mwalimuepublishers@gmail.com

HOLIDAY ASSIGNMENT

FORM 4 SET 1 ALL SUBJECTS

Attempt this assignment &Present on Opening Day

For Marking Schemes/Answers Call 0705525657

NAME: …… ADM NO: ……..

SCHOOL: …… CANDIDATE'S SIGN: ……

ENGLISH PAPER 1

PAPER 1: FUNCTIONAL SKILLS

1. Imagine you had some guests from Sweden who visited you to celebrate your birthday. They enjoyed the special meal that you had prepared for them. One of them has requested for the recipe. Send it by e-mail. (20mks)

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2. CLOZE TEST

The broadened freedom of speech bestowed upon people ---------- the rise of social media platforms does have its merits, as many now ----------a platform where they can ---------- their concerns about injustices within the society. ----------, everything has its good things and bad things as ----------. The freedom on social media has also rendered these avenues ----------grounds for hate ----------. Many use it to promote their bigoted ideology. They encourage hatred ---------- warring individuals or parties simply because they are ---------- to the views, beliefs, or behavior that differ from ----------.

3. ORAL SKILLS

Read the oral poem below and respond to the questions that follow.

A BAREFOOT BOY

A barefoot boy! I mark him at his play…
For May is here once more, and so is he,…
His dusty trousers, rolled half to the knee,
And his bare ankles grimy, too, as they:
Cross- hatchings of the nettle, in array
Of feverish stripes, hint vividly to me
Of woody pathways winding endlessly
Along the creek, where even yesterday
He plunged his shrinking body – gasped and shook
Yet called the water 'warm' with never lack
Of joy. And so, half enviously I look
Upon this graceless barefoot and his track,…
His toe stubbed…, his big toe-nail knocked back
Like unto the clasp of an old pocketbook.

i) Identify and illustrate two devices that make the poem musical. (2mks)

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ii) How would you effectively recite line 13 of this poem? (2mks)

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iii) Which word would you stress in line 12? Give a reason. (2mks)

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b) One of the features in listening skills is maintaining a meaningful eye-contact with the speaker. Why do you think it is important to do so? (3mks)

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c) Consider the following oral literature item.

Mi moet moet a moita (There is a wound in a calf's stomach)

i) Classify the above genre (1mk)

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ii) Identify and illustrate two features of sound in the above genre. (2mks)

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iii) Explain what is lost if the item above is translated from its original language. (2mks)

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iv) Give one role of the above item (1mk)

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d) Underline the silent letter(s) in the following words (3mks)

i) sword

ii) debris

iv)grandmother

iv) bouquet

v) victual

vi)corps

e) Which is the odd one out in the following groups of words based on the underlined sounds? (3mks)

a) beer	bare	bear	pair
b) tough	giraffe	dough	photograph
c) honest	honour	heifer	heir

f) For each below, provide another that is identical in pronunciation. (4mks)

i) clue

ii) sole

iii) board

iv) tear

e) Imagine you are the leader of a discussion group in your class. How would you ensure that the discussion is fruitful. (5mks)

SET 1 HOLIDAY ASSIGNMENT

ENGLISH PP2

COMPREHENSION

Read the following passage and then answer the questions that follow.

Unscrupulous as he was, Kwame Asante had a qualm as he looked at the woman sitting on the African stool near the bed. He had called her and yet when she came he did not quite know how to begin the conversation.

"Akosua, how would you like fifty pounds to start a small business of your own – selling cloths or perfume and powder?" The woman smiled nervously. Ten years of married life had made herwary of her husband's fits of generosity.

She was as black as ebony, with the fine features peculiar to the girls of the Akwapim hills; graceful in her brown and red design cloth and the lovely silk head-tie wrapped round her head. Her feet were shod in 'spitfire' sandals and on her tiny ears she had the popular golden ear-rings named 'Abongo'.

The slender woman on the stool was the mother of three children though she still looked a girl. Married under the native customary law, she had served her lord and master with zeal and zest. It is a law which as some other law in the Gold Coast, needs disinfecting for though it aids the man to gain his desire when it is at its fiercest, it in no way safeguards the position of the woman when the man's passion abates.

"Would you like fifty pounds?" asked Kwame again. "Could make it a hundred. You have been a very good wife to me, Akosua." Did the truth begin to dawn on the woman's consciousness? No. She thrust the thought away from her. 'He could not do it'.

Kwame cleared his throat – after all he might as well get it off his chest: hadn't she noticed that the whole relationship had become impossible? A cloth woman was all right when one was young and struggling. She could be so useful – a general servant, and yet a wife. Akosua was so gentle, and even quite

refined, but a man needs a change. He had just completed his two-storied building and he had been made a committee member of an important club. The other day his academy had conferred on him an associateship and his university had given him a coveted degree. He had at last achieved his ambition and had become an important man in the community. He was thinking seriously of entering the town council.

Fancy being addressed councilor Kwame Asante, O.B.A…. A.S.S. He smiled inanely to himself. Akosua looked at him in wonder.

"Er….. er…. Akosua…., I want to tell you I am going to marry a lady; you will be paid off with a hundred pounds. A…. frock….. lady….um…..er …. of course you can read and write Ga and Twi but my friends will call you an illiterate woman."

"Did you consult your friends before you married me ten years ago?" The voice was cold and calm, yet the words cut like a whip.

"If you are going to be impertinent, I shall not discuss the matter further." He got up and walked up and down the room. "How many men in the Gold Coast will pay a woman off with one hundred pounds? You are only entitled to twenty-five pounds and here I am out of kindness offering you a hundred. Show some gratitude, Akosua." Akosua looked at him. Stark misery was in her eyes.

"I shall send the children to Achimota College." There was a whining note in his voice. "I am only doing this because of my position in society. You see I may be called to Government House and other important places……. say somethingAkosua.

"I say you can keep your twenty five pounds, fifty pounds or a hundred pounds. I will have nothing to do with it. I will not be paid off.

"What! What! Come! Come! Don't do anything rush!"

"If you dare touch me I shall strike your face."

"Strike your master, your husband! Are you mad?"

"I shall leave this house."

"If you dare to disgrace me by leaving the house before I am ready for you to go, there will be trouble. I do not intend to put up with a willful woman. What is my sin after all? I only want to become a decent and respectable member of society. If you leave this house without my knowledge and permission, I shall claim every penny I have spent on you since I married and lived with you these ten years; and not only that but I shall claim all the presents I have given to your parents and other relatives. You know our native customary law."

"Yes, I know your native customary law. It is a grave to bury women alive whilst you men dance to the tom-tom on top of the mound of earth."

Questions

i) Why does Akosua smile nervously when Kwame offers her fifty pounds to start a small business of her own? (2mks)

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ii) Explain the effect of Akosua's silence on Kwame? (2mks)

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iii) In not more than 60 words, summarize the reasons for Kwame's intention to marry another wife.

(4mks)

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v) Identify a statement from the passage which proves that Kwame was ashamed of the action he was about to take. (1mk)

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vi) What is Kwame Asante's burning ambition? (1mks)

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……

vii) Rewrite the following sentence in reported speech

'*Did you consult your friends before you married me ten years ago?*' *Akosua asked Kwame.*

(1 mks)

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viii) Give an instance of irony in the passage. (2mks)

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ix) *'It is a grave to bury women alive whilst you men dance to the tom-tom on top of the grave.'*
Explain the meaning of this statement. (2 marks)

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x) What is Kwame's attitude towards women? (2mks)

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xi) Explain the meaning of the following words and phrases as used in the passage. (3 mks)

a) Disinfecting ……..

b) The words cut like a whip …….....

c) Impertinent ……...

LITERARY APPRECIATION:

BLOSSOMS OF THE SAVANNAH

Read the following excerpt and answer the questions that follow.

Although Resian had a lot to complain and grumble about in life in their new environment, Taiyo found it tolerable. For instance,

she gladly discovered that mornings in their new home began with a lively chatter of birds in the trees surrounding their house. That gave the home an atmosphere of tranquility and peace.

However, one of the unpleasant aspects that the girls had to live with was the constant violation of their privacy. In Nasila, they soon discovered, the home belonged to all the clan members. It was not an unusual thing to get up in the morning to find the

living room full of men and women who came early, not for any tangible business, but simply to share a sumptuous breakfast with their kith and kin. Taiyo and Resian were soon to get used to hearing an urgent knock at the door very early in the morning.

On opening, they would invariably be met by a grinning group of men or women who would unashamedly ask them what they were doing in bed that late in the morning. They would proceed to take seats in the living room and order them to serve them breakfast. When they got used to what at first, they considered negative aspects of the Nasila culture, Taiyo and Resian adjusted accordingly and soon they began to live harmoniously with the people. Their father was out of the homestead most of the time working at the shop and organizing other business matters. His absence meant the absence of his irksome and corrosive remarks that always heightened tension in the house. In his absence, the house was a continuous joy with comfort and conveniences, and the girls found it pleasurable to keep it clean and well-arranged.

Questions

A) What happens immediately after this extract? (5 marks)

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B) Where had the family been living before and why did they move? (3 marks)

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C) Give the character traits of the following: (6marks)

Taiyo

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……

The people of Nasila

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D) Discuss a theme implied in the extract. (4 marks)

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E) Using the rest of the book, cite and explain one cultural aspect that had a life changing effect on the lives of the two girls (4mks)

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F) Explain a stylistic device used in the extract. (2mks)

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G) Taiyo and Resian adjusted accordingly? Add a question tag. (1mk)

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ORAL LITERATURE

The Man, His Son and The Squirrel

There was a certain town whose only occupation was catching squirrels (ground squirrels). There was a man in this town who excelled at catching squirrels. One squirrel was so smart that it eluded everyone in town. It was said that only this man said to his son, "Come, let's go to catch the squirrel." They took an axe; they found the squirrel near its hole. Then the squirrel ran and entered its hole. They searched out all the holes, then they stopped them up. Then the man said to his son, "Don't let the quirrel get out of its hole." He answered, "Okay." But one hole wasn't stopped up, and the squirrel escaped. When it escaped, the father came to his son and said to him, "Why did you let it escape? If I go home now, I will beashmed." He

grabbed the axe and struck his son. Then he went on his way and left his son unconscious. Ants began to fill his eyeballs an his ears; vultures were circling above him.

In the afternnon, the headman of a rich caravan arrived at the spot. When he arrived, he setp up camp. Then he got up and went for a stroll and saw the boy. He called his slaves to take him and have him washed and shaved. The boy recovered. The headman had no offspring. When he took the boy, he decided that he would make him his son. He sent a message to the chief of the town, telling him that he had an offspring, that he was happy he had become a complete man, and that he would now receive the gifts due to him.

The chief said, "This is a lie. He is not his son. If he is his son, then let him come that I can see." Then the headman arrived in town. The chief gave his sons horses worth ten pounds. He said, "Go and join the son of the headman. Have a race. When you finish give these horses away" (forcing him to do the same). They did it and they returned. the next day, the chief again gave them horses worth ten pounds. They did as the day before. They did it five times. They ran out of horses. Then the chief said, "Indeed, it is his son I have run out of horses. If it weren't his son, he wouldn't agree to let him give his own horses away to match the presents." Then the chief summoned his daughter. The Gralladima brought his to help. The Madaki also gave, and the Makama gave. Altogether, four wives. The chief gave a big house. The headman came and brought twenty concubines and gave to his son. There was continuous feasting.

Then one day the son saw his father, the one who had knocked him down with the axe because of the squirrels. The father came to the house of his son and said, "Throw away your gown and start catching squirrels." The slaves of the headman said, "This is a crazy man, let us all strike him." The boy said to him, "This is my father, the one who sired me." The headman said, "I have already lied to the chief. Let us keep that secret. I will give your father wealth. Let him go home. Should he want to see you, let him come to visit you. If you want to see him, then you can go and visit him." The real father said he did not agree. Then the headman said, "Well then, let us go out in the countryside." They went. The headman unsheathed his sword. He handed it to the son, and said, "Kill one of the two of us." Here ends the story.

Questions

(a) **(**i) Classify the above narrative. (1 mk)

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……..

(ii) What are the characteristics of the above classification? (2 mks)

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……..

4. What is the function of this narrative? (1 mk)

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(b) Identify and illustrate any <u>three</u> features of oral narrative evident in the story. (6 mks)

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(c) Give <u>one</u> economic activity that is undertaken by the community referred to in this narrative. (2 mks)

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(d) Describe the character of the following:

a) The young man (2 mks)

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……..

(ii) his father (2 mks)

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(e) Whom do your think would be the most appropriate audience of this story. (2 mks)

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(f) What is the moral lesson of this narrative? (2 mks)

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GRAMMAR

A. Rewrite the following sentences as instructed.

(i) (a) The photographs will be taken at the venue of the wedding. The photographs will be taken in a reputable studio. (Combine into once sentence using 'either …..or,,,,') (1 mk)

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……

(b) Neither the children nor the peasant ……allowed to go to the hall yesterday.
(Rewrite filling the blank with an appropriate auxiliary verb). (1 mk)

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……

(ii) (a) The principal noticed serious laxity among the students. He warned them against such behaviour. (Combine the sentence using present participle.) (1 mk)

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(b) The farmer's cow gives twenty-five kilos of milk everyday. He feeds and waters it very well.
(Combine using the present participle). (1 mk)

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……

(iii)Underline the gerund in the following sentence.

Kibet is studying but swimming is his hobby. (1 mk)

(iv) Replace the underlined word with a phrasal verb.

(a) It is not good to despise other people. (1 mk)

……

(b) I am currently living with my brother in Karen. (1 mk)

……

(c) The principal was annoyed with the three boys. (1 mk)

……

B. Rewrite the following sentences correcting the errors.

(i) There are situations of which you need to act with speed or else the consequences will catch up with you. (1 mk)

……

……

(ii) She likes football as it is more superior than hockey. (1 mk)

……

C. Fill in the blanks with the appropriate prepositions.

(i) He was charged …….forging property inheritance document. (1 mk)

(ii) Kamau deals ……..groceries. (1 mk)

D. Give two meanings from the sentence below.

"Did you see the girls with a telescope?" (1 mk)

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E. Use the correct form of the words in the brackets to fill in the blanks.

(i) The couple has applied for a divorce over ……..……differences. (reconcile). (1 mk)

(ii) That matter is highly ……..(contest) in a court of law. (1 mk)

SET 1 HOLIDAY ASSIGNMENT

ENGLISH PP3

I) Imaginative composition (compulsory) (20 marks)

Your relatives have organized a farewell party for you in preparation for your departure to the USA for further studies. Write the speech that you will deliver on that day.

