a van from c.m.c worth 390,000 paing 300,000 cash the rest to be paid later.

(4mks)

18. State four disadvantages of delocalization of firms.   (4mks)

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19. State four assumptions of circular flow of income in a two sector economy   (4mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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20. Highlight four roles of advertising agencies in product promotion   (4mks)

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21. Outline four benefits of commercial production   (4mks)

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22. Outline four reasons for one to hire human porterage instead of a pick-up to transport goods.   (4mks)

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23. Highlight four features of perfect competitive market.   (4mks)

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24. Name four documents that originate from the seller in the home trade.

(4mks)

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....

25. State four limitations of trial balance.   (4mks)

....

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....

KCSE POSTMOCKS SET 2

GEOGRAPHY PAPER II

Answer allquestions in this section

1. (a) What is a derelict land? (2 mks)

    (b) State **three**causes of land dereliction. (3 mks)

2. (a) State **three** problems facing coffee farming in Kenya. (3mks)

    (b) Outline **two** benefits of coffee farming in Brazil. (2 mks)

3. (a) What are floods? (2 mks)

    (b) Mention **two** advantages of farrow irrigation. (2 mks)

    (c) Name one river which causes large scale flooding in Kenya. (1 mk)

4. (a) Distinguish between a Game reserve and a National Park. (2 mks)

(b) Other than advertisement, mention **three** steps taken by the Kenyan government to promote tourism in the country. (3 mks)

5. (a) Define the term industry. (2 mks)

(b) State **three** factors necessary for location of an industry. (3mks)

SECTION B

Answer question 6 and two from this section.

6. The table below shows fish production by some selected countries in **1998.** (Production in tonnes).
   Study it and use it to answer questions that follow:

COUNTRY	PRODUCTION IN TONNES
Japan	1440
Norway	1020
South Korea	810
Kenya	330

a. i. Calculate the percentage of fish production by Norway. (2 mks)
   ii. Using 12cm long rectangle present the above data using a divided rectangle. (9 mk)

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iii State **two** advantages of presenting data using divided rectangle. (2 mks)

b. Outline **two** major methods used in commercial fishing. (2 mks)
c. State **two** reasons why market for marine fish is low in Kenya. (2 mks)

d. Explain **four** factors favouring fishing in Japan. (8 mks)

7. (a) (i) What is agro-forestry? (2mk)

(ii) Give **four** reasons why afforestation is being encouraged in Kenya. (4 mks)

(b) (i) State **four** measures being taken to conserve forests in Kenya. (4mks)

(ii) Explain **five** factors that limit the exploitation of tropical rain forests in Africa. (10 mks)

(c) (i) Mention **three** uses of Mangrove forests. (3 mks)
(ii) Name **two** major forest blocks found along the Kenyan coast. (2 mks)

8. (a) (i) Differentiate between horticulture and market gardening. (2 mks)

(ii) State **four** factors that favour horticulture in Kenya. (4 mks)

(b) (i) Name **one** horticulture farming area in the Netherlands. (1 mk)

(ii) State **four** ways through which Kenya has benefited from horticultural farming. (4 mks)

(iii) Explain **three** problems facing horticultural farming in Kenya. (6mks)

(c) Explain **four** conditions that have made horticultural farming in Netherlands more successful than Kenya. (8 mks)

9. (a) Define the term wildlife. (2 mks)

(b) Explain how the following factors influence wildlife distribution in Kenya.

(i) Climate (4 mks)

(ii) Human Activities (4 mks)

(c) Study the map of East Africa and answer the questions that follow:

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657
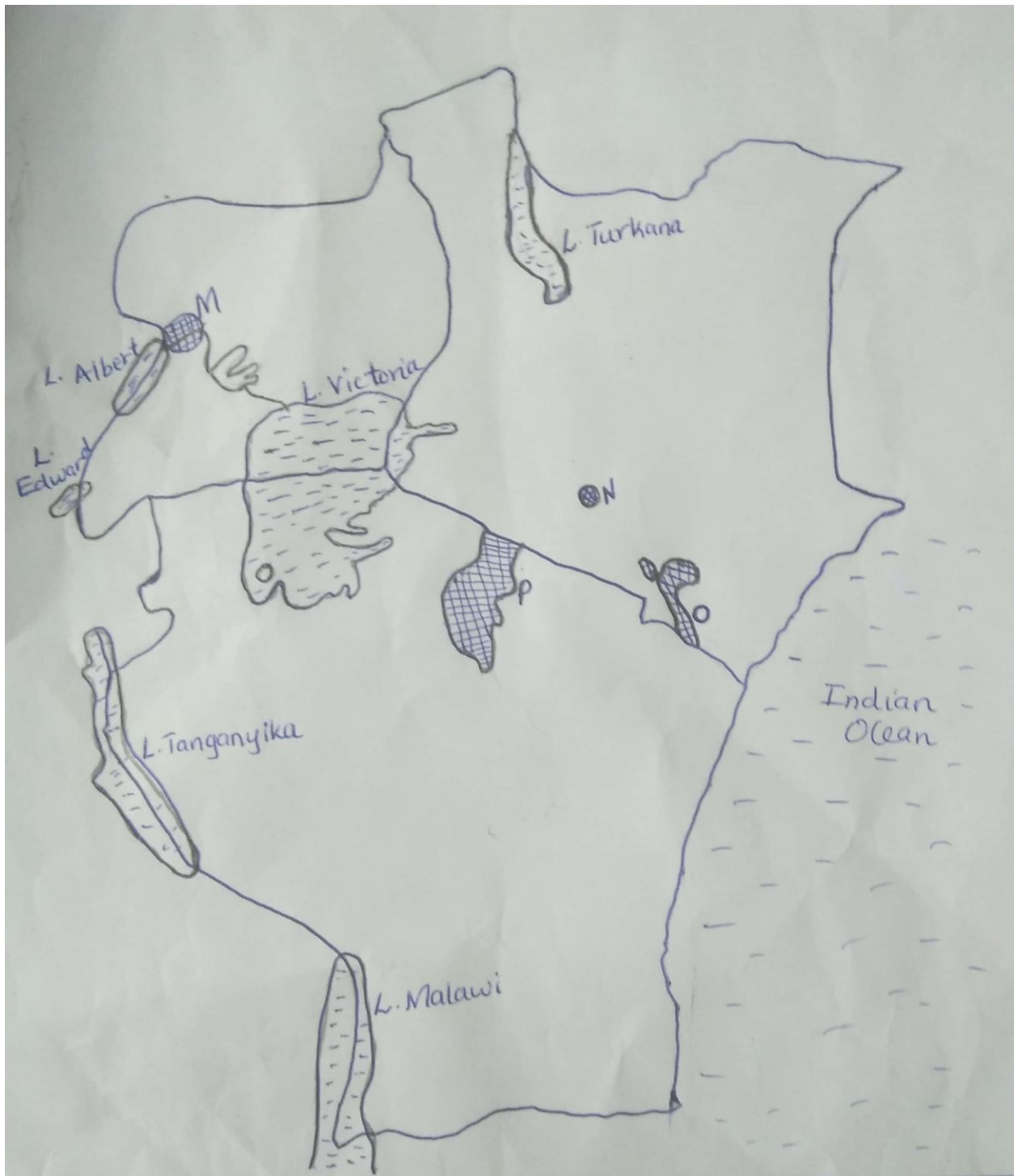
(i)   Identify the National Parks marked M,N, O and P.   (4 mks)
(ii)   Name **one** sanctuary found in Kenya.   (1 mk)

(d) State **two** problems facing wildlife in East Africa.   (2 mks)

(e) Explain **four** significance of wildlife in Kenya.   (8 mks)

10. (a) (i) Name **two** non-renewable sources of energy.   (2 mks)

    (ii) State **three** uses of energy in an industry.   (3 mks)

(b) (i) State **five** advantages of using hydro-electric power over other forms of energy. (5mks)

(ii) State **five** measures that Kenya may take to manage energy-crisis.   (5 mks)

 (c) Explain **five** effects of energy crisis in the world.   (10 mks)