2) Drama (compulsory) (20 marks)

The past always catches up with the present, sometimes with some unintended consequences. Using the play, A Doll's House, explain this statement.

3) Optional set texts

Either (20 marks)

a) The Short Story

The grass is always greener on the other side of the fence. Using the stories in the anthology, Memories we Lost and other Stories, discuss this adage. (20 marks)

Or

b) Drama

Using the play, Inheritance, explain the saying: the mouth that eats the seeds asks what it will plant. (20 marks)

Or

c) The Novel

The sea shapes the destiny of the Kino family. Discuss this statement using the book The Pearl. (20 marks)

SET 1 HOLIDAY ASSIGNMENT

CHEMISTRY PP1

1 . Gas X was found to decolorize moist litmus paper. A colorless solution of potassium Bromide turned red-brown when gas X was passed through it.

a) What is observed when gas x is passed through potassium iodide solution**.** **(1mark)**

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b) Write an equation to accompany the observation in (a) above. **(1 mark)**

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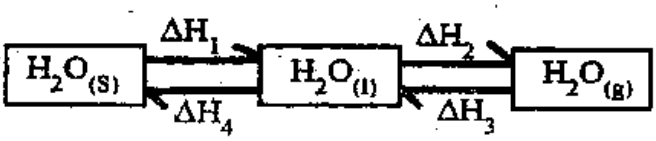
……

2. An organic compound J has the following percentage by mass, carbon, 64.86%, hydrogen, 13.51% and the rest oxygen. The relative molecular mass of the compound is 74. Work out the molecular formula of compound J. [C=12. H=1 O=16] **(3 marks)**

3. The scheme below shows the energy changes that are involved between ice, water and steam. Study it then answer the questions that follow



(a) What name is given to the process represented by energy change ΔH_4? **(1 mark)**

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(b) What is the sign of ΔH_3? Give a reason **(2 marks)**

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4. A fixed mass of a gas has a volume of 250cm^3 at a temperature 27°C and 750mmHg pressure. Calculate the volume the gas would occupy at 42°C and 750mmHg pressure. (0°C = 273K) **(3 marks)**

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5. Complete the table below to show the number of the sub-atomic particles of the given nuclides. X and Y are not actual chemical symbols. **{3 marks}**

	Number of		
Particle	Protons	Neutrons	Electrons
$^{34}_{16}X^{-2}$			
$^{56}_{26}Y^{+3}$			

6. 100cm³ of 2M nitric acid reacted with 12.5g of a carbonate of metal M. (MCO_3) according to the following equation

$$2HNO_{3(g)} + MCO_{3(S)} \rightarrow M(NO_3)_{2(aq)} + CO_{2(g)} + H_2O_{(l)}$$

a) Calculate the number of moles of MCO_3 that reacted with nitric acid. **(2 marks)**

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b) Calculate the relative molecular mass of MCO_3 **(2 marks)**

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7. (a) Name the substance formed when soap is used to wash in hard water **(1 mark)**

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(b) Give one advantage of drinking hard water **(1 mark)**

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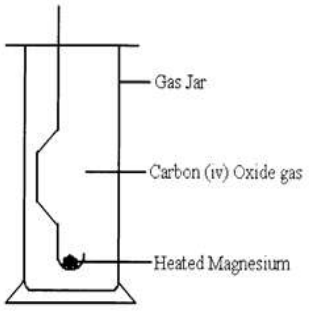
8. The diagram below a heated magnesium metal lowered inside a gas jar of carbon (IV) oxide.



Study it and answer the questions that follow.

(i) State **two** observations that can be made during and after the experiment **(2 marks)**

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(ii) Write a balanced chemical equation for that reaction. **(1**

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9. The pH values of some solutions labeled **E** to I are given in the table **below**. Use the information to answer the questions that follow.

pH	14.0	1.0	8.0	6.5	7.0
Solution	E	F	G	H	I

(a) Identify the solution with the highest concentration of hydroxide ions **(1 mark)**

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(b). Which solution can be used as a remedy for acid indigestion in the stomach? **(1 mark)**

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(c) Which solution would react most vigorously with magnesium metal? **(1 mark)**

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10. 120cm^3 of nitrogen gas diffuses through a membrane in forty seconds. How long will it take 240cm^3 of carbon (IV) oxide to diffuse through the same membrane (C=12,N=14,O=16)

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11. The table below shows the relative atomic masses and the percentage abundance of the isotopes **L_1** and **L_2** of element **L**.

Isotope	Relative atomic mass	% abundance
L_1	62.93	69.09
L_2	64.93	30.91

Calculate the relative atomic mass of element **L** **(3 marks)**

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12. Use the information in the table about group 1 elements to answer the questions that follow

Element	Atomic radius(nm)
Lithium	0.123
Sodium	0.157
Potassium	0.203

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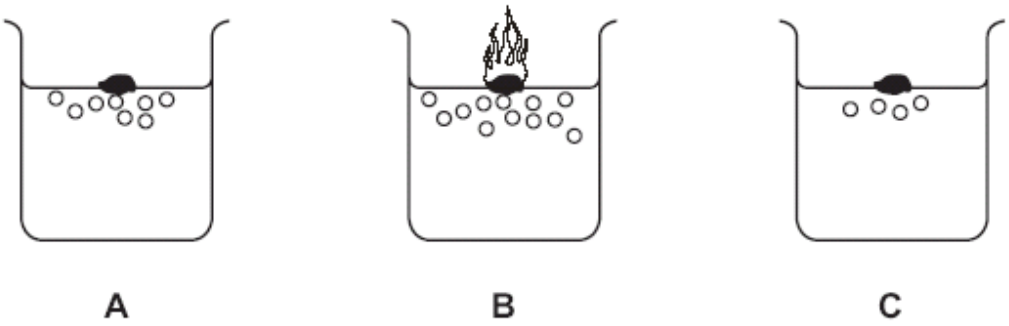
When the group 1 elements react with water, hydrogen gas is given off. The diagram shows the reaction of the above three elements with



A B C

wat er

(e) What is the general name of the group one elements **(1 mark)**

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(f) Which one of these elements A, B or C is Lithium? **(1 mark)**

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(c) Apart from fizzing describe **two** things that you would see when sodium reacts with water. **(2 marks)**

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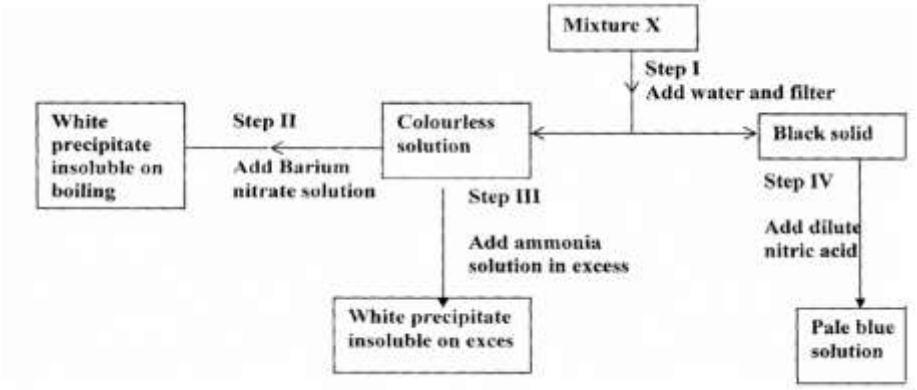
13. Study the chart below and answer the questions that follow.



(a) Name:

(i) Cations present in mixture X. **(1 mark)**

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(ii) Anions present in the solution. **(1mark)**

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(b) Write an equation to show how the white precipitate in step III dissolves. **(1 mark)**

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(c) Name the process outlined in step IV above. **(1 mark)**

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14. Use the information in the table below to answer the questions that follow

Element	Sodium	Magnesium	Phosphorus	Chlorine
Electric conductivity	Good	Good	Poor	Poor
M.P (^oC)	98	660	44/115	-173

(a) Explain why both Sodium and Magnesium conducts electricity while phosphorus and chlorine do not.
(1 mark)

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(b) Suggest a reason why phosphorus has been assigned two melting point values
……

c) Explain why atomic radii of elements in period 3 decreases generally from left to right in the periodic table **(1**

……

15. In an experiment, soap solution was added to three samples of water. The results below shows the volume of soap solution required to lather with $500cm^3$ of each water sample before and after boiling.

	Sample 1	Sample 2	Sample 3
Volume of soap used before water boiled	26.0	14.0	4.0
Volume of soap after water boiled	26.0	4.0	4.0

(i). Which water samples are likely to be soft **(1 mark)**

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(ii) Explain the change in volume of soap solution used in sample 2 **(1 mark)**

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16. Describe how the following reagents can be used to prepare lead sulphate. Solid potassium sulphate, solid lead carbonate, dilute nitric acid and distilled water. **(3 marks)**

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17. Using dots (.) and crosses(x) to represent -electrons show the bonding between oxygen and carbon to form carbon (ii) oxide. **(1 mark)**

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18. 10g of ethanol (C_2H_5OH) were completely burnt in air. The heat evolved caused the temperature of $400cm^3$ of water to change from 20^0C to 85^0C. Calculate the molar enthalpy of combustion of ethanol.

(H = 1, C = 12, O = 16. Specific heat capacity of water = 4.2 $Jkg^{-1}k^{-1}$) **(3 marks)**

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19. The structures below represent two cleansing agents where R is along hydrocarbon chain. Which of the two cleansing agents is suitable for washing in water containing Calcium ions. Give a reason

20. Give the IUPAC name of the following organic compounds; **(2 marks)**

a) $CH_3CH_2CH_2CH_2CH_3$

b) $CH_3CHCH_2CH_2CH_3$

CH_3

21 . The products formed by action of heat on nitrates of element A, B and C are shown below

Nitrate	Products formed
A	Metal oxide +Nitrogen (IV) Oxide + Oxygen
B	Metal +Oxygen (IV) Oxide
C	Metal nitrate + oxygen

(a) Arrange the metals in order of reactivity **(1 mark)**

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(b) Which element forms a soluble carbonate **(1 mark)**

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….

Give an example of B **(1 mark)**

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22. Propane C_3H_8 and Carbon(IV)oxide diffuses at the same rate under the same conditions. Explain **(1 mark)**

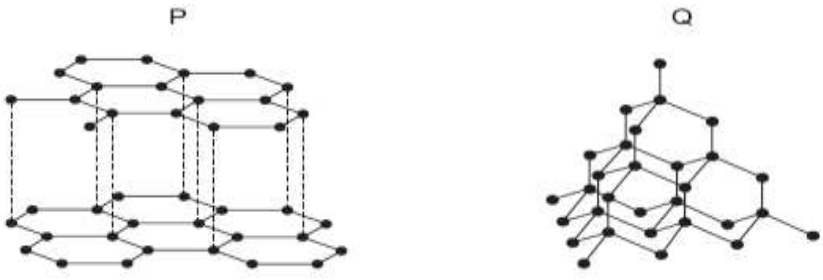
23. Although there are large reserves of iron and aluminium ores in the world, both metals are recycled.

I. State one social benefit of recycling **{1 mark}**

II. Why is it particularly easy to separate iron from other scrap metals?
{1mark}

III. It is cheaper to recycle aluminum than it is to extract the metal from its ore. Give a reason. **{1 mark}**

24. The diagrams show the structures of two forms, P and Q, of a solid element.



What are suitable uses of P and Q, based on their structures? **(2 marks)**

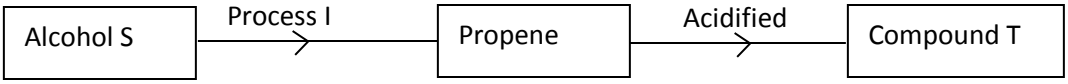
25. Fertilizers are added to the soil to improve crop yields. A farmer has a choice of two fertilizers, ammonium nitrate NH_4NO_3 or diammonium hydrogen phosphate $(NH_4)_2HPO_4$

(i) Show by calculation which of these fertilizers contains the greater percentage of nitrogen by mass **(3 marks)**

(N=14, H=1, O=16,P=31)

(ii) State one major problem caused when the nitrates from fertilizers leach from the soil into streams and rivers **(1 mark)**

26. Study the flow chart below.



(a). Write the structural formula of alcohol **S**. **(1 mark)**

(b) Name

(i) compound **T** **(1 mark)**

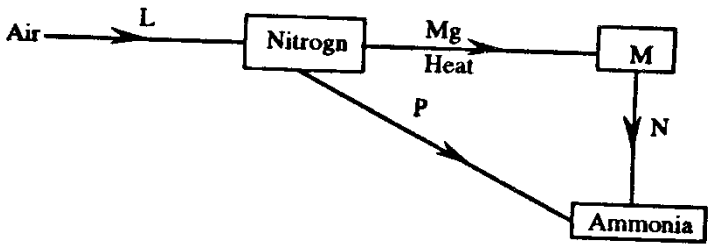
(ii) process **I** **(1 mark)**

27. Students are advised to use a non-luminous flame for heating in the laboratory.

(a) How does a Bunsen burner produce a non-luminous flame? **(1 mark)**

(b) Give one reason why the advice is given to students. **(1 mark)**

28. Study the diagram below and answer the questions



(i) What is the process involved in step L **(1 mark)**

(ii) Explain how process N and P can be affected **(2marks)**

N

29. In an experiment to determine the solubility of solid Y in water at 30^0Cthe following results were obtained.

Mass of empty evaporating dish	=	26.2g
Mass of evaporating dish + saturated solution	=	42.4g
Mass of evaporating dish + dry solid	=	30.4g

Use the data to calculate the solubility of Y at 30^0_C grams of Y per 100g water. **(3**

mwalimuepublishers@gmail.com

SET 1 HOLIDAY

ASSIGNMENT

CHEMISTRY PP2

This paper consists of 12 printed pages.
Candidates should check to ensure that all pages are printed as indicated and no questions are missing

1. (a) Use the information below to answer the questions that follow.

$Ca_{(s)} + \frac{1}{2}O_{2(g)} \rightarrow CaO_{(s)}$ $\Delta H = -635$ KJ mol^{-1}

$Ca_{(s)} + O_{2(g)} \rightarrow CaO_{2(g)}$ $\Delta H = -394$ KJ mol^{-1}

$Ca_{(s)} + e_{(s)} + \frac{3}{2}O_{2(g)} \rightarrow CaCO_{3(s)}$ $\Delta H = -1207$ KJ mol^{-1}

Calculate the enthalpy change for the reaction.

$CaO_{(s)} + CO_{2(g)} \rightarrow CaCO_{3(s)}$ **(3 marks)**

(b) State **one** factor that should be considered when choosing a fuel for cooking. **(1 mark)**

(c) The following data was obtained during an experiment to determine the molar heat of combustion of ethanol.

Volume of water used	= 500cm³
Initial temperature of water	= 25°C
Final temperature of water	= 44.5°C
Mass of ethanol + lamp before burning	= 121.5g
Mass of ethanol + lamp after burning	= 120.0g

Calculate the

(i) Heat evolved during the experiment (density of water = 1g/cm³, specific heat capacity of water = $4.2Jg^{-1}K^{1}$).
(1 mark)

(ii) Molar heat of combustion of ethanol (C = 12, O = 16, H = 1). **(2 marks)**

(d) Write the thermo equation for the complete combustion of ethanol. **(1 mark)**

(e) At 298K and one atmosphere pressure, graphite changes into diamond according to the equation.

$$C_{(graphite)} \rightarrow C_{(diamond)} \qquad \Delta H = +2.9 \text{ KJ/mol}$$

In the space provided, sketch a simple energy level diagram for the above change. **(2 marks)**

(f). Study the information in the table below then answer the questions that follows.

Bond	Bond energy ($kJmol^{-1}$
H – H	435
Cl – Cl	243
H – Cl	431

Calculate the enthalpy change for the reaction.

$$H_{2(g)} + Cl_{2(g)} \rightarrow 2HCl_{(g)}$$ **(2 marks)**

2. **(a)** At 25°C 50g of substance X were added to 100g of water to make a saturated solution.

What is meant a saturated solution? **(1 mark)**

(b) The table **below** gives the solubilities of substance X at different temperatures.

Temperature °C	14	24	33	40	46	52
Solubility g/100g H_2O	24	36	50	62	72	90

(i). Plot a graph of the solubility of substance X (vertical axis) against temperature. **(3 marks)**

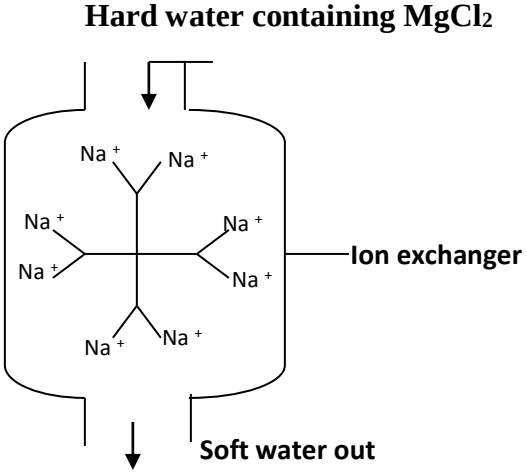
(ii) Using the graph.

d) Determine the solubility of substance X at 20°C. **(1 mark)**

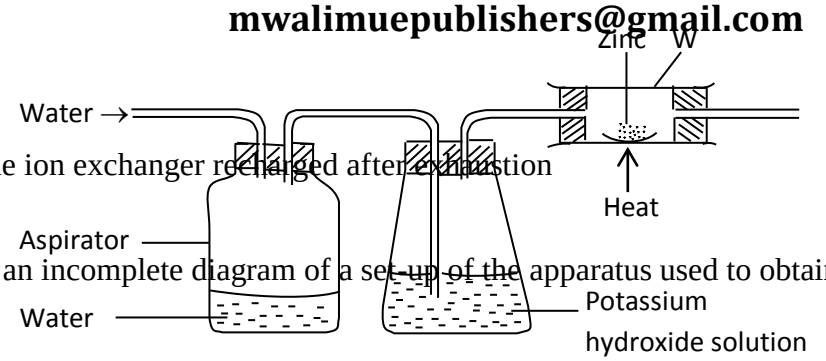
e) Determine the mass of substance X that remained undissolved given that 90g of substance X were added to 100cm³ of water and warmed to 35°C. **(2 marks)**

f) Calculate the molarity of the solution at 30°C. (Relative formula mass of X = 122.5). **(3 marks)**

(c) The figure below shows an ion exchanger used to soften hard water



(i) Draw the ion exchanger and show how it will appear at the end of softening process. **(2 marks)**



(ii) How is the ion exchanger recharged after exhaustion **(1**

3.(a) Below is an incomplete diagram of a set-up of the apparatus used to obtain nitrogen gas from the air.

(i) Complete the diagram to show how nitrogen gas is collected. **(1 mark)**

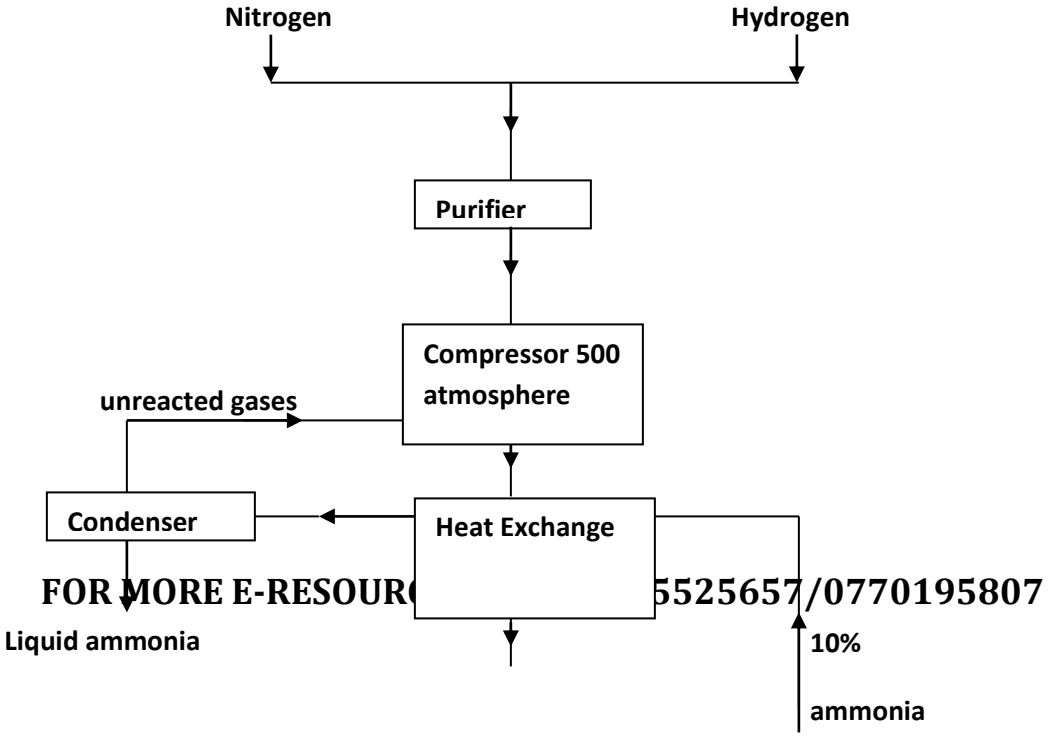
(ii) State the role of the following:

I Water entering the aspirator. **(1**

II Potassium hydroxide solution. **(1 mark)**

(iii).Write a chemical equation for the reaction that takes place in combustion tube.

(b).The diagram below represents the Haber's process for the manufacture of ammonia. Study it and answer the questions that follow.



Catalytic chamber

(i) Name any **two** impurities removed by the purifier. **(2 marks)**

(ii) Name the catalyst used in the process **(1 mark)**

.....

..

(iii) In the Haber's process the conversion of nitrogen and hydrogen into ammonia is only 10%.

The remaining unreacted gases are recycled. What is the advantage of recycling. **(1mark)**

.....

...

iv) A part from the catalyst and pressure of 500 atmospheres, name any other condition required for this process. **(1mark)**

(c) Give any **two** uses of ammonia **(1 mark)**

.....

.....

d) In the manufacture of nitric (V) Acid from ammonia and air, ammonia is catalytically oxidized to nitrogen (II) oxide

(i) Name the catalyst used in the reaction. **(1mark)**

.....

.....

(ii) Write a balanced chemical equation for the reaction between ammonia and air. **(1mark)**

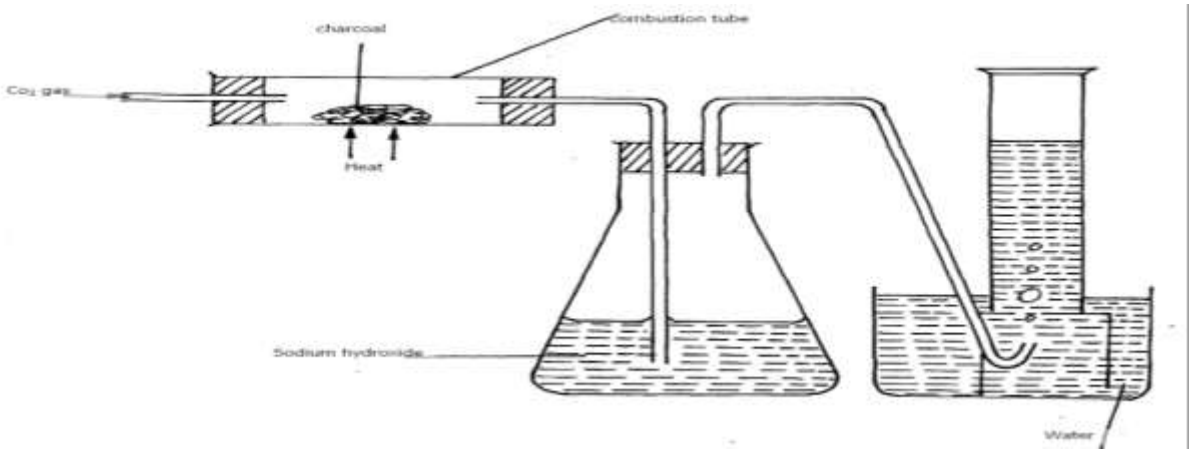
(iii) State **one** environmental problem likely to be faced in an area where nitric (v) acid manufacturing plant is

located. **(1 mark)**

.....

.....

4. In an experiment, carbon (IV) Oxide gas was passed over heated charcoal and the gas produced collected as shown in the diagram below.



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

(ii) Name another chemical substance that can be instead of sodium hydroxide . **(1 mark)**

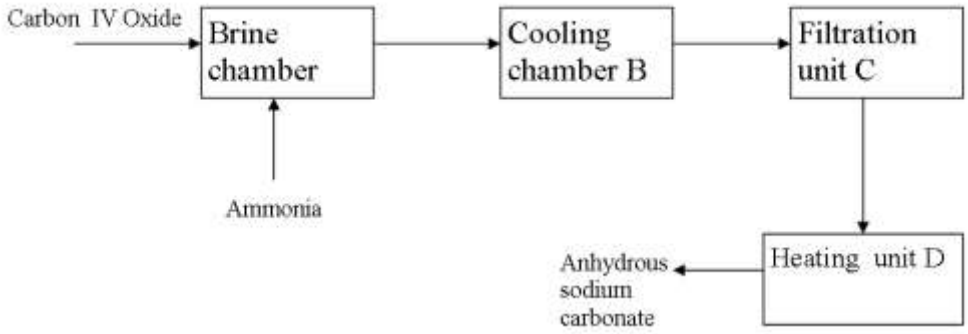
(iii) Describe a simple chemical test to distinguish between carbon (II) Oxide and carbon (IV) Oxide **(2 marks)**

(**iv)** What is the purpose of sodium hydroxide in the above set-up **(1 mark)**

(v) What property of the gas makes it possible to be collected ass shown above? **(1 mark)**

(vi) State one use of carbon (II) oxide **(1 mark)**

(b) In order to prepare sodium carbonate in the laboratory, students passed carbon (IV) oxide and ammonia gas into brine as shown in the flow diagram below. Use it to answer the questions that follow:

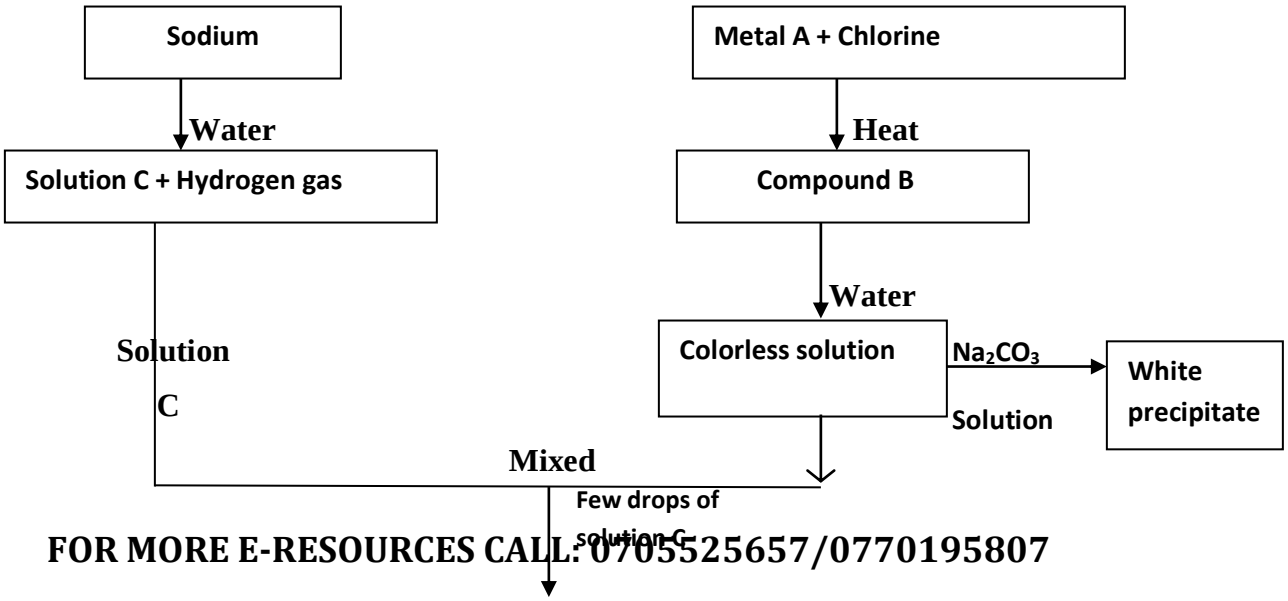


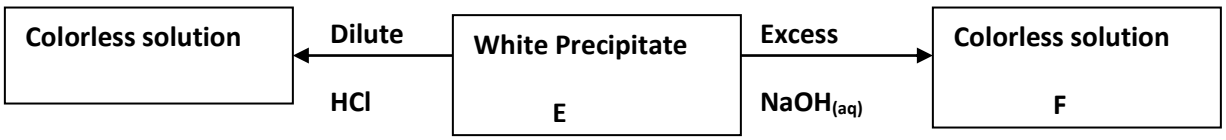
(i) Why is the mixture obtained in chamber A cooled down in chamber B? **(1 mark)**

(ii) Write an equation for the reaction that recurs in the heating chamber D **(1 mark)**

(iii) Give a reason why it is difficult to prepare potassium carbonate by the same method. **(1 mark)**

5. Study the flow diagram below and use it to answer the questions that follow.





(a) Give the name and formula of the following.