KCSE POSTMOCKS SET 2

311/1
HISTORY
PAPER 1
TIME: 2HRS
SECTION A(25mks)

1. Give two sources of Kenyan history

2. Name the archaeological site where the remains of Kenyapithecus were discovered in Kenya.   (1mk)

3. Give one reason for the migration of the Borana from Ethiopia into Kenya.   (1mk)

4. State one political functions of the council of elders among the Agikuyu in the 19thC.

5. State two reasons why Seyyid Said transferred his capital from Muscat to Zanzibar.

6. Identify the two main items of trade from the interior during the long distance trade. (2mks)

7. Give two reasons that can make a registerd person to lose citizenship in Kenya.2mks)

8. Identify two practices that may interfere with national unity in Kenya.   (2mks)

9. Give one factor that led to the growth of Nairobi as a modern urban centre.   (1mk)

10. Give any one characteristics of a good constitution.   (1mk)

11. Identify the two types of democracy in the world today.   (2mks)

12. Give two economic factors that influenced the scramble for East Africa.   (2mks)

13. State two reasons why the maasai collaborated with the British in the 19thC. (2mks)

14. Give the main reason why poll tax was introduced in Kenya during the colonial period.   (1mk)

15. Give one way through which white settlers acquired land during the colonial period. (1mks)

16. Who was the first vice president of Kenya.   (1mks)

17. State one way in which the rule of law is upheld in Kenya.   (1mk)

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SECTION B(45mks)

18. (a)Apart from the Abagusii, name any three western Bantus in Kenya.   (3mks

    (b) Describe the social organization of the Abagusii during the pre-colonial period
        (12mks)

19. a) Give three roles of the Imperial British East Africa Company in Kenya between
        1888 to 1895.   (3 mks)

    (b) Explains six reasons why the Imperial British East Africa Company rule came to
        an end in 1895   (12 mks

20. (a) Name three trade unions which joined to form the Kenya Federation of Labour .
        during the struggle for independence in Kenya.   (3 mks

    (b) Explains six roles played by trade unions to improve the lives of Africans during .
        during the colonial period.   (12 mks)

21. (a) Give three reasons why Ronald Ngala and his colleagues formed the Kenya
        African Democratic Union.   (3 mks)

    (b) Explain six problems faced by Moi as the president of Kenya .   (12mks

SECTION C(30mks)

Answer two questions from this section

22. (a) Give the composition of the National Assembly in kenya.   (3 mks)

    (b) Explain six functions of the National Assembly in Kenya.   (12 mks)

23 (a) Give the three examples of superior courts in Kenya.   (3 mks)

    (b) Explain six problems facing the judiciary today .   (12mks)

24 (a) Give three decisions that were reached after the first Lancaster house conference.
                                                            (3 mks)

    (b) Describe six main features of the constitution of Kenya.   (1

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KCSE POSTMOCKS SET 2

CHETI CHA KUHITIMU ELIMU YA SEKONDARI

KISWAHILI

KARATASI YA 1

INSHA

1. Umepata habari kwamba binamu wako anayeishi Ujerumani ameanza kutumia mihadarati. Mwandikie barua pepe ukimweleza kuhusu athari hasi za tabia hiyo.

2. Mfumo wa elimu bila malipo katika shule za msingi na za upili umeleta manufaa mengi. Jadili

3. Andika kisa kitakachodhihirisha methali hii. Mtii mkuu ukigwa wana wa ndege huyumba.

4. Buni kisa kitakachomalizia kwa maneno :
   "…………… Tangu siku hiyo nilifahamu fika kuwa mtu yeyote anaweza kufanikiwa maishani bila kujali asili yake mradi tu awe na nidhamu na atie bidii katika afanyalo."

KCSE POSTMOCKS SET 2

KISWAHILI PAPER 2

HATI YA KUHITIMU ELIMU YA SEKONDARI KENYA (K.C.S.E)

A. <u>UFAHAMU (ALAMA 15)</u>

Soma kifungukifuatachohalafuujibumaswaliyanayofuata.

Ikolojianielimuyakisayansiinayohusuuhusianowakimazingirakatiyavituvyenyeuhai (mimeanawanyama) navisivyokuwanauhai(haliyahewaudongoElimuyaikolojiaipokatikamfumowaelimuyamazingira). Mfumohuuumegawanyikakatikasehemumbili: mfumowamazingirayanchikavu, namfumowamazingirayamajini (bahari, maziwa, mitonamadibwi).

Viumbewamejirekebishakulingananamazingirayao. Kwa mfanosamakiwanamatamvuayenyeuwezonakusharabuhewandaniyamaji. Ng'ombewanamapafuyakuvutahewakatikanchikavu. Sehemuzamvuayakawaidazinamajanimaneneiliyawezwkuhifadhimajinyakatizashida. Mimea, wanyama, odongonaviathirivinginevyahaliyahewavinahusianasanakimazingira. Mimeahuotakutegemeahaliyanchi, umbo au surayaardhinaainayaudongo.

Hali yanchiniwastaninahaliyajotoridi, wastaniwamvua, unyevunyevuhewani, upepo, msukumonamwangawamudawamiakathelathini. Duniaimegawanyikakatikakandambalimbali. Kilakandainamimeanawanyamawaainayakekutegemeahaliyanchi. Ukandawaistiwaiunajoto, mvuanaunyevunyevumwingi. Mitiyaukandahuuhufanyamisituminene, yenyemitimirefu. Mitihiinimirefukwasbabuyamsongamanounaofanyamitiigombaniemwangawajuakwakurefuka. Katikamisituhii,

ipomimeayakangagainayotambaanakukkweamitimingine. Katikaukandawa Savanna, haliyajotonamvuasikubwakamakatikaukandawaistiwai. Kwa sababuhii, sehemunyinginivichakananyikazenyeuwezowakuotanyasizisizohitajimvua.

Upepounafaidanahasarakatikamazingira. Upepohusaidiakusukumamawinguyaletayomvua. Upepounapozidihudhurumimeanawanyamakwasababuhukaushamaliardhini, huvunjanakuharibumimea, huletavifokwawanyamanapenginekuharibumazingirayawatu. Mimeakatikamazingirahutegemeasananuruyajuailikutengenezachakulachakekiasi cha mwangaupatikanaomahali Fulani huadhirimimeanawanyamawapatikanaokatikamazingirayale.

Maswali

(a) Pendekezaanwanikwataarifauliyosoma. (alama 1)

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(b) Elezamaanayaikolojia. (alama 2)

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(c) Kwa niniwanyamahuwanasifambalimbalizakimaumbile?   (alama 2)

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(d) Ni kwavipiukandawaistiwaiunatofautiananaukandawa Savanna? (alama 3)

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(e) Ni kwanamnaganiupepounawezakuwanaatharimbayakwamazingira?
   (alama 4)

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(f) Elezamaanayamsamiatihuukamaulivyotumikakatikakifungu(alama 3)
   (i) Matamvua

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   (ii)Kusharabuhewa

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   (iii)   Istiwai

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B. <u>Soma taarifaifuatayokishaujibumaswali (alama 15)</u>

Chondepulikanikuelezenijuuyamaendeleoyavisiwavyakwetu. Katikakisiwa cha migingowatuwanaishipamojakatikavijiji.
Walianzishavijijihivikwaajiliyakuondoadhulumanadhikiya mambo mengiyalazimakwamaisha bora naustawi. Wanaishikwajasholao.
Ushirikianondiongaoyamsingiwamaendeleo.
Watuwotewakilajanibunakatikavitongojivyakisiwakizimanikamandugu.
Wotewanaishikwaumoja. Ubaguziumekwishazikwakatikakaburi la sahau.
Wotewanapendakazizaozauvuvi. Hakunaanayepigazohali. Ni aibukwakilamwanakijijikulazadamu. Shibendiyongaoyao.
Kilammojaanapiganakwajinonaukuchakujaribukuondoahaliyaunyonge, ufukara,

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ukosefunahasakuletaharakaiwezekanavyohaliyamaendeleonaustawikwaashabunaki siwa cha migingo.

Viongozinahatawazeewavijijihawaingiliisanavijijihivihataikiwakunatatizokubwa. Hatahivyoviongoziwaserikaliwanaangaliakamawatuwotewanapatachakula bora nahasawatoto, kunywamajisafiilikuepukananamagonjwa, kutoahudumakwaakina mama, watotonakuchukuahatuakadhaazakuendelezaafyayawatukwajumla. Watuwamsalabamwekunduhusaidia mambo kadhanamabwanaafyahushughulikiakuzuiamagonjwayakuambukizakwanjiayakuch anjakama vile ndui, kipindipindunakadhalika.

Watawalawamigingowanatiliamkazokwawatuwazimakuimarishauvuviambaondiou tiwamgongowakisiwahikiilikuinuahaliyauvivu, uchuminamaendeleoyakisiwakwajumla

Maswali

(a) Fupishaayaya kwanza kwamaneno 50. (alama 6, 1 utiririko)
Matayarisho

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Jibu

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(b) Bilakupotezamaanaasilia, andika mambo yotemuhimukutokaayambilizamwisho.(maneno 60) (alama 7, utiririko 1)

Matayarisho

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Jibu

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C. MATUMIZI YA LUGHA. (ALAMA 40)

(a) Kutokananakigezo cha jinsihewainavyozuiliwatajaainambilizakonsonantinautoleemifanokilamoja. (alama 2)

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(b) Fafanuamaanayashadda. (alama 2)

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(c) Bainishashamirishokipozinakitondokatikasentesnihii
Babuametengenezewakitikizurinamjukuu wake.   (alama 2)

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(d) Fafanuatofautiiliyopokatiyakishazinakirai. (alama 2)

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(e) Hukuukitoleamifanomwafaka, fafanuamajukumuyoyotemanneyaviambishiawali. (alama 2)

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(f) Undanominodhahaniakutokananakitenzi-abudu. (alama 1)

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(g) Kanushasentensiifuatayo. (alama 2)
     Ukionavyaeleavimeundwa

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(h) Nyambuavitenzivifuatavyokatikakaulizilizokwenyemabano. (alama 2)
   1. Cha (kutendwa)

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   2. Kosa (kutendesha)

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(i) Tungasentensimojakuonyeshamatumizimawiliyakiambishi –ji- (alama 2)

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(j) Tambuamiundoyoyotemitatuyanominozangeliya LI-YA. (alama 3)

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(k) Tungasentensiukitumia(alama 2)
       1. Kihusishi cha ulinganisho

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2. Kihisishi cha hasira

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l. Changanuasentensiifuatayokwanjiayamatawi. (alama 4)

Alifikakishaakaondoka

m. Andikasentensihiikatikahaliyakuamrishawingi. (alama 2)

Ondokahapa.

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n. Andikasentensihiikwahaliyaudogowingi. (alama 2)

Mtotoamefungamlangowanyumbayao.

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o. Yakinishasentensiifuatayokatikawakatiujaohalitimilifu(alama 2)

Tamimahakutuzwasikuhiyo.

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p. Andikakinyume. (alama 2)

Sufuriailiyoinjikwamekoninichafu.

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q. Andikakatikausemihalisi. (alama 3)

Mwalimualinifokeanitokehapomaramoja.

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r. Kaainamaanayaketi. Andikamaanazinginembili. (alama 2)

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D. ISIMU JAMII (ALAMA 10)

(a) Ninimaanayadhanayausanifishajiwalugha? (alama 2)

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(b)NchizaAfrikamasharikiziliundakamatiyalughailikusafirishanakukuza Kiswahili, elezamalengomannemakuunamafanikioyakekatikausanifishaji.

(alama 8)

KCSE POSTMOCKS SET 2

102/3

KISWAHILI

Karatasiya 3

FASIHI

Muda: Saa 2½

Karatasi hii ina kursa nne zilizopigwa chapa.

SEHEMU YA A: RIWAYA
Assumpata K. Matei: Chozi la Heri

LAZIMA

1. "Haiwezekani! Hili haliwekazi! Itakuwa kama kile kisa cha yule kiongozi wa kiimla wa kike"

(a) Eleza muktadha wa dondoo hili.   (alama 4)

(b) Eleza kwa kifupi yaliyowapata wahafidhina baada ya usemi huu.
          (alama.4)

(c) Riwaya ya chozi la heri inaonyesha maovu yanayotamalaki katika jamii.Thibitisha.   (alama 12)

SEHEMU B: TAMTHILIA
Kigogo.Pauline Kea.

Jibu swali la 2 au la 3

2.   Tatizo la uongozi katika bara la Afrika ni kikwazo kikubwa cha maendeleo. Kwa kurejelea
          matukio kwenye tamthilia ya kigogo, jadili ukweli wa kauli hii   (alama 20)

AU

3.   "Mtalipa kila tone la damu mlilomwaga sagamoyo ;wewe na watu wako."

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a) Eleza muktadha wa maneno haya

(alama 4)

(c) Eleza sifa za mzungumzaji

(alama 4)

(b) Thibitisha kwa kutoa mifano kuwa maisha ya anayezungumziwa yametawaliwa na dhuluma.

(alama 12)

SEHEMU YA C: HADITHI FUPI

4. Kwa kurejelea hadithi ya mapenzi ya kifaurongo, onyesha jinsi jamii imegawanyika kitabaka kuegemea.

     i. Kielimu

    ii. Kikazi

    iii. Kiuchumi   (alama 20)

SEHEMU D: SHAIRI

WASIA

5.   Huno wakati mufti, vijana nawausia
      Msije juta laiti, mkamba sikuwambia
      Si hayati si mamati, vijana hino dunia
      Uonapo vyang`aria, tahadhari vitakula

      Japo aula kushufu, na machoni vyavutia
      Dunia watu dhaifu, yaugua nasikia
      Vijana nawasarifu, falau mkisikia
      Uonapo vyang'aria, tahadhari vitakula.

      Jepusheni na zinaa, mlale penye sheria
      Msije andama baa, makaa kujipalia
      Jepusheni na zinaa, madhara kukadiria
      Uonapo yyang'aria, tahadhari vitakula.

      Ngawa waone wazuri, nadhifu kukuvalia

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Wajimwaie uturi, na mapoda kumichia
Si mlango nyumba nzuri, ngia ndani shuhudia
Uonapo vyang'aria , tahadhari vitakula.

Wawapi leo madume, anasa walopapia?
Wamepita ja umeme, leo yao sitoria
Shime enyi wana shime, bora kumcha Jalia
Uonapo vyang'aria, tahadhari vitakula

Nambie faida gani, nambie ipi fidia
Upatayo hatimani, waja wakikufukua
Ila kufa kama nyani, kasoro yako mkia
Uonapo vyang`aria, tahadhari vitakula.

Vyatiririka tariri, vina vyanikubalia
Alo bora mshairi, pa tamu humalizia
Nahitimisha shairi, dua ninawapigia
Uonapo vyang'aria , tahadhari vitakula.

Ewe Mola mtukuka, si shaka wanisikia
Wakingie wanarika, na anasa za dunia
Amina wangu Rabuka, dua yangu naishia
Uonapo vyang'aria, tahadhari vitakula.

MASWALI:

a) Ni ujumbe gani wanaopewa vijana kupitia shairi?. (alama 4)

b) Bainisha tamathali mbili za usemi katika shairi hili. (alama 2)

c) Eleza bahari ya shairi hili kwa kuzingatia vigezo vifuatavyo. (alama 2)

   i)idadi ya vipande katika mshororo

   ii) mpangilio wa vina katika beti.

d) Eleza mbinu zozote mbili za kishairi zilizotumika katika shairi hili. (alama 2)

e) Andika ubeti wa pili kwa lugha nathari (alama 4)

f) Eleza toni ya shairi hili. (alama 1)

g) Tambua: (alama 2)

   i) Nafsi neni

   ii) Nafsi nenewa

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h) Eleza umuhimu wa mbinu ya kimtindo iliyotumika katika ubeti wa tano. (alama 2)

i) Eleza maana ya msamiati: 'aula' (alama 1)

SEHEMU YA E: FASIHI SIMULIZI

6. a) Eleza maana ya miviga.