(i) White precipitate **E**

Name

(1 mark)

Formula

(1 mark)

(ii) Colourless solution F

Name

(1 mark)

Formula

(1 mark)

(b) What property is exhibited by white precipitate E when it reacts with Sodium hydroxide and HCl acid.

(1mark)

(c) Write an ionic equation for the reaction between white precipitate E and excess sodium hydroxide solution.

(1 mark)

(d) You are provided with.

i) Potassium carbonate solid

ii) Zinc hydroxide

iii) Nitric (v) acid

iv) Distilled water

State briefly how you would prepare solid zinc carbonate using the reagents given**.** **(3 marks)**

.....

.....

.....

.....

.....

.....

.....

(e) Distinguish between a weak acid and a strong acid giving an example of each. **(1 mark)**

(f). Identify an acid in the forward reaction given by the equation below:

$$HSO_{4(aq)}^{-} + H_2O_{(l)} \leftrightharpoons H_2SO_{4(aq)} + OH_{(aq)}^{-}$$ **(1 mark)**

6. The grid below shows part of the periodic table. Use it to answer the questions that follow. The letters do not represent actual symbols.

						S	U	V
P	R					T	X	W
Q								

iv) Which of the elements has the largest atomic radius? Explain. **(2**

v) Identify the most reactive non-metal. Explain. **(2 marks)**

vi) Compare the atomic radius of P and R. **(1 mark)**

vii) Give the formula of one stable ion with an electron arrangement of 2.8 which is:

(d) Negativity charged divalent ion. **(2 marks)**

(e) Positively charged monovalent.

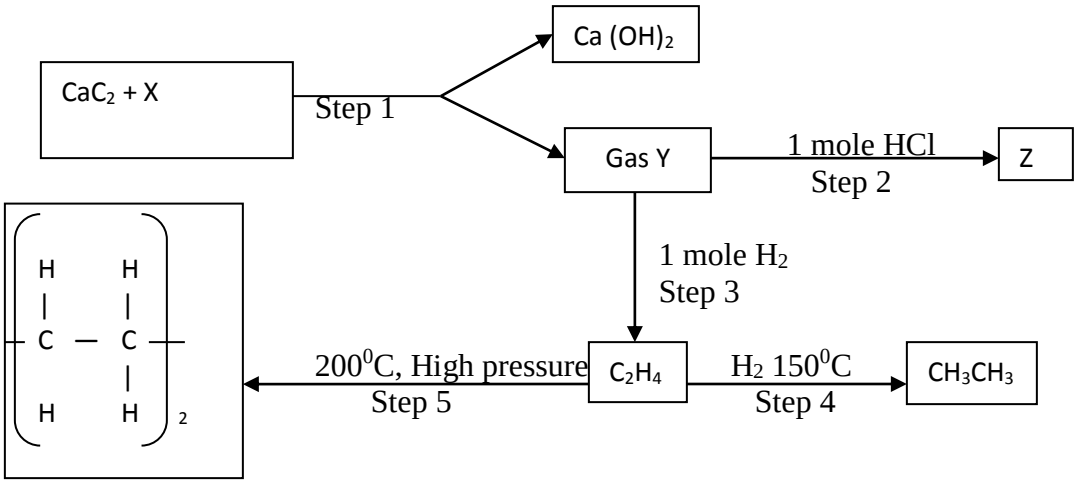
viii) Given that the mass number of W is 40. Write down the composition of its nucleus. **(1 mark)**

ix) Write the formula of the compounds formed between.

F. Element R and X. **(1 mark)**

G. Give **one** property of the structure formed when R and X bond. **(1**

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

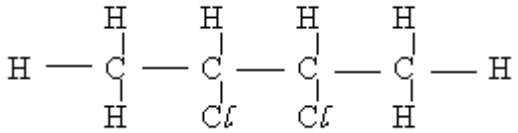


(i) Identify reagent X. **(1 mark)**

(ii) Draw the structural formula of gas Y. **(1 mark)**

(iii) What name is given to the process that takes place in step 5? **(1 mark)**

(b) An organic compound T reacts with chlorine gas in the presence of u.v light to form compound U. The structural formula of compound U is shown below.



Name the organic compound T and draw its structural formula. **(2marks)**

(c).The structure below represents two cleansing agents, L_1 and L_2.

$L_1 \rightarrow R - CH_2 - CH_3$

$|$

OSO_3Na^+

$L_2 \rightarrow R - COONa^+$

(i) Identify each of the two cleansing agents, L_1 and L_2.

L_1

(½mark)

L_2

(½mark)

(ii). State a disadvantage of each of the above cleansing agents.

L_1

(½mark)

L_2

(½mark)

(d) In an experiment an organic compound was reacted with absolute ethanol in the presence of concentrated sulphuric (VI) acid to form a compound whose formula is $CH_3\ CH_2\ CH_2\ COOCH_2\ CH_3$. Name

I. The type of reaction that took place. **(1 mark)**

II. The name of the organic compound to which the compound belonged. **(1 mark)**

(e) Write the structural formula and give the systematic name of the acid used in the above experiment. **(1 mark)**

SET 1 HOLIDAY ASSIGNMENT

CHEMISTRY PP3

1. You are provided with;

c) Solution A containing 6.95g of Iron II Sulphate heptahydrate R.F.M = 278 in 250cm^3 of solution

d) Solution B of potassium manganate (VII)

e) Solution C of hydrogen peroxide.

You are required to

(d) Standardize the potassium manganate (VII) solution C

(e) Determine the concentration of hydrogen peroxide solution C.

PROCEDURE I

Pipette 25cm^3 of solution A into a conical flask.

Fill the burette with solution B. Titrate this solution against solution A until the first permanent pink colour appears. Record your results in table I and repeat the procedure to fill the table 1 below.

Table 1

II	I	II	III
Final burette reading (cm^3)			

Initial burette reading (cm^3)			
Volume of solution B used (cm^3)			

(4 marks)

i. Calculate the average volume of solution B used (1 marks)

……

……

……

……

……

ii. Given that the equation for the reaction is

$Mno^-_{4(aq)} + 5Fe^{2+}_{(aq)} + 8H^+_{(aq)} \longrightarrow Mn^{2+}_{(aq)} + 5Fe^{3+}_{(aq)} + 4H_2O_{(l)}$

Calculate

iii) The number of moles of Iron II sulphate solution A used (1mark)

……

……

iv) The number of moles of solution B that reacted.

(1mark)

v) The concentration of the potassium manganate (VII) solution B in moles per litre. (1mark)

……

……

PROCEDURE II

Pipette 25cm^3 of hydrogen peroxide, solution C into a conical flask. Fill the burette with solution B. Titrate this solution against solution C until the first permanent pink colour appears. Record results in table II.

TABLE II

Titre number	I	II	III
Final burette reading cm^3			

Initial burette reading cm^3			
Volume solution B used cm^3			

(4marks)

5. Work out average volume of potassium manganate (VII) solution B used.

(1mark)

……

……

6. Given that the equation for the reaction is

$2MnO^-_{4\,(ag)} + 5H_2O_{(aq)} + 6H^+_{(aq)} \longrightarrow 2Mn^{2+}_{(aq)} + 8H_2O_{(l)\,(aq)} + 5O_{2(aq)}$

Calculate

v) The number of moles of Potassium Manganate (VII) solution B that reacted.
(1mark)

……

vi) The number of moles of hydrogen peroxide solution C that reacted.
(1mark)

vii) The concentration of hydrogen peroxide solution C in moles per dm^3(mol dm^{-3}) (1mk)

……

……

2. You are provided with 4g of Solid F.
You are required to determine the solubility of solid F at different temperatures.
PROCEDURE

g) Carefully transfer all solid F in a clean boiling test tube and using a burette, add $15cm^3$ of distilled water. Heat the mixture while stirring with a thermometer to about 85^0C. when all the solid has dissolved, allow the solution to cool while stirring with the thermometer. Note the temperature at which the crystals of solid F first appear. Record this temperature in Table III.

h) Transfer $5cm^3$ of distilled water to the contents in the boiling tube. Warm the mixture while stirring with the thermometer until the solid dissolve. Allow the mixture to cool while stirring. Note and record the temperature at which crystals first appear.

i) Repeat procedure (b) two or more times and record the temperatures in table III.

j) Complete table III by calculating the solubility of solid F at the different temperatures.

TABLE III

Volume of water in the	Temperature at which crystals of solid F	Solubility of solid F in g / 100g

boiling tube (cm^3) | first appear. | of water.

15

20

25

35

40

(6marks)

xi) On the grid provided plot a graph of solubility of solid F (vertical axis) against temperature (horizontal axis).
(3marks)

xiii) Using your graph, determine the temperature at which 15g of solid F, would dissolve in 100cm^3 of water. (1mark)

……

……

……

……

……

……

3. **You are provided with solid D. carry out the following tests and write down all the observations and inferences.**

(c) Place half spatula end full of solid D in a dry test tube. Heat gently then strongly until there is no further change.

Observations	inferences
(1mark)	(1mark)

(d) Place the remaining solid D in a test tube, add about 10cm^3 of distilled water and shake vigorously. Divide the mixture into four portions.

a. To the 1st portion, add 2M sodium hydroxide solution drop wise until in excess.

Observations	inferences
(1mark)	(1mark)

b. To the 2nd portion, add ammonia solution drop wise till in excess.

Observations	inferences

(1mark)	(1mark)

iii. To the fourth portion add 4 drops of sodium chloride.

Observations	inferences
(1mark)	(1mark)

II. You are provided with liquid E, Carry out the following tests on it.

H. Place about one spatula end full of liquid E on a metallic spatula and ignite it in a Bunsen burner flame.

Observations	inferences
(1mark)	(1mark)

I. To $2cm^3$ of liquid E add 3 drops of acidified $KMnO_4$. Solution B.

Observations	inferences
(1mark)	(1mark)

J. To $2cm^3$ of liquid E add 3 drops of acidified $K_2Cr_2O_7$.

Observations	References
(1mark)	(1mark)

SET 1 HOLIDAY ASSIGNMENT

BIOLOGY PP1

I

1. Explain the meaning of the following branches of biology.

a) Cytology (1mark)

_____

b) Mycology (1mark)

_____

2. State **three** reasons why it's necessary to classify living organisms. (3marks)

_____

_____

_____

_____

3. The diagram below represents a neuron.

A **D**

f) i) Identify the neuron. (1mark)

_____

ii) Give a reason. (1mark)

_____

_____

b) Identify the parts labeled A and D. (2marks)

A _____

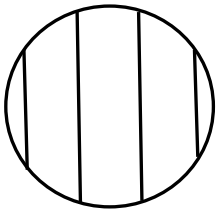
D _____

c) State the function of neuron. (1mark)

_____

_____

4. A form one student trying to determine the size of onion cells observed the following on a microscopes field of view.



If the student observed 2 cells across the field of view calculate the length of one cell in micrometers (3marks)

5). The diagram below represents a certain organism collected by a student on his way to school

a) State the class to which the organism belongs (1mark**)**

_____

g) Give **two** reasons for your answer 5(a) above (2mark)

_____

_____

_____

6. What is meant by the following terms as used in ecology?

i) Biomass (1mark)

_____

_____

ii) Ecosystem (1mark)

_____

_____

7. The diagram below represents a synapse

P

a) Indicate the direction of the impulse on the diagram (1mark)

b) State **two** significances of a synapse in the body (2marks)

_____

_____

_____

8. Name a tissue whose cells are thickened with

a) Cellulose and pectin (1mark)

_____

b) Lignin (1mark)

_____

9. The diagram below shows the structure of an organelle

a) State the function of the organelle (1mark)

_____

_____

b) State **one** adaptation of the above organelle to its function (1mark)

_____

_____

h) Give the function of the following cell organelles

vi) Lysosomes (1mark)

_____

_____

vii) Golgi bodies (1mark)

_____

_____

10. The diagram below represents across section of a certain plant

x) Name the parts labeled A and B (2marks)

A _____

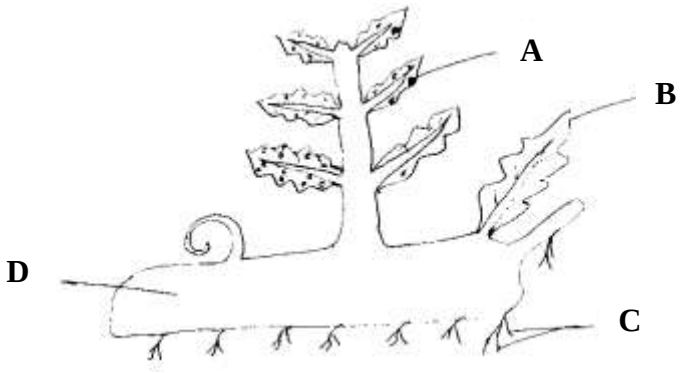
B _____

b) i) State the class to which the plant above belongs

_____

ii) Give a reason (1mark)

11. During research on different types of plants students found a plant that looked like the one shown below



a) Identify the plant. (1mark)

_____

_____

xi) Name the parts labeled A, B, C and D. (4marks)

A _____

B _____

C _____

D _____

c) State the division to which the plant belongs. (1mark)

_____

12. Why do you think we experience more discomfort in hot humid weather than we do in hot dry weather (3marks)

_____

_____

13. Explain why a water logged soil does not support plant growth. (3marks)

_____

_____

_____

_____

_____

14. Name the carbohydrate that is.

k) Found in abundance in mammalian blood. (1mark)

_____

b) Stored in a mammalian liver. (1mark)