(alama.2)

b) Eleza sifa tano za miviga.

(alama.5)

c) Miviga ina udhaifu gani.

(alama.3)

d) Fafanua umuhimu wa ngomezi katika jamii.

(alama.6)

e) Eleza vizingiti viwili vinavyokumba ngomezi.

(alama.4)

Huu ni ndio ukurasa wa mwisho

KCSE POSTMOCKS SET 2

Kenya Certificate of Secondary Education

121/1
MATHEMATICS
PAPER 1
2 ½ HOURS
SECTION 1

1. Without using calculators or mathematical tables, evaluate leaving your answer in standard form.
   (3mks)

$$\frac{1.33 \times 0.51}{0.19 \times 0.0017}$$

2. Three bells are programmed to ring after an interval of 15 minutes, 25 minutes and 50 minutes. If they all rang together at 6.45am, when will they next ring together?
   (3mks)

3. The volumes of two similar solid cylinders are 1920cm^3 and 810cm^3. If the area of the curved surface of the smaller cylinder is 300cm^2, find the area of the curved surface of the larger cylinder. (4mks)

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4. Solve for x in the equation
    (3mks)
    $(3^{2x})^3 = 81 \times 9^4$

5. Class of 30 students uses 75 pencils in a term. If the number of students is reduced to 24, how many pencils are likely to be used in a term?
    (2mks)

6. An empty 300ml bottle has a mass of 270g. Calculate the mass of the bottle when it is full of a liquid whose density is $1.1g/cm^3$.
    (3mks)

7. Simplify $\dfrac{4x-20}{5-x}$ (3mks)

8. The shaded region in the figure below shows a section of a road on a roundabout. Calculate the area in cm^2. (use $\pi = 3.142$) (3mks)
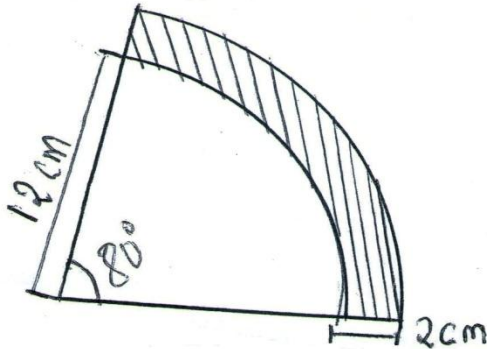
9. Solve the inequalities and represent your solution on a single number line.

$$x - 5 \leq 3x - 8 < 2x - 3$$ (3mks)

10. Tourists visits Kenya and changes $400 to ksh. At the end of the holiday, she has only ksh. 1450 left. How many dollars did she spend in the holiday if the exchange rate is as per the table below.

Currency	Buying ksh	Selling Ksh

1US dollar $	79.25	81.50

(3mks)

11. Use tables of squares, square root and reciprocal only to evaluate. (4mks)

$$(0.06458)^{\frac{1}{2}} + \left(\frac{2}{0.4327}\right)^2$$

12. Every week, the age of people who attend a cinema is recorded. In a particular week the data was as shown in the table below.

Age (year) (x)	$0 \leq x < 5$	$5 \leq x < 15$	$15 \leq x < 25$	$25 \leq x < 45$	$45 \leq x < 75$
No of people	14	41	59	70	15

On the grid provided, draw a histogram to represent the distribution.
Scale: 1cm to represent 5 units on horizontal axis
2cm to represent 2 units on vertical axis. (4mks)

13. If $\mathbf{p} = \begin{pmatrix} 3 \\ 4 \end{pmatrix}$, $\mathbf{q} = \begin{pmatrix} -2 \\ 1 \end{pmatrix}$ and $\mathbf{c} = \begin{pmatrix} 13 \\ 21 \end{pmatrix}$ Find the scalar m to satisfy the equation $5\mathbf{p} + m\mathbf{q} = \mathbf{c}$

(3mks)

14. Find the sum of interior angles of a regular polygon with 18 sides.

(2mks)

15. In the figure below, O is the centre of the circle. Chords AB and CD intersect at X. Given that CX = 8cm, XD = 5cm and XB = 4cm, calculate the length of AX and hence find the radius of the circle.

(3mks)
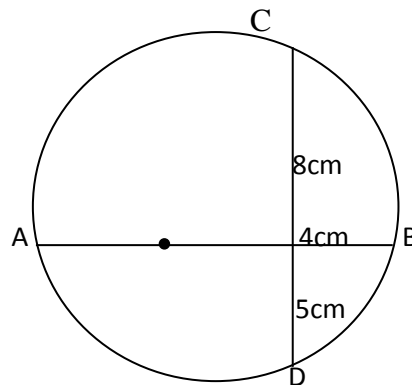
16.   Use logarithm tables to evaluate

$$\sqrt[s]{\frac{1.42 \times 0.004623}{\log 4}}$$

(4mks)

SECTION II
Answer any five questions only

17.   A sales lady dealing in shoes earn a basic salary of shs 30,000. In addition she is paid commission on the sales of shoes as follows.

		Commission
For sales up to shs 100,000		0%
For sales above shs 100,000		
(i)	For first 50,000	4%
(ii)	For next 50,000	5%
Any amount above 200,000		10%

On a certain month she sold 200 pair of shoes marked at shs 1200 a pair at a discount of 5%.

(a)   Calculate the total sales for the month.
           (2mks)

(b)   Calculate her total earning for that month.
           (4mks)

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(c)   If the next month her basic salary was increased by 10%. If she earned a total of sh. 39,160: Determine

    (i)   Her total sales for the month.
        (2mks)

    (ii)   The number of pairs of shoes she sold that month.
        (2mks)

18.   The vertices of the triangle shown below are A(2,0), B(5,3) and C(5,1)

(a)   Find the coordinates of triangle $A^I B^I C^I$ the image of triangle ABCafter a transformation by the matrix $T = \begin{pmatrix} -1/2 & 3/2 \\ 3/2 & -1/2 \end{pmatrix}$

        (2mks)

(b)   Find the coordinates of triangle $A^{II} B^{II} C^{II,}$ the image of triangle $A^I B^I C^I$ after a transformation by the matrix $S = \begin{pmatrix} 2 & 1 \\ 1 & 0 \end{pmatrix}$

        (2mks)

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(c)   Draw both triangle $A^I B^I C^I$ and triangle $A^{II} B^{II} C^{II}$ on the same grid as triangle ABC.

                     (2mks)

(d)   Determine the single matrix that can map triangle $A^{II} B^{II} C^{II}$ on to triangle ABC   (4mks)

19.   (a) using a ruler and a pair of compasses only, construct triangle PQR in which QR = 1.5CM, PR = 2.2cm and angle $PRQ = 120^0$

                     (3mks)

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(b) Measure PQ and angle PQR
    (2mks)

(c) Construct the perpendicular bisector QR and PR
    (2mks)

(d) Draw the circumscribed circle of triangle PQR
    (2mks)

(e) Measure the radius of the circle.
    (1mk)

20.   In the figure below PQR and QUV are straight lines. QS are parallel to TV. Angles SQR = 40^0 and TQV =55^0

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O – is the centre of circle
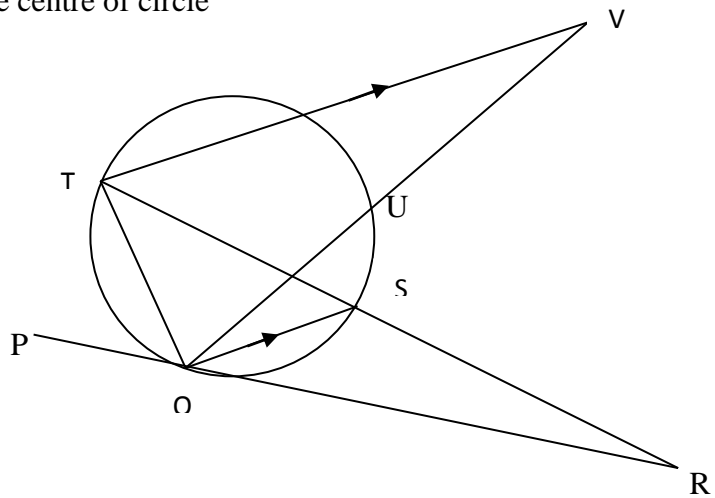
(a) Find the following angles giving reasons in each case

(i) <QTS
(2mks)

(ii) <QRS
(2mks)

(iii) <QVT
(2mks)

(iv) <QUT
(2mks)

(b) Given that QR = 8cm and SR=4cm, find the radius of the circle.
(2mks)

21.   Two towns A and B are 80km apart. James started cycling from Town A to town B at 10.00am at an average speed of 40km hr^{-1}. Mutuku started his journey from town B to A at 10.30am and travelled by car at an average speed of $60kmhr^{-1}$.

    (a)   Calculate

        (i)   The distance from A when James and Mutuku met.
               (5mks)

        (ii)   Time of the day when the two met.
               (2mks)

    (b)   Kimeli started cycling from town A to town B at 10.21 am. He met Mutuku at the same time as James did. Determine Kimeli's average speed.
                (3mks)

22.   A straight line L_1 whose equation is *3y – 2x = -2* meets the *x – axis* at R

  (a)   Determine the coordinates of R.   (2mks)

  (b)   A second line L_2 is perpendicular to L_1 at R. Find the equation of L_2 in the form

    $y = mx+c$ where m and c are constants.   (3mks)

(c)   A third line L_3 passing through (-4, 1) is parallel to L_1. Find

(i)   The equation of L_3 in the form $y=mx+c$ where m and c are constants. (2mks)

(ii)   the coordinates of points S at which L_3 intersects L_2 (3mks)

23.   (a) complete the table below for the function
$Y = x^3+4x^2+7x+6$ (give y values correct to 1dp) (2mks)

X	-4.5	-4	-3.5	-3	-2.5	-2	-1.5	-1	-0.5	0	0,5	1.0	1.5	2
X^3	-91.1	-64	42.9	-27		-8		-1	-0.1	0	0.1	1	3.4	8
$4x^2$	81	64	49	36		16		4		0	1	4	9	16
$7x$	-31.5	-28	24.5	-21		-4		-7	3.5	0	3.5	7.5	10.5	14
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Y	-35.6	-22.0	-22.4	-6.0		0.0		2.0	3.4	6	10.6	18.0		44

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(b) Draw the graph of y =x³ +4x²+7x+6 for -4.5≤ x ≤ 2 on the grid provided below (using 1cm rep 0.5 on x- axis (1cm rep 5 on y- axis)
(3mks)

(c) Use your graph to solve the simultaneous equations   (3mks)

      i. $y = x^3 + 4x^2 + 7x + 6$
     ii. $y = 10x + 15$

(d) Find a cubic equation in x whose roots are the x values you found in c above.
(1mk)

(e) From your graph state the root of $x^3 + 4x^2 + 7x + 6 = 0$
(1mk)

24.   The diagram below shows a wooden solid consisting of a cylindrical part of radius 3.5cm and a conical part of radius 4.2cm. $\left(use\ \pi = \frac{22}{7}\right)$

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657
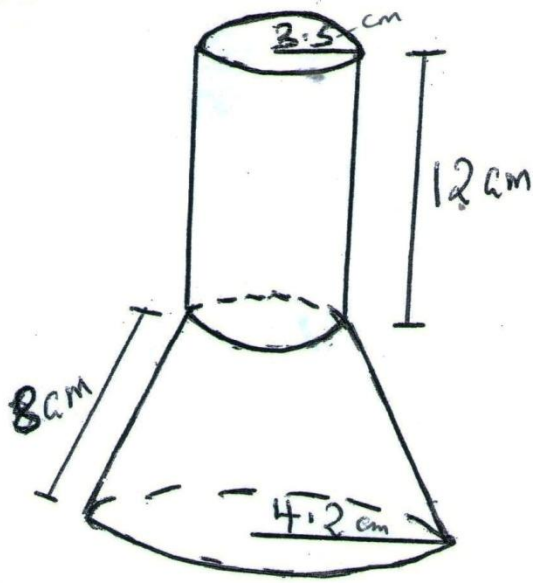
Find correct to two decimal places.

(a)   The surface area of the conical part.   (5mks)

(b)   The volume of solid.
        (5mks)

KCSE POSTMOCK SET 2

Kenya Certificate of Secondary Education (K.C.S.E)
MATHEMATICS PAPER 2

1. Solve the quadratic equation by completing the square method.
   $x^2 - 7x + 10 = 0$
   (3mks)

2. Simplify $\dfrac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}}$ by rationalizing the denominator.
   (2mks)

3. Grade x rice costs shs 75 per kg and grade y rice costs shs 50 per kg. The two grades are mixed in the ratio such that the blend costs sh 70 per kg. Find the ratio in which grade x rice was mixed with grade y rice.
   (3mks)

4. Given that A = $\sqrt[4]{\dfrac{d-c^2 g}{b+c^2 f}}$ make c the subject of the formula.

(3mks)

5. Solve the equation 2 sin (3x + 60) = 1 for $0^0 \leq x \leq 180^0$

(3mks)

6. (a) Expand and simplify $(2 - x)^8$ up to 4th term.

(2mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(b) Use the simplified expression in (a) above to estimate the value of $(1.99)^8$ giving your answer correct to 4 significant figures.
  (2mks)

7. Solve the equation $2+ \log_3 (2x - 7) = \log_3 (5x - 7)$.
  (3mks)

8. (a) Construct a triangle ABC in which AB is 2.2cm, BC is 3.5cm and angle ABC is 60^0
  (2mks)

(b) A point D moves such that it is on the same side of BC as A. Construct the locus of D such that the area of ∆ABC = area of ∆BCD.
(2mks)

9. The equation of a circle is $x^2 + y^2 - 6x + 8y - 11 = 0$. Find the coordinates of the centre of the circle and its radius.
(3mks)

10. The length of a rectangle is 8.3 cm and its width is 5.45cm. Calculate
   a) The relative error in area of the rectangle (3mks)

   b) The percentage error in area
(1mk)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

11. A triangle xyz whose area is 15.3cm^2 mapped onto $\Delta x^1 y^1 z^1$ by a transformation whose matrix is $m = \begin{pmatrix} 3 & -2 \\ -1 & 2 \end{pmatrix}$. Find the area of $\Delta x^1 y^1 z^1$. (3mks)

12. Solve the triangle (3mks)
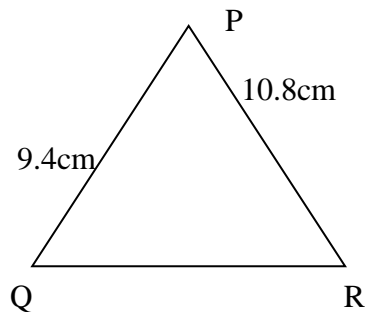
13. Fifteen men working at the rate of 9 hours per day take 20 days to complete a job. Find the number of days 27 men would take to complete the same job working at the rate of 10 hours a day. (3mks)

14. The 5th term of an arithmetic sequences is 71 and the 7th term is 59. Find
    (a) The first term and the common difference.
       (2mks)

    (b) The 10th term
       (2mks)

15. Use matrix methods to solve the simultaneous equations.
       (3mks)
    $3x - 4y = 2$
    $6x + y = 13$

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16. Factorise: $2x^2 - x - 10$

(2mks)

SECTION (II) (50MARKS)

17. The following table shows the distribution of marks obtained by 50 students of a certain school.

Marks	45-49	50-54	55 - 59	60- 64	65 - 69	70-74	75- 79
No. of students	3	9	13	15	5	4	1

(a) State the modal class

     (1mk)

(b) By using an assumed mean of 62, calculate

  (i) The mean

      (5mks)

(ii) The standard deviation
(4mks)