_____

15. Liver damage leads to impaired digestion of fats. Explain. (2marks)

_____

_____

_____

16. The letters 'N' and n represents the dominant and recessive genes for hemophilia respectively.
    Write down the genotype of the following (3marks)

viii) Homozygous dominant_____

ix) Homozygous recessive_____

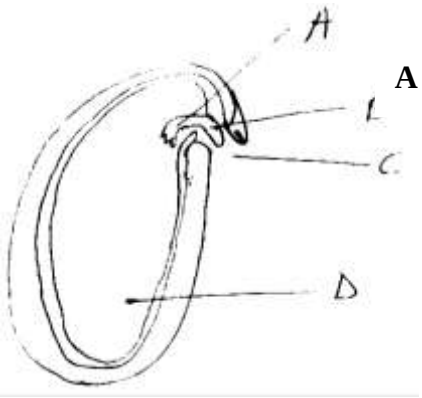
x) Heterozygote_____

17. Give **three** adaptations of human male gamete to its functions. (3marks)

_____

_____

18. The diagram below represents a longitudinal section of a bean study it and answer the questions that follow:



a) Identify the parts labeled A to D. (2marks)

A _____ **B** _____

B _____ **C** _____

C _____

D _____ **D** _____

b) Give the role of the plant labeled D. (1mark)

_____

_____

c) What type of germination would the seed shown above undergo? (1mark)

19. a) A person who is blood group AB has an advantage over a person who is blood group O. Explain. (2marks)

_____

_____

_____

b) Give **two** reasons for screening blood before transfusion. (2marks)

_____

20. a) Define immunity. (1mark)

_____

b) Distinguish between natural immunity and acquired immunity. (1mark)

_____

_____

_____

c) Identify **one** immunisable disease in Kenya. (1mark)

_____

21. State the causative agent of;

i) Cholera (1mark)

_____

ii) Amoebic dysentery. (1mark)

_____

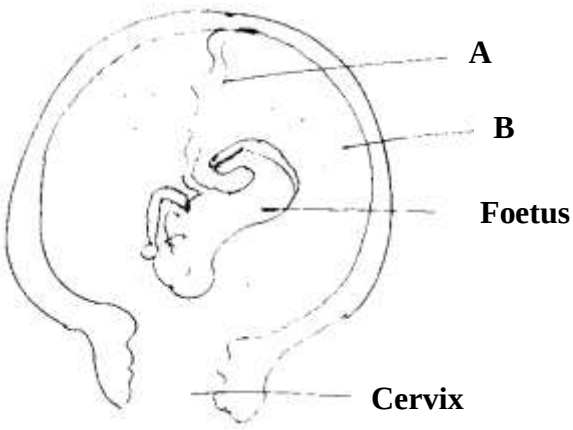
22. Explain why it difficult to calculate the respiratory quotient (RQ) in plants. (2marks)

_____

_____

_____

23. The diagram below represents a stage in the development of human foetus.



a) State **one** function of each of the structures labeled A and B. (2marks)

A _____

_____

B _____

_____

b) Apart from the size of the foetus what else from diagram illustrates that birth was going to occur in the near future.

_____

_____

24. Give the reasons why Lamar's theory on natural selection in organic evolution was discarde. (2marks)

_____

_____

_____

_____

25. Explain why the following process is essential in living organism.

b) Reproduction (1mark)

_____

_____

c) Excretion (1mark)

_____

_____

26. Explain why there are only a few days in each menstrual cycle when fertilization can occur.
(2_____

_____

27. Study the bio-chemical reactions given below.

$C_6H_{12}O_6 + C_6H_{12}O_6 \xrightarrow{I} C_{12}H_{22}O_n + H_2O$

$C_{12}H_{22}O_{11} + H_2O \xrightarrow{II} C_6H_{12}O_6 + C_6H_{12}O_6$

xiv) Identify the process marked I and II (2marks)

I _____

II _____

b) Explain how the process marked II can be carried out in a laboratory.

SET 1 HOLIDAY

ASSIGNMENT

BIOLOGY PP2

SECTION A (40 MARKS)

Answer ALL questions

1. A pure breed red flowered plants was crossed with a pure breed white flowered plant. The F1 generate had all pink flowers. When F1 were selfed 1600 plants were obtained in F2 generation

a) Identify the type of dominance (1mark)

_____

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

_____

_____

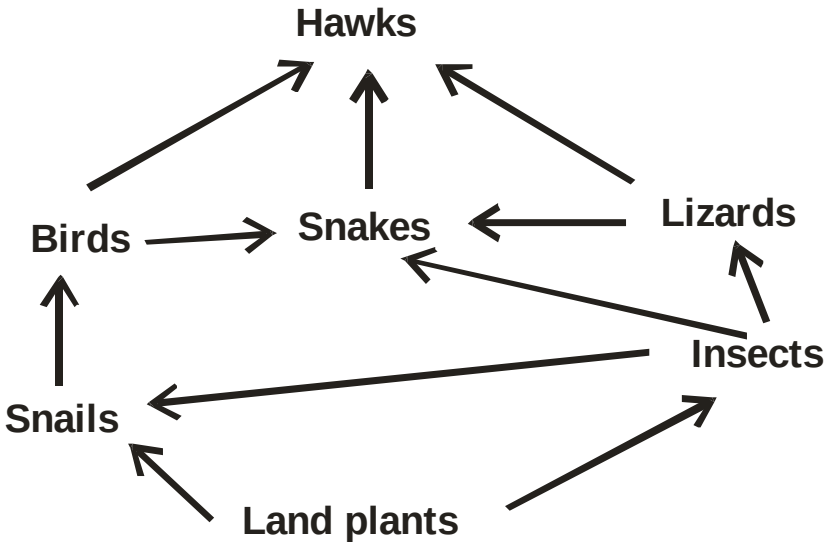
c) i) Using letter R to represent the gene for red color and W for the white colour work out the possible genotypes for F2 generation. (4marks)

ii) Work out the answer of plants in F2 with

Pink flower (1mark)

Red flowers (1mark)

2. Study the food web below and use it to answer the questions that follow



a) Identify the tropical level occupied by the hawks. (1mark)

_____

_____

b) Write down any two food chains from the food web that ends with:

i) Quaternary consumer (2marks)

_____

_____

ii) Tertiary consumer (1mark)

_____

_____

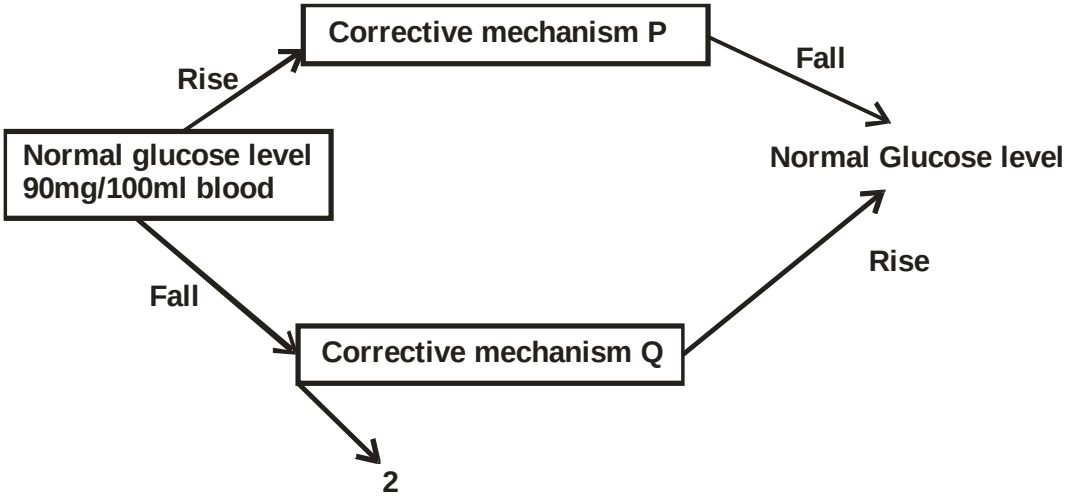
c) Suggest **three** short term effects on the ecosystem if all the snakes died (3marks)

_____

d) Which organism has the highest number of predators (1mark)

_____

3. The diagram below shows how blood glucose in mammalian body is regulated.



a) Name the feedback represented by 2 (1marks)

_____

b) Explain what happens during corrective mechanism P (3marks)

_____

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c) i) Name **two** organism involved in corrective mechanism P and Q (2 marks)

_____

_____

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ii) Why would glucose level be maintained constant (1marks)

_____

_____

d) What is osmoregulation? (1 mark)

_____

_____

4. In a fish pond the number of fish was estimated by use of the following information.

First captured =50

Second captured =90

Marked recaptured =25

a) Identify the method suggested above (1mark)

_____

b) Name **two** other sampling methods used in estimating populations (2marks)

_____

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c) Calculate the total number of fish in the pond (2marks)

d) Give **three** assumptions of the above method (3marks)

_____

_____

5. a) The diagram below represents bones and muscles in human arm

7. Give **two** differences between the type of muscles labeled A and B above and the type of muscles found in the blood vessel (2mark)

_____

_____

_____

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ii) Explain how the muscles labeled A and B above bring about stretching of the arm (2marks)

_____

_____

_____

b) Below is diagram of above coiled sacrum

A

B

xv) State the disgusting feature of sacrum (1mark)

_____

_____

xvi) What is the function of sacrum in the body
(1mark)

_____

_____

xvii) How is sacrum adapted to its function (2marks)

_____

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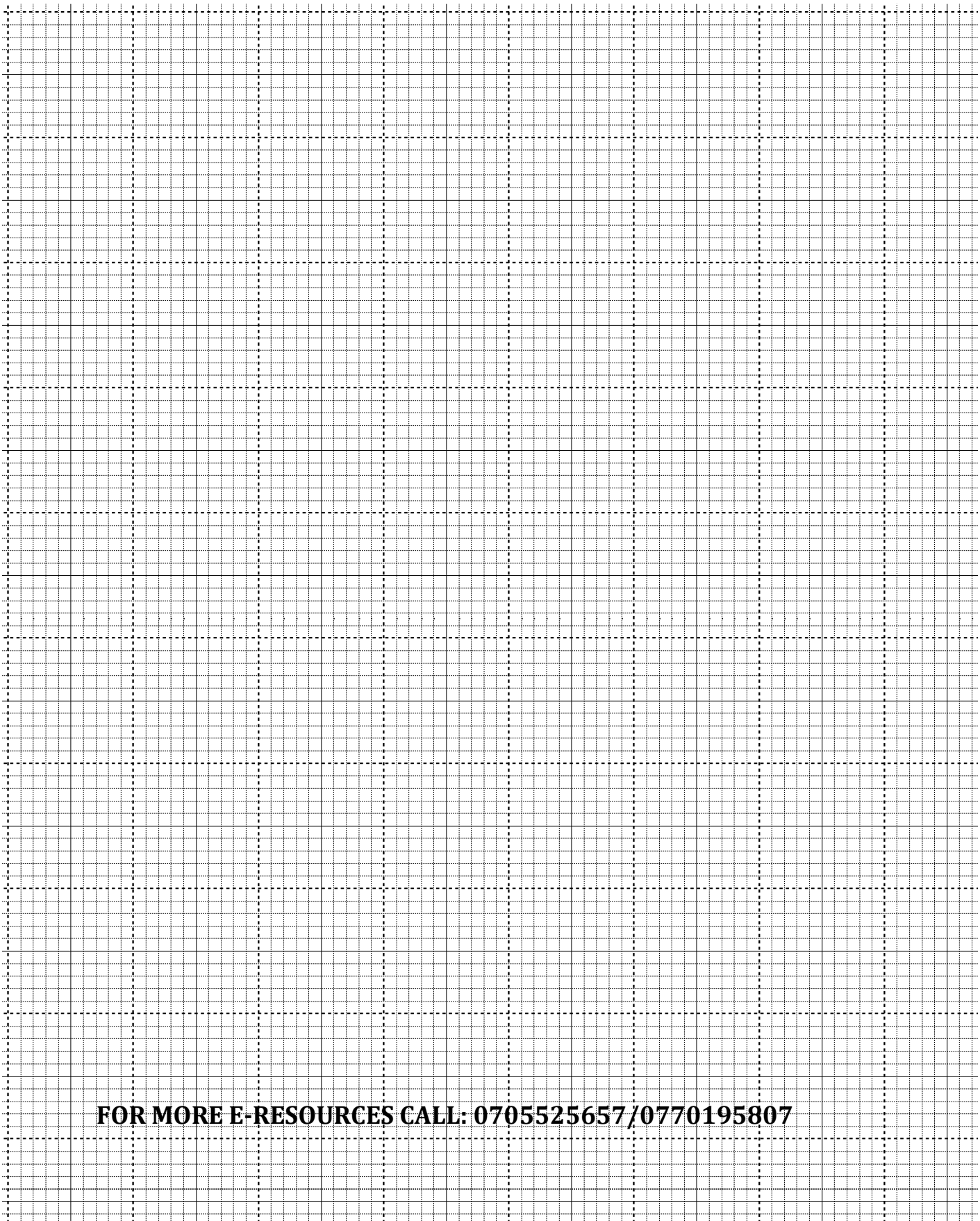
SECTION B (40 MARKS)

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

6. In an experiment to investigate the action of salivary amylase in starch, equal amount of amylase was added to equal amount of starch in in different tubes. The test tubes were placed at different temperatures. The table below shows the time taken for the enzyme to digest starch.