18. The figure below is a triangle OAB, where $\overrightarrow{OA}$ = a and $\overrightarrow{OB}$ = b. A point R divides AB in the ratio 2:5 and a point T divides OB in the ratio 1:3. OR and AT intersect at D.
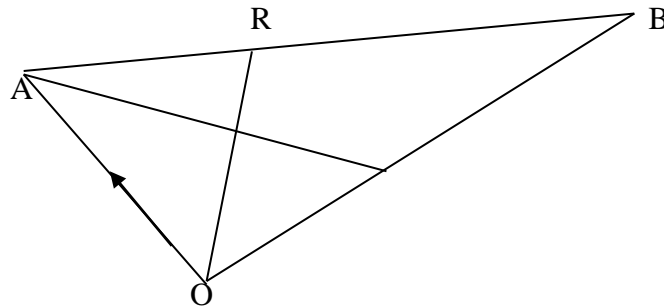
a)   Find in terms of a and b

   i)   BT
                       (1mk)

   ii)   OR
                    (2mks)

iii)   AT

                      (1mk)

b)   Given that AD = KAT and RD = hRO where k and h are scalars. Find the values of k and h, hence express AD in terms of a and b

                                    (5mks)

19. John travels to work by either boda-boda or by tuk-tuk. If he travel by tuk-tuk on every one day, there is a probability of 0.75 that he travels by a boda boda the following day. If he travels by a boda boda on any one day, then he travels by tuk-tuk the following day with a likelihood of $\frac{5}{6}$. There is a chance of $\frac{2}{3}$ that he travels by tuk-tuk on Tuesday.

   a) Draw a tree diagram to illustrate the possible outcomes in 3 days.

       (2mks)

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b) Find the probability that he travel by;
   (i) Boda-boda on Wednesday   (2mks)

   (ii) Tuk-tuk on Wednesday
                   (2mks)

   (iii)Boda – boda on Thursday   (3mks)

   (iv)Tuk-tuk on Thursday   (1mk)

20. (a) Fill the table below for the curves given by $y = 3\sin(2x + 30^0)$ and $y = \cos 2x$ for x
    value in the range $0^0 \le x \le 180^0$
                   (2mks)

x	0^0	15^0	30^0	45^0	60^0	75^0	90^0	105^0	120^0	135^0	150^0	165^0	180^0

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Y = 3 sin (2x + 30)	1.50			2.60					-2.60			1.50
Y = cos 2x	1.00				-0.87			-0.50				1.00

b) Draw the graph of y = 3 sin (2x + 30^0) Y = 3sin (2x + 30^0) and y = cos 2x on the same axes.

(4mks)

x-axis 1cm rep 15^0

y-axis 1cm rep 0.5 units

(c) Use your graph to solve the equation 3sin (2x +30^0) = cos 2x
(2mks)

(d) Determine the following from your graph

(i) Amplitude of $y = 3sin(2x + 30^0)$
(1mk)

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(ii) The period of $y = 3sin(2x + 30^0)$

(1mk)

21. An arithmetic progression has the first term as a and the common difference as d.
    (a) Write down in terms of a and d the 3rd, 9th and 25th term of the progression
       (1mk)

    (b) The progression is increasing, and the 3rd, 9th and 25th terms form the first three consecutive terms of a geometric series. If the sum of the 7th and twice the 6th term of arithmetic progression is 78, calculate
       (i) The first term and the common difference of the AP.
          (6mks)

(ii) The sum of the first nine terms of the AP. (3mks)

22. The figure below is a right rectangular based pyramid VABCD where AB =5cm, BC =7cm and VC =VB=VA=VD=13cm and O is a point on the base of the pyramid vertically below V.

Calculate
a) The length of AC
      (2mks)

b) VO the height of the pyramid.
(2mks)

c) The angle between the edge VB and the plane ABCD
(3mks)

d) The angle between the planes VBC and ABCD
(3mks)

23. Three quantities L, M and N are such that L varies directly as M and inversely as the square root of N.
a) Given that L = 2250 when M = 450 and N = 64, write down an equation connecting L, M and N.
(4mks)

b) If M decreased by 16% and N increased by 44%, calculate the percentage change in L.
    (3mks)

c) In soccer competition, the number of goals (G) scored in a penalty shoot-out is partly constant and partly varies as the skill (S) of the player. Given that G = 8 when S = 2 and G = 12 when S =4, find the value of G when S = 6.
             (3mks)

24. The table below shows income tax rates

Monthly taxable pay (k£)	Rate of tax ksh per £
1- 435	2
436 – 870	3
871 – 1305	4
1306 – 1740	5
Excess over 1740	6

A company employee earns a monthly basic salary of Ksh 28,000. He is also entitled to the following monthly allowances: house allowance of Ksh 9000, a medical allowance of sh 2000 and a commuter allowance of shs 1480.

(a) Calculate his total income tax.
        (5mks)

(b) He is entitled to a personal tax relief of Ksh 1056 per month. Determine the net tax.

        (1mk)

(c) If he received a 50% increase in his total income, calculate the corresponding percentage increase on the income tax.
                (4mks)

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KCSE POSTMOCK SET 2

The Kenya Certificate of Secondary Education
Physics Paper 1

SECTION A (25 MARKS)

1. A spherical ball bearing of mass 0.0024 kg is held between the anvil and spindle of a micrometer screw gauge. The reading on the gauge when the jaws are closed without anything in between is 0.11mm. Use this information and the position of the scale in the **figure 1** below to answer the questions **(a)** and **(b)** below:
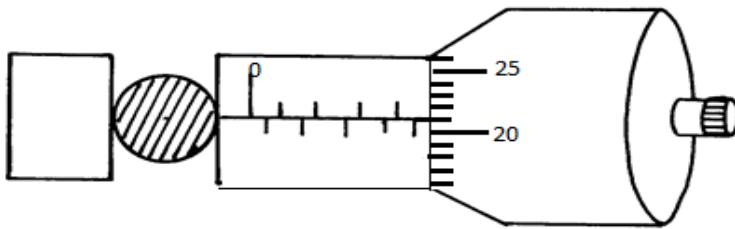
fig 1

    a) What is the diameter of the ball bearing?   (1 mk)

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    b) Find the density of the ball bearing correct to 3 significant figures   (2 mks)

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2. The diagram below shows a wire loop with two threads tied across it. The loop is dipped into a soap solution such that the soap film covers it as shown in **fig 2**

Fig 2

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657
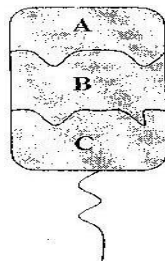
Region B is punctured such that the soap film in that section is broken. On the space alongside the diagram sketch the resulting shape of the wire loop. Give a reason for the shape.   (2 mks)

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3.   The **figure 3** below shows an arrangement to demonstrate diffusion through solids:-
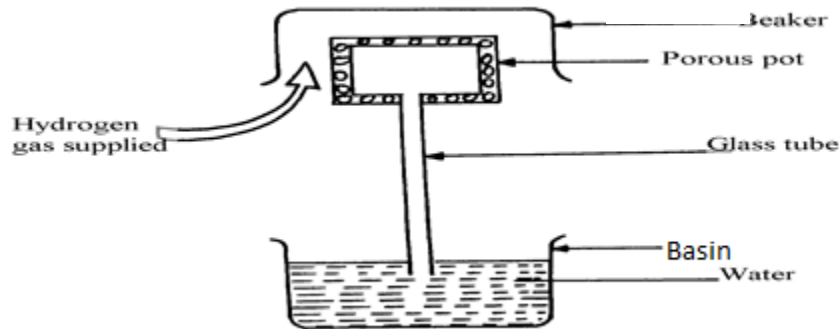
The hydrogen gas is supplied for sometimes then stopped and the beaker removed. State and explain what is likely to be observed when the hydrogen gas supply is stopped   (3 mks)

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4.   Figure 4 shows two identical thermometers. Thermometer **A** has a blackened bulb while thermometer **B** has a silvery bulb. A candle is placed equidistant between the two thermometers

Fig. 4
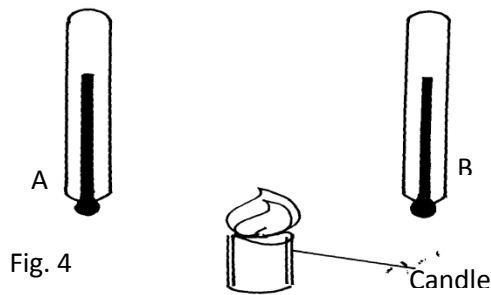
State with a reason the observations made after some time(2 mks)