Time (min)	45	27.5	15	05	1.5	1	8	35
Temperature ^{0}c	0	10	20	30	35	38	40	45

l) On the grid provided, plot a graph of time in minutes against temperature. (5marks)



b) What is the optimum temperature of the enzyme (1mark)

_____

c) Account for the time taken to digest starch at

d) 5^0C (2marks)

_____

_____

_____

_____

e) 45^0C (2marks)

_____

_____

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_____

d) Other than temperature name **two** other factors that influence the rate of enzyme action. (2marks)

_____

_____

_____

e) What is the rate of enzyme action at 15^0C? Work out using the graph drawn. (3marks)

_____

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_____

f) Salivary amylase continues to digest starch to maltose in the bolus from the mouth down the esophagus but stops in the stomach. Explain.

g) Name the secretions received in the duodenum from the pan crease to facilitate the process of digestion

h) During a scientific research on a rat hydrochloric acid was carefully introduced in the pancreatic duct to mix with the secretion before it was received in the duodenum it was discovered that no digestion took place in the duodenum. Explain . (2marks)

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7. a) Describe the adaptations of the human ear to its function (10marks)

b) Describe the following evidence of organic evolution

xi)Comparative anatomy (6marks)

xii) Geographical distribution (4marks)

8. a) Define pollution (2marks)

b) Describe water pollution under the following:

i) Causes (6marks)

ii) Effects of pollutants on plants and animals (6marks)

iii)Methods of controlling pollution (6marks)

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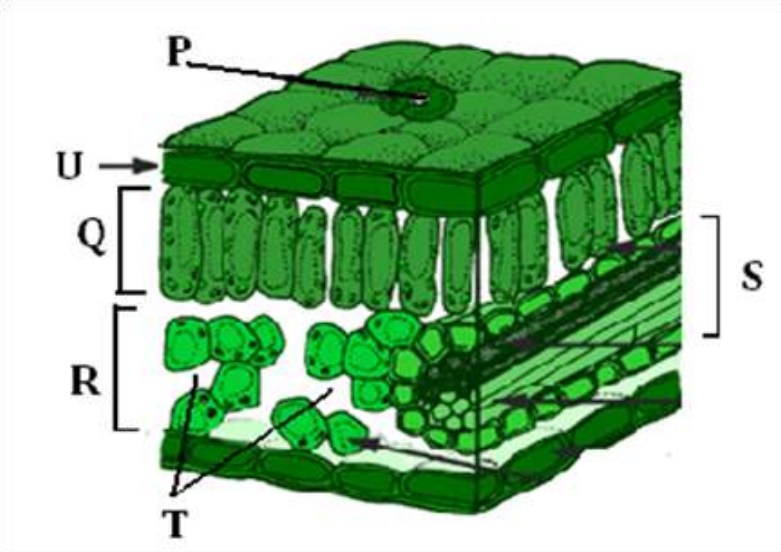
mwalimuepublishers@gmail.com

SET 1 HOLIDAY

ASSIGNMENT

BIOLOGY PP3

1. The photograph below shows the arrangements of different type of cells and tissues in a certain living organism. Study it and answer the questions that follow.



a) i) From what part of the plant was the photograph obtained. (1 mark)

.....

ii) Name the parts labeled. (3marks)

P .....

Q .....

R .....

S .....

T .....

b. i) State the function of the part labeled Q. (1mark)

.....

ii) State two adaptations of structure Q to its function. (2 marks)

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c. State two environmental factors which regulate the function of the part labeled P. (2 marks)

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d. Measure the length of one cell of region labeled Q on the photomicrograph whose magnification is X5000.What is the actual length of the cell in micrometer? Show your working. (3marks)

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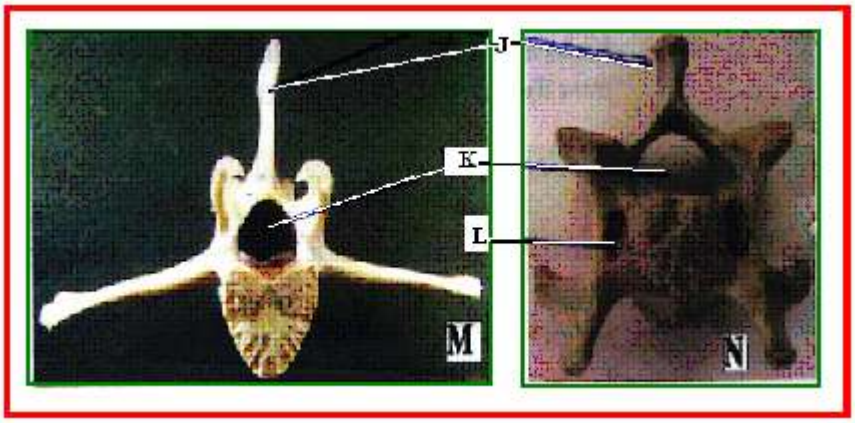
2. You are provided with photographs of specimens labeled M and N. Examine them and answer the questions that follow.



a) i) Identify the specimens represented by the photographs.

M: ..... (1 mark)

N: ..... (1mark)

ii) label the parts labeled

J: ..... (1mark)

K: ..... (1 mark)

L: ..... (1mark)

b) i) State four observable differences between specimens M and N. (4 marks)

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ii) Name the region of the body from which the specimens were obtained.

M: .....

N: .....

c) How is specimen N adapted to its function? (4 marks)

3. You are provided with solution labeled L and K.

a) Use the reagents provided to determine their identity. Record your procedure, observation and conclusion in the table below. (6 marks)

Food substance	procedure	observation	conclusion

b. Tie one end of the visking tubing provided tightly. Put solution K in the visking tubing and tie the open end. Imerse the visking tubing in the beaker containing solution L .Let the set up stand for about 30 minutes.

i) Test the contents in the visking tubing with iodine and benedict's solution. Record your procedure,observation and conclusion in the table below. (3marks)

Test with	procedure	observation	conclusion
Iodine solution			
Benedict's solution			

ii) Test the contents in the beaker with iodine and Benedict's solution. Record your procedure, observation and conclusion in the table below.

Test with	procedure	observation	conclusion
Iodine solution			
Benedict's solution			

c. Account for your observation in b(i) and (ii) above

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SET 1 HOLIDAY

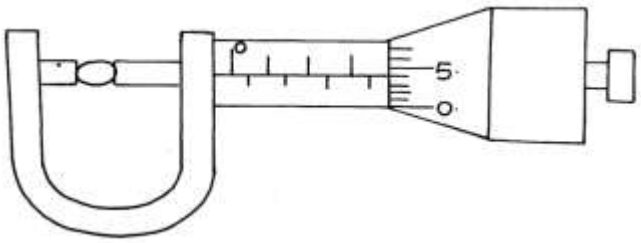
ASSIGNMENT

PHYSICS PP1

SECTION A (25 MARKS)

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

1. Figure 1. shows a micrometer screw gauge being used to measure the diameter of a ball bearing.



If the instrument has a negative zero error of 0.01mm, record the actual diameter of the ball bearing. (1mk)

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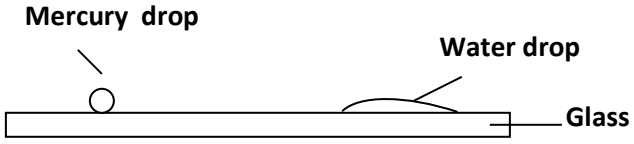
2. Figure 2. shows drops of mercury and water on a glass surface,



Explain the difference in the shapes of the drops. (2mks)

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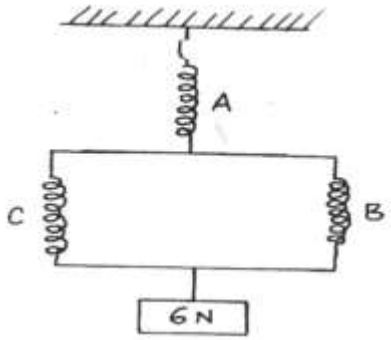
3. Explain why fish can survive under water when the surface is already frozen. (1 mk)

4. Figure 3 shows three identical springs each of spring constant 4.5N/m and negligible weight are used to support a load as shown. Determine the total extension of the system. (2mks)



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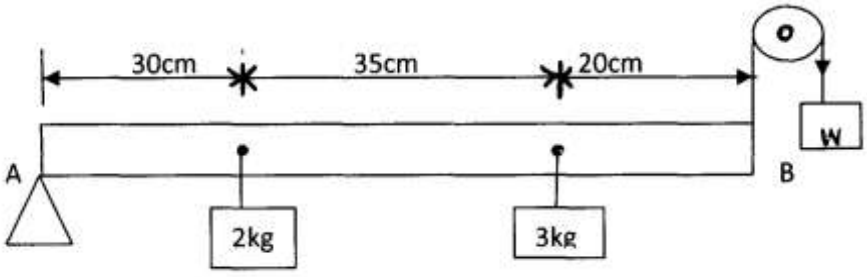
5. Figure 4 shows a uniform rod **AB** of negligible weight pivoted at **A**.



If the system is in equilibrium, determine the weight **W** shown in the diagram. (3mks)

6. A ball is thrown from the top of a cliff 20m high with a horizontal velocity of $10ms^{-1}$. Calculate the distance from the foot of the cliff to where the ball strikes the ground. (3 marks)

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7.The height of mercury column in a barometer density $13600kg/ m^{-3}$, at a place is 64cm. What would be the height of a column of paraffin in barometer at the same place. (Density of paraffin = 8.0×10^2 kg $/m^3$). (3mks)

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8. Explain o**n**e advantage of mercury over alcohol as a thermometric liquid. (1mk)

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9.A body of mass **M** is allowed to slide down an inclined plane. State **two** factors that affect its final velocity at the bottom of the inclined plane. (2mks)

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10. A car of mass 1 tone moving at a velocity of 108km/hr is brought to rest in 5 seconds. Calculate the retarding force.(2mks)

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11. Explain why a gas cylinder in a house containing cooking fire explodes.(2mks)

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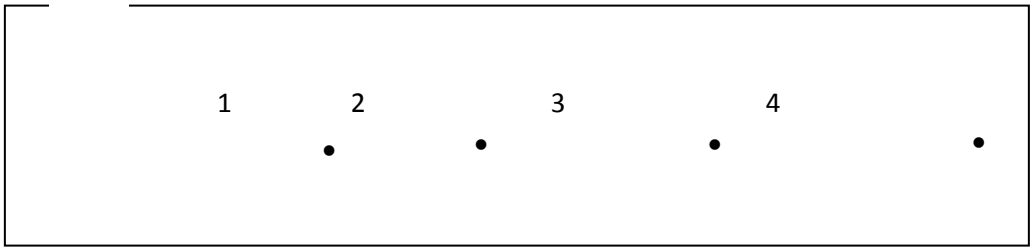
12.Oil is leaking from a car as it travels along a straight road. One drop falls on the ground every fifty seconds. Figure 5 below shows the pattern of the drop on the ground.



(i) Describe the motion of the car. (1mk)

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(ii) Determine the acceleration of the car if the distance between drop 1 & 2 is 20 meters and the distance between drop 3 & 4 is 40 meters (2mks)

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SECTION B - 55 MARKS

Answer <u>all</u> questions in this section in the spaces provided.

13. a) State Pressure Law . (2mk)

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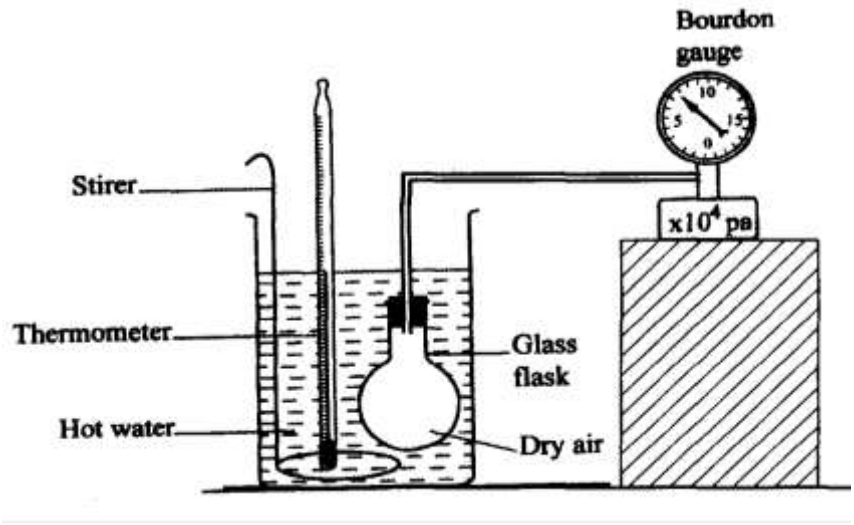
b) Figure 6 shows a set up that may be used to verify Pressure law.



i) State the measurements that may be taken in the experiment. (2mks)

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ii) Explain how the measurement in (i) above may be used to verify Pressure law . (4mks)

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iii) A car tyre is at an air pressure of 4.0 x 10^5 Pa at a temperature of 27 °C. While it is running the temperature rises to 75 °C. What is the new pressure in the tyre?(Assume the tyre does not expand) (3mks)

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14. (a) Define specific latent heat of fusion of a substance. (1mk)

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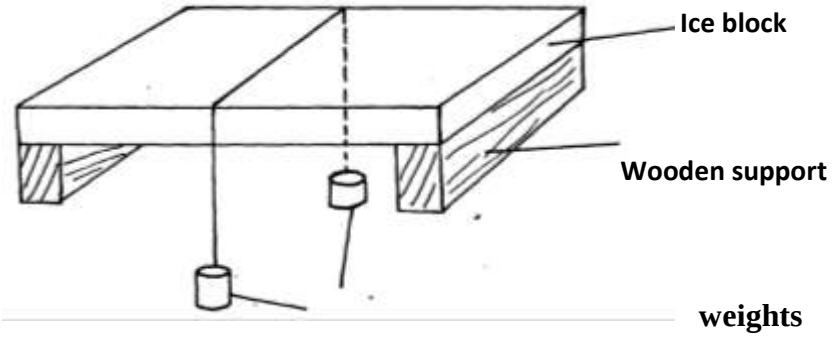
(b) Figure 7 below shows a block of ice with two heavy weights hanging such that the copper wire connecting them passes over the block.



(i) It is observed that the wire gradually cuts through the ice block, but leaves it as one piece. Explain (3mks)

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(ii) What change would be observed if the copper wire used in the experiment was placed by a cotton thread. (1mk)

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(c) A block of ice of mass 40g at 0^oC is placed in a calorimeter containing 400g of water at 20^oC. The heat absorbed by the calorimeter is negligible. The final temperature of the mixture after all the ice has melted is T. (specific latent heat of fusion of ice=340,000 J/kg, specific heat capacity of water=$4200JKg^{-1}k^{-1}$)

(i) Derive an expression for the heat gained by the ice as it melts to water at temperature **T**. (2mks)

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(ii) Derive an expression for the heat lost by the water. (1mk)

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(iii) Determine the value of **T**. (2mks)

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…… (d) State **two** differences between boiling and evaporation. (2mks)

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15.(a) State the law of floatation. (1mk)

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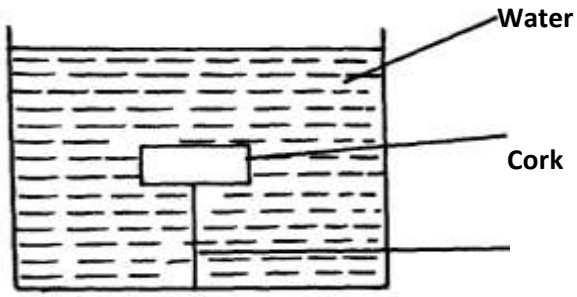
(b) Figure 8 shows a piece of cork held with a light thread attached to the bottom of a beaker. The beaker if filled with water.



(i) Indicate and label on the diagram the forces acting on the cork. (3mks)

(ii) Write an expression showing the relationship between the forces. (1mk)

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…… ……..