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5. A car being driven on a horizontal straight road accelerates uniformly from O to 20m/s. In the first 10s. It continues at that speed for the next 40s and then decelerates to a stop in 5s. Sketch the velocity time graph for its motion. (2 marks)

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6.   A uniform metre rule is balanced at its centre. It is balanced by the 30N, 5N and the magnetic force between **P** and **Q**. **P** is fixed and **Q** has a weight of 5N
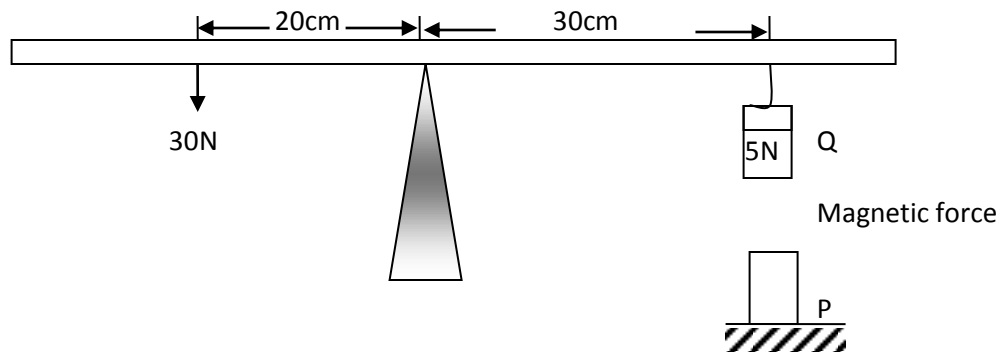
Fig 5

a) Ignoring the weight of the metre rule, calculate the value of the magnetic force between Q and P (2 mks)
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b) Given that the lower end of Q is North pole, state polarity of the end of P facing Q.

(1 mk)

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7. (a) Give a reason why water is not suitable as a barometric liquid. (1 mk)
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(b)Explain why a lift pump is unable to raise water from a borehole where the level of water is 20m below the ground level.   (1 mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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8. The diagram below shows a mass of 12g hanged on a set of 6 identical springs.

When a mass of 12g was hanged on spring A alone, its extension was 5cm. Find the extension of the combination shown if each spring and each rod has negligible mass (2 mks)
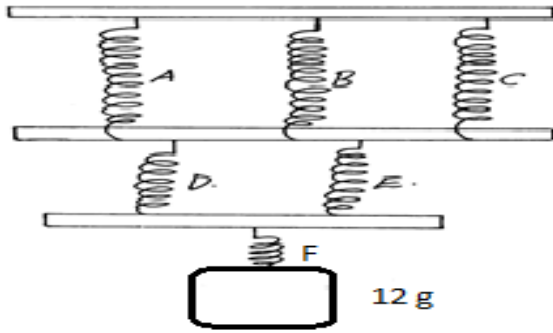
fig 6

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9. Sea water of density **1.04g/cm^3** is being pumped into a tank through a pipe of uniform cross-sectional area of 3.142cm^2. If the speed of water in the pipe is 5m/s, determine the mass flux in S.I unit. (2 mks)

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10. Below shows a displacement – time graph.

Displacement (m)

O   Time (s)
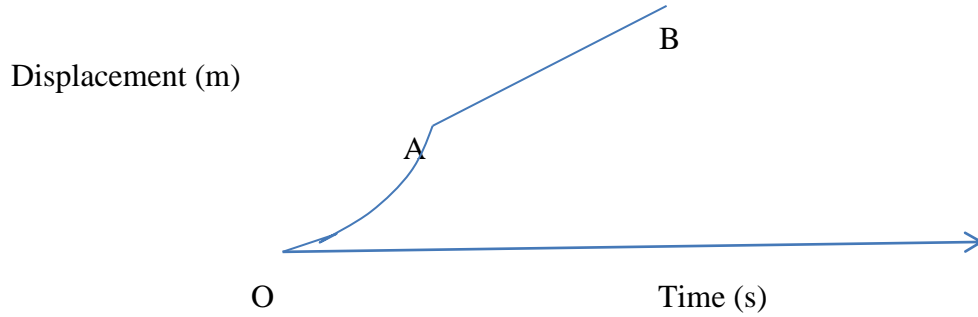
Describe the motion of the body between points:

OA…………………………………………………………………………… (1 mk)

AB…………………………………………………………………………..(1 mk)

11. A quantity of air occupied 500cm^3 at 15^{0}C when the pressure was 76 cmHg. At what temperature would it occupy 460cm^3 if the pressure was 85cmHg?   (2 mks)

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SECTION B (55 MARKS)

12.a) State the pressure law for an ideal gas.(1 mark)

c) The set up shows an arrangement to determine the relationship between temperature and pressure of a gas at constant volume.

Bourdon pressure gauge

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Fig 7

Thermometer ↘

Dry air

water

heat
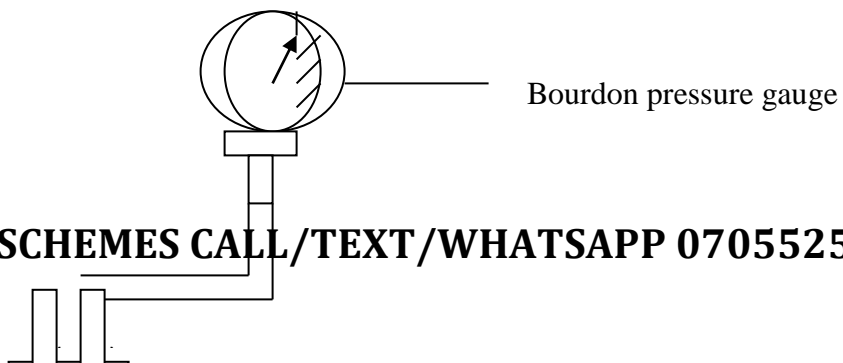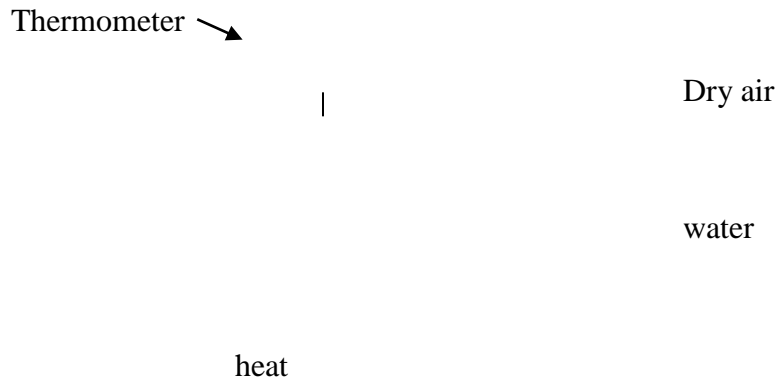
i)   Describe how the measurements are obtained in the experiment (3 marks)

ii) Explain how the results from the experiment can be used to determine the relationship between temperature and pressure (2 marks)

c) A bicycle tyre is pumped to a pressure of 2.2×10^5 pa at 23°c. After a race the pressure is found to be 2.6×10^5 pa. Assuming the volume of the tyre did not change, what is the temperature of the air in the tyre. (3 marks)

d)   Air is trapped inside a glass tube by a thread of mercury 240mm long. When the tube is held horizontally the length of the air column is 240mm.

240mm   240mm   750mmg   fig 8
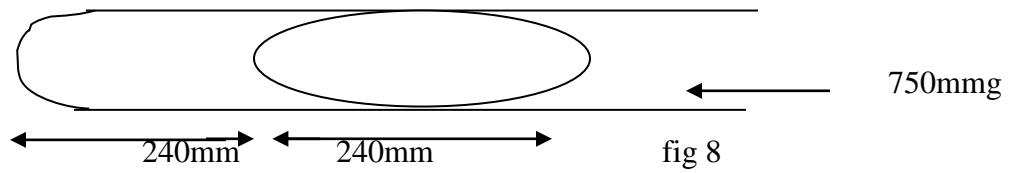
Assuming that the atmospheric pressure is 750mmHg and the temperature is constant, calculate the length of the air column when the tube is vertical with open and down.

(3 marks)

13. (a) An object is released to fall vertically from height of 100m. At the same time another object is projected vertically upward with velocity of 40m/s.

  (i) Calculate the time taken before the objects meet   (3mks)

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  (ii) At what height do the objects meet?   (2mks)

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(b)   A string of negligible mass has a bucket tied at the end. The string is 60cm long and the bucket has a mass of 45g. The bucket is swung horizontally making 6 revolutions per second. Calculate
  (i)   The angular velocity   (2mk)

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  (ii)   The angular acceleration   (2mks)

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    (iii)   The tension on the string   (2mks)

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(iii)The linear velocity   (1mk)

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14.   a) State Archimedes' principle.   (1mk)

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    (b) The figure 9 below shows a rectangular buoy of mass 4000kg tethered to the sea-bed by a wire. The dimensions are 4m x 1.5m x 2.2m.
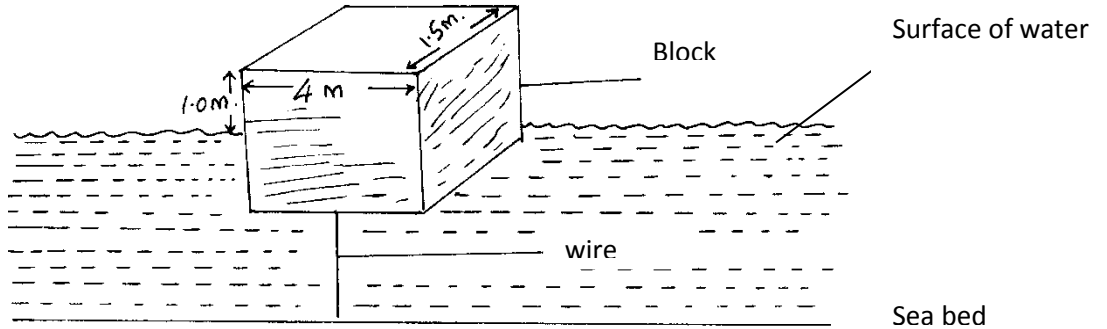
Calculate the :-

    (i) Weight of sea water displaced by the buoy (density of sea water = $1100kg/m^3$)

                       (3 mks)

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    (ii) Upward force exerted on the buoy by the water.   (1mk)

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    (iii) Tension in the wire   (2mks)

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(c) A test tube of mass 10g and uniform cross-sectional area 4cm^2 is partly filled with lead shots and floats vertically in water with 5cm of its length submerged.

fig10
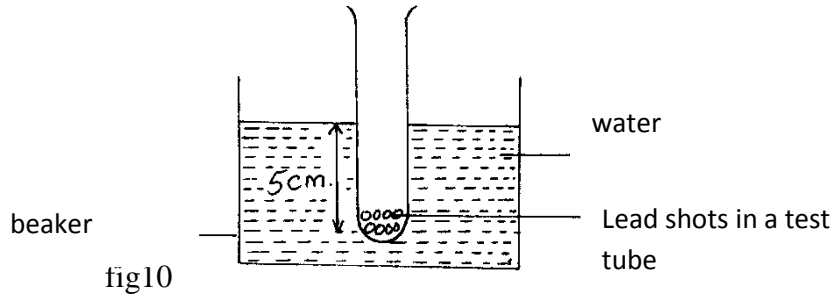
Find the:-
(i) Mass of the lead shots.   (2mks)

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(ii) Length of the test tube that would be submerged in a liquid of density 0.75g/cm^3.

(2mks)

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15. (a) State two differences between boiling and evaporation.   (2 mk)

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(b) 1200g of a liquid at 10^{0}C is poured into a well-logged calorimeter. An electric heater rated 1KW is used to heat the liquid. The graph in fig 4 below shows the variation of temperature of the liquid with time.
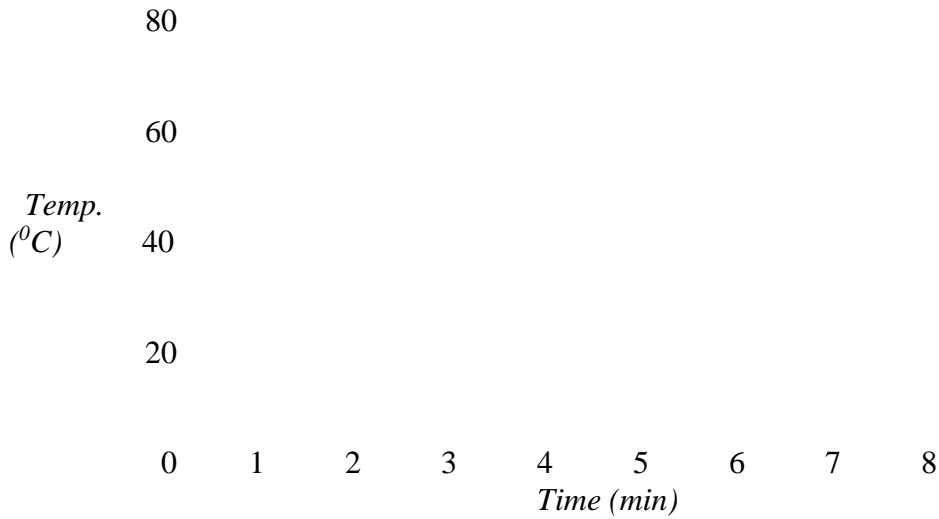
100

80

60

Temp.
(^{0}C)   40

20

   0   1   2   3   4   5   6   7   8
Time (min)
Fig. 4

Use the graph to answer the following questions:

(i)   What is the boiling point of the liquid?   (1 mk)

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(ii)   How much heat is given out by the heater to take the liquid to the boiling point?

    (2 mks)

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(iii)   Determine the specific heat capacity of the liquid stating any assumptions made.

                                    (2 mks)

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(iv)   If 50g of the liquid vapour was collected by the end of the 8th minute, determine the specific latent heat of vaporization of the liquid. (2 mks)

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16. (a) (i)State Newton's second law of motion.   (1 mk)

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      (ii) A striker kicks a ball of mass 250g initially at rest with a force of 75N. if the foot was in contact with the ball for 0.10sec. Calculate the take off velocity of the ball.   (2 mks)

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    (b)A bullet of mass 20g moving at 400 m/s strikes a block of wood of mass 3.5kg initially at rest. The bullet sticks into the block and the two move off together on a horizontal surface,where a frictional retarting force of 4N is acting between the block and surface.
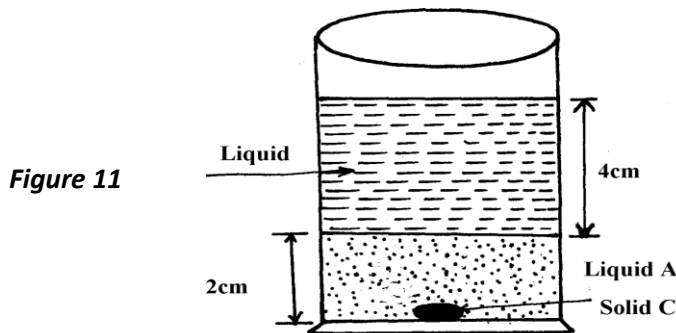
     (i) Determine the initial common velocity of bullet and wooden block.(2 mks)

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(ii) What distance does the block move before coming to rest?   (3 mks)

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    (c) Two immiscible liquids are poured in an open container to the levels shown in the diagram below.

Figure 11

If the densities of the liquids **A** and **B** are 1g/cm^3 and 0.8g/cm^3 respectively and the atmospheric

pressure 760 mmHg, find the total pressure acting upon solid **C** at the bottom of the container.

(Take density of mercury to be 13.6g/cm^{3}and g = 10 N/Kg)   (3 mks)

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