(c) A solid displaces 8.5cm^3 of liquid when floating on a certain liquid and 11.5 cm^3 when fully submerged in the liquid. The density of the solid if 0.8g/cm3. determine: (i) Up thrust on the solid when floating. (3mks)

(ii) Density of the liquid. (3mks)

16. (a) Name a device that is used to convert sound energy to electrical energy. (1mk)

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(b) Define the term efficiency of a machine. (1mk)

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(c) A pulley system having a velocity ratio of 4 is used to raise a load of 100N through a height of 0.6m at a constant speed using an effort of 60N in a time of 15 seconds.

(i) Calculate the efficiency of the system. (2mks)

(ii) How far does the effort end move in order to raise the load by 0.6m. (2mks)

(iii) Determine the power developed by the effort. (2 mks)

17. (a) Define the following terms:

(i) Instantaneous velocity.(1mk)

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(ii) Uniform acceleration (1mk)

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(b) A car moves with a constant velocity of 15m/s for 300s and is then accelerated uniformly to a velocity of 25m/s in the next 20s. this velocity is maintained for the next 300s. the car is then brought to rest in 30s with uniform deceleration.

(i) Sketch a velocity-time graph for this journey.(2mks)

.From the graph determine;

(ii) The acceleration while the velocity is changing from 15m/s to 25m/s.(2mks)

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(iii) The total distance traveled from the time the car reached maximum velocity of the car during this period.(2mks)

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……(c) A ball is thrown horizontally at V=8m/s from a tower. It reaches the ground after 4s. Find:

(i) The horizontal distance d it travels before hitting the ground.(1mk)

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(ii) The height of the tower (2mks)

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(iii) The velocity on impact with the ground.(2mks)

SET 1 HOLIDAY ASSIGNMENT PHYSICS PP2

SECTION A (25mks)

Answer ALL questions in this section in the spaces provided after each question.

xiii) What is the purpose of a fuse in domestic wiring system? (1mrk)

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xiv) Use the domain theory to explain briefly why a ferromagnetic material gets saturated when magnetized. (2mks)

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xv) The **figure 1** below shows an object placed some distance from a biconcave lens.

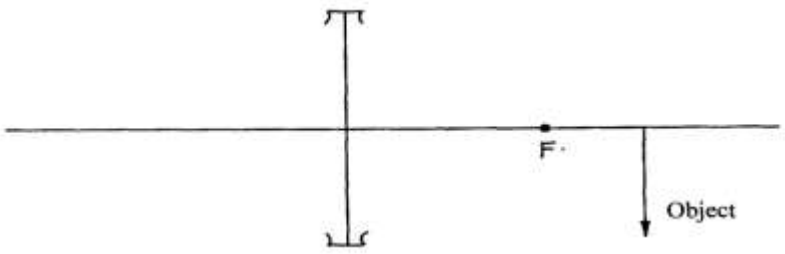

Figure 1

Construct the image on the diagram. (2mks)

xvi) What determines the hardness of X-rays? (1mk)

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xvii) Distinguish between the terms 'photoelectric' and 'thermionic' effect. (2mks)

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xviii) The **figure 2** below shows a light rod balanced due to the action of the forces shown. Q is a magnet of weight 4N and R is a permanent magnet which is fixed. Determine the force between Q and R and state whether it is attractive or repulsive. (3mks)

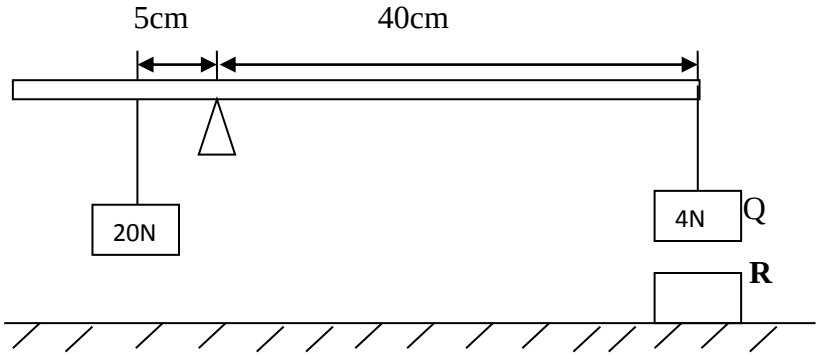

Figure 2

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xix) Determine the ammeter reading when the potential difference of 3.0 volts is supplied across PQ in figure 3. (3mks)

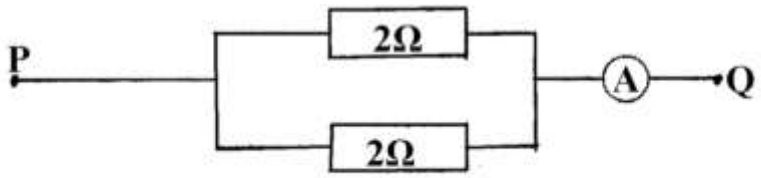

Figure 3

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xx) The chart below shows an arrangement of different parts of the electromagnetic spectrum.

Radio	A	Visible	B	X – Rays	Gamma Rays

Name the possible radiations represented by letter **B**. (1mk)

…

xxi) A student stands at a distance 400m from a wall and claps two pieces of wood. After the first clap the student claps whenever an echo is heard from the wall. Another student starts a stopwatch at the first clap and stops it after the twentieth clap. The stopwatch records a time of 50 seconds. Find the speed of sound. (3maks)

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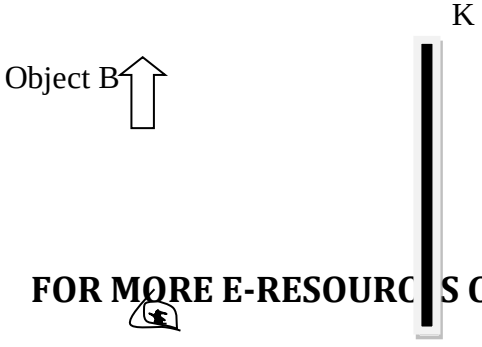
xxii) The **figure 4** below shows a plane mirror KL and an object B.



Eye L

Figure 4

(g) Complete the ray diagram to show how the person sees the image. (2mks)

(h) State the nature of the image formed. (2mks)

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xxiii) The following equation represents a decay series.

$$^{210}_{83}\text{Pb} \xrightarrow{x} {}^{210}_{84}\text{Po} \xrightarrow{\alpha} {}^{a}_{b}\text{Q}$$

Identify the radiation **x** and determine the values of **a** and **b.** (2mks)

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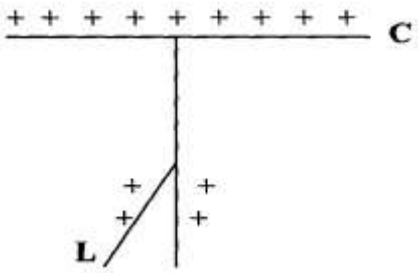
xxiv) A gold leaf electroscope is positively charged as shown in the diagram below where **C** is the cap and **L** is the gold leaf. State and explain what happens to **L** when a positively charged rod is brought near **C** without touching it. (2mks)



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SECTION B (55 MARKS)

Answer ALL questions in this section in the spaces provided after each question.

xxv) a) Differentiate between transverse and longitudinal waves. (2mks)
b) **Figure 5** shows a transverse stationary wave along a string

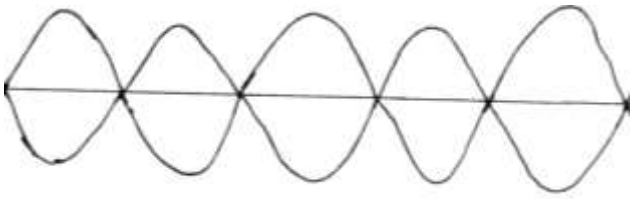

Figure 5

i). Label the nodes and antinodes on the diagram above. (2mks)

ii). If the distance between an anti-node and consecutive node is 1.0×10^{-3}m, determine the wavelength of the stationary wave. (2mks)

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c). Five successive wave frequency in a ripple tank are observed to spread a distance of 6.4cm. If the vibrator has a frequency of 8 Hz, determine the speed of the wave. (3mks)

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d). The **figure 6** below shows a displacement-time graph for a wave motion

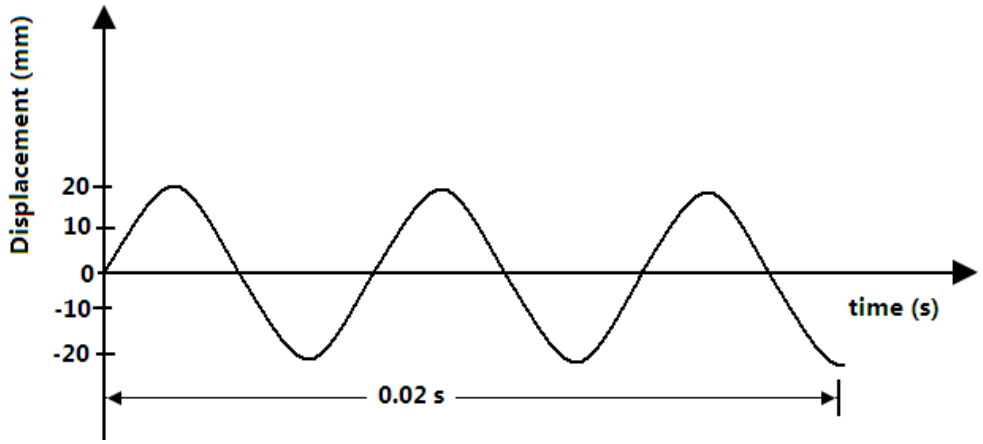

Figure 6

What is the frequency of the wave? (3marks)

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xxvi) (a) What do you understand by the term **e.m.f** of a cell?. (1mk)

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(b) A cell of e.m.f **E** and internal resistance **r** is used to pass a current through various resistors R Ohms and the values of current recorded in the table below.

R(Ohms)	1.6	2.1	2.5	3.6	5.0	8.0

I(A)	1.0	0.8	0.7	0.5	0.37	0.34
1/i(A^{-1})						

i. Complete the table for the values of **1/i** giving your answer to 3d.p. (3mks)

ii. Plot a graph of **1/i** versus **R.** (5mks)

iii. Given that the equation **E =I(R +r),** use your graph to determine the values of **E** and **r.** (5mks)

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xxvii) a) State **three** factors that determine the capacitance of a parallel plate capacitor. (3marks)

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b) Three capacitors of capacitance 200μf, 300μF and 600μf are connected together in a circuit.

iv) Draw a circuit diagram to show the arrangement of the capacitors which gives an effective capacitance of 100μf. (2marks)

c) The figure 6 below shows a circuit where a battery of e.m.f 6V , switches X and Y, two capacitors of capacitance 2 μF and 4 μFare connected.

6V

X

Y

2µF

4 µF

Figure 6

i. Determine the charge stored in the 2 µF capacitor when switch X is closed and switch Y is open. (3marks)

……
……
……
……

ii. When switch Y is finally closed and switch X is open, determine the potential difference across each capacitor. (3marks)

……
……
……
……
……..

m) Briefly explain how the lightening arrester works. (3mks)

……
……
……
……
……

xxviii) (a) Define the term 'work function'. (1mk)

……
……
……

(b) List three factors which affect photoelectric effects. (3mks)

……
……
…….

(c) The table below shows the stopping potential and the corresponding frequencies for a certain photocell.

Stopping potential V_s (V)	0.2	0.6	1.10	1.42	1.83
Frequency f ($\times 10^{14}$Hz)	4.0	5.0	6.0	7.0	8.0

Plot a graph of stopping potential against frequency. (5mks)

Use your graph to determine;

(e) The threshold frequency.(2mks)

……
……
……
……

(f) Plank's constant. (Take **e** to be 1.6×10^{-19}C) (2mks)

……
……
……
……

(g) Work function. (2mk)

……
……
……
…

SET 1 HOLIDAY

ASSIGNMENT

PHYSICS PP3

Question 1

You are provided with the following:-

xii) Vernier callipers
xiii) Micrometer screw gauge
xiv) Masses; 10g, 20g, 50g and 100g
xv) A helical spring
xvi) Metre rule or half metre rule

Proceed as follows

K. Determine the number of complete turns of the helical spring.
N = _____ (1 Mark)

L. Measure the external diameter of the spring using the vernier callipers
D = _____ m (1 Mark)

M. Use the micrometer screw gauge to determine the diameter of the wire of the spring.
d = _____ m (1 Mark)

N. Determine the value of m (2 Marks)
$N = \frac{0.4D}{dm}$

……

……

……

O. Suspend the helical spring vertically alongside the clamped half metre rule as shown in figure 1 below.

Determine the length L_0, of the spring before loading it.

L_0 = _____ cm

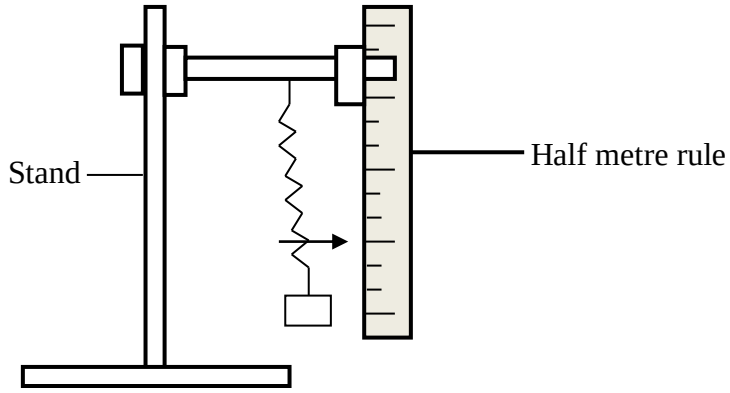


Figure 1

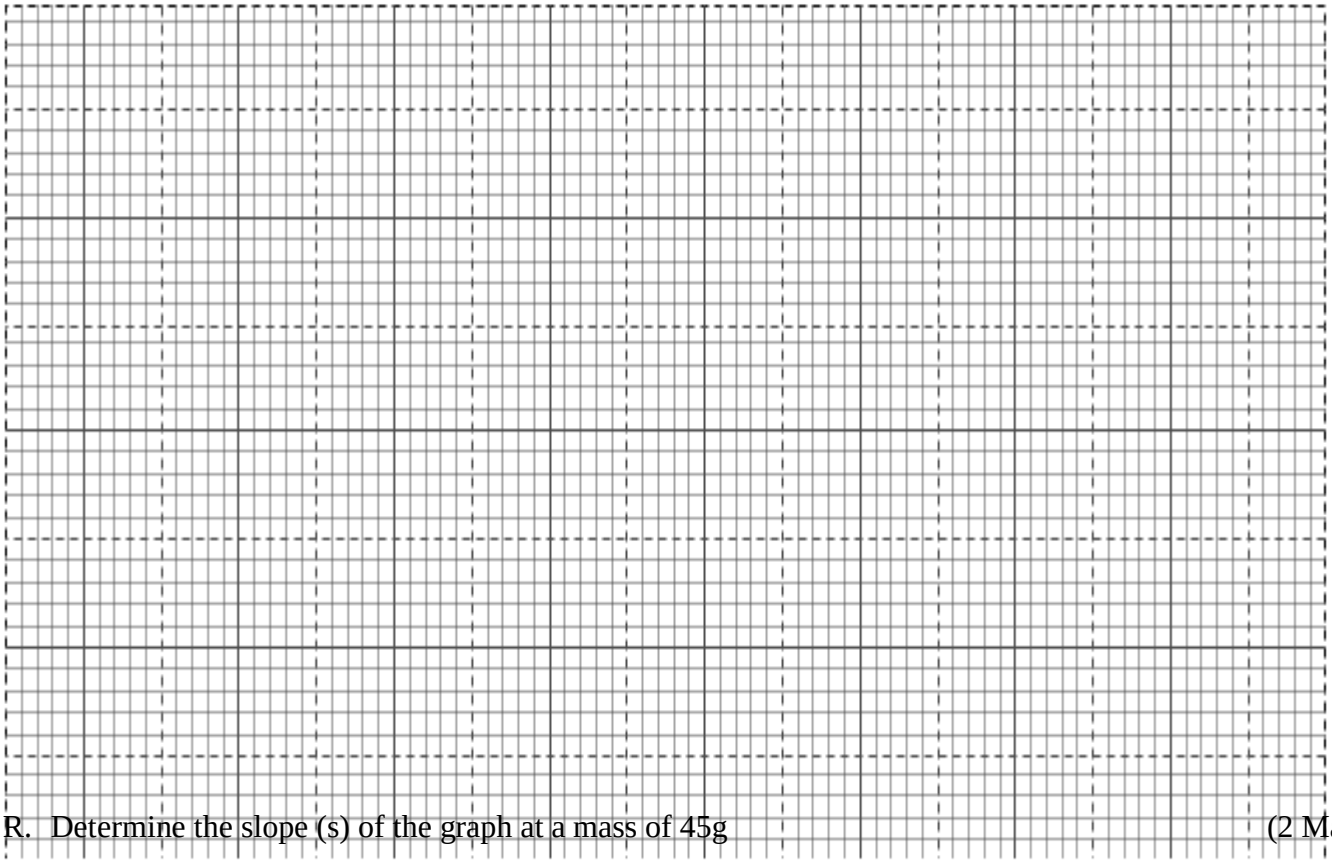
P. Load the spring with a mass of 20g and determine the new reading on the metre rule. (L) Record this in the table below.
Calculate the extension $e = L - L_0$ due to the mass of 20g and record the value in the table given below.
Repeat step f for other masses and complete the table.

Mass (g)	0	10	20	30	40	50	60	70	80	90	100
Weight (N)											
Reading (L) (cm)											

Extension e (cm)											
$\frac{1}{e}$ (cm^{-1})											

(6 Marks)

Q. Plot a graph of weight (N) against $\frac{1}{e}$ (cm^{-1}) (4 Marks)



R. Determine the slope (s) of the graph at a mass of 45g (2 Marks)

……

……

S. Given that m = $\frac{-255T}{(S+60)^2}$

Determine the value of T where (S) is the slope at 45g (3 Marks)

……

…

……

2. This question consists of two parts A and B attempt both parts.

PART A

You are provided with the following:

xviii) 5 optical pins
xix) A glass block
xx) A plain paper
xxi) A soft board
xxii) 4 thumb pins

Proceed as follows:

n) Fix the white piece of paper on softboard using the thumb pins provided. Place the glass slab on the white paper and draw the outline of the block on the paper. Remove the block and indicate the sides ABC and D as shown. On side BC determine the centres of side BC using your ruler and fix pin P_0 as shown. Looking from one side at the opposite end of the slab fix pin P_1, P_2 so that they are in with the image I of P_0. On the other side locate the same image using pins P_3 and P_4 as shown in figure 2. Remove the glass block and produce lines P_1, P_2 and P_3, P_4 to their points of intersection which is the position of the image I.

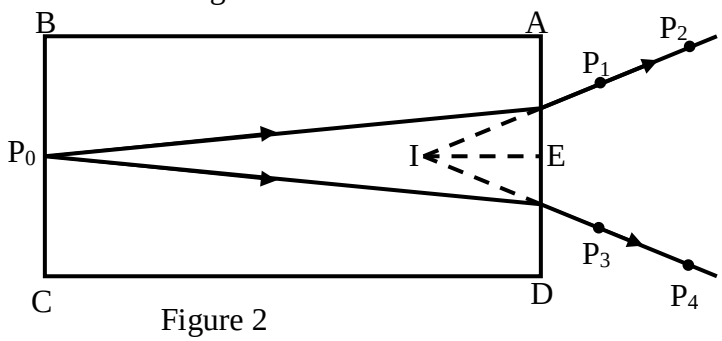


Figure 2

o) (i) Using the half metre rule measure the lengths

EP0 = _____ cm (1 Mark)

EI = _____ cm (1 Mark)

(ii) Work out the ratio n = $\frac{EP_0}{EI}$ (2 d.p) (1

……

(iii) What does n represent? (1 Mark)

……

……

Part B

You are provided with the following.

b) A plain sheet of paper
c) A soft board
d) 4 optical pins

P_4

e) 4 thumb pins
(f) A triangular prism

Proceed as follows

p) (i) Firmly fix the plain sheet of paper on the softboard using the thumb pins and place the prism near the centre of the paper. Trace the outline of the prism using a pencil.

(ii) Remove the prism from the outline and label the vertices of the outline PQ and R.

On the side QR mark a point and draw a normal OZ at this point. Measure an angle of 200 from the normal and draw a line along this angle as shown in figure 3.

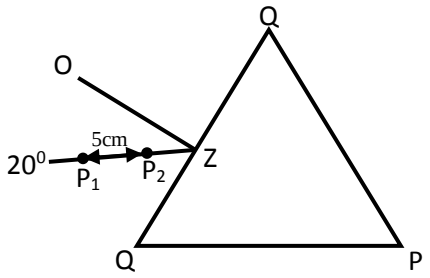


Figure 3

q) Replace the prism on the outline and fix pins P_1 and P_2 on the 20^0 line at a distance of 3cm from each other.

View the images of the pins P_1 and P_2 through side PR and fix other pins P_3 and P_4 so that all the pins appear on one line. Remove the prism and draw a line to pass through the holes made by pins P_3 and P_4 extend the line into the outline as shown in figure 3. Also extend the 20^0 line so that the two lines cross each other. Determine angle θ and record in the table below.

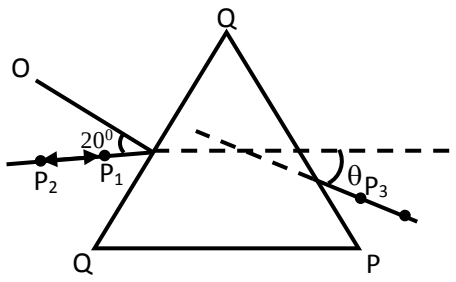
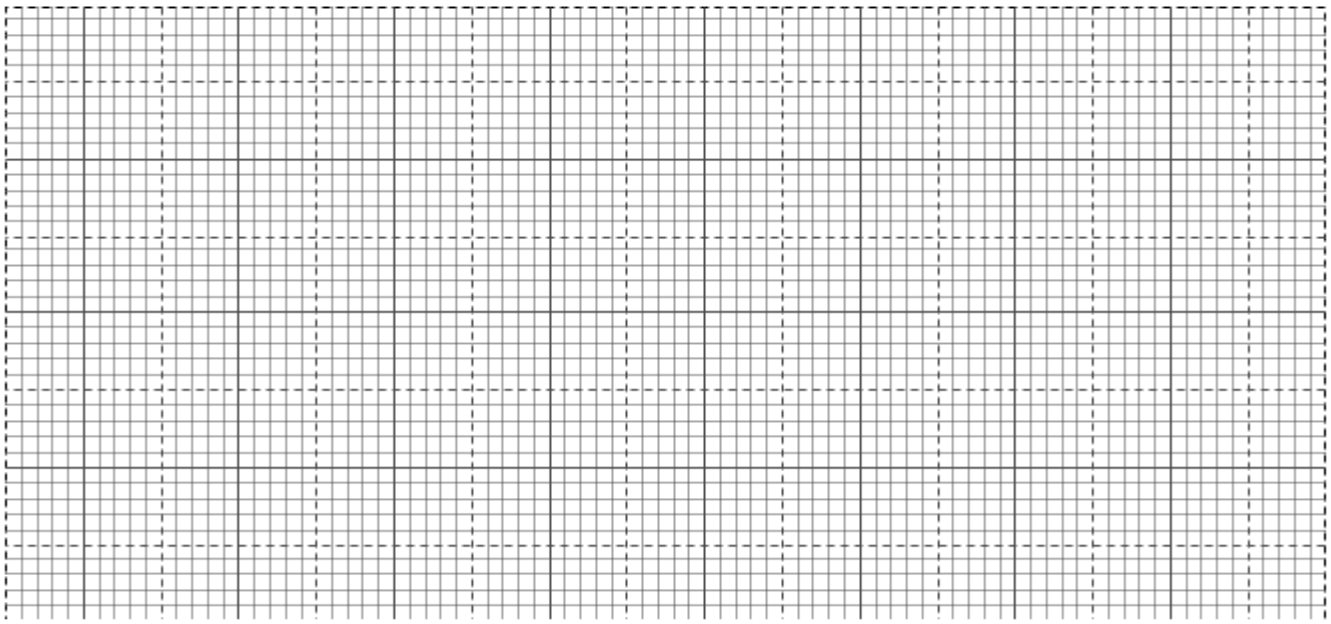


Figure 4

r) Repeat the procedure and complete the table below.

Angle I ($^{0)}$	20	30	40	50	60	70
Angle θ						

the grid provided plot a graph of angle θ against angle i (5 Marks)



s) Use your graph to determine the highest value H_{max} of angle θ H_{max} = (2 Marks)

……

……

t) Determine the constant R for the glass prism from the formula. (3 Marks)

$R = \frac{Cos\ 40}{Sin^2\ (16+\frac{H_{max}}{s})}$

……

SET 1 HOLIDAY

ASSIGNMENT

GEOGRAPHY PP1

This paper consists of 4 printed pages. Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

SECTION A

Answer all questions in this section

1. **a)** Identify **Two** forces responsible for the spherical shape of the earth. **(2 marks)**

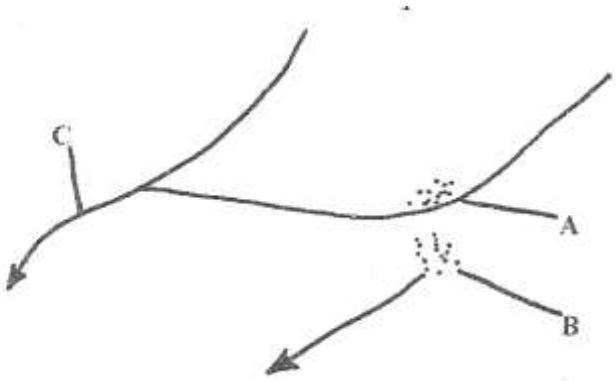
   b) Give **Three** reasons why the interior of the earth is still hot. **(3 marks)**

2. **a)** Outline **Two** characteristics of the troposphere. **(3 marks)**

   b) Apart from cloud cover, identify **Two** other factors which influence the amount of solar radiation received on the earth's surface. (**2 marks)**

3. **a)** What is river rejuvenation. **(2 marks)**

   b) The diagram below represents a river capture,



   Name the features marked A, B, C. **(3 marks)**

4. **a)** Name a place in Kenya where tarns are found. **(1 mark)**

b) Describe how a tarn is formed. **(4 marks)**

5. (a) Give **two** main zones of the atmosphere. **(2 marks)**

(b) What is?

(i) Zero lapse rate. **(2 marks)**

(ii) Negative lapse rate. **(2 marks)**

SECTION B:

Answer question 6 any other two questions from this section.

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

(a) (i) What is the altitude of the lowest contour shown on the map? **(1 mark)**

Give the **six-figure** grid reference of Mboni dam. **(2 marks)**

(iii) What is the length in Kilometres of the All Weather Road Bound Surface C94 from the junction with the Dry Weather Road D502 to Northing 84? **(2 marks)**

b) Draw a rectangle measuring 10 cm by 8 cm to represent the area enclosed by Eastings 90 and 00 and Northings 62 and 70. **(1 mark)**

On the rectangle, mark and name the following features:

xvii) Musengo school

(ii) Road E742

(iii) Kitui Hills **(3 marks)**

(c) (i) Citing evidence from the map, identify **four** social services offered in Mutitu (Ndooa) township. **(4 marks)**

(ii) Describe the relief of the area covered by the map. **(6 marks)**

(d) Describe the characteristics of the long profile of river Ikoo. **(6 marks)**

7. a) State **three** characteristics of the inter-tropical convergence zone (ITCZ). **(3 marks)**

b) With the aid of a well labeled diagram describe how relief rainfall is formed. **(6 marks)**

c) State **five** characteristics of the hot desert climate. **(5 marks)**

d) You are required to carry out a field study to determine the relationship between climate and vegetation in your district.

i) Give **three** reasons why you would need the map of the district. **(3 marks)**

ii) Name **two** sampling techniques you are likely to use during the field study. **(2 marks)**

iii) Give **two** reasons why sampling would be appropriate for this field study. **(2 marks)**

iv) State **four** methods you would use to record data during the field study. **(4 marks)**

8. a) (i) What is a lake? **(2 marks)**

(ii) State **three** factors that determine the permanency of a lake. **(3 marks)**

b) Describe how Lake Kanyaboli was formed. **(6 marks)**

c) Explain **four** causes of salinity of lake Magadi. **(8 marks)**

d) Explain **three** negative effects of lakes on human activities. **(6 marks)**

9. (a) State **four** causes of mechanical weathering. **(4 marks)**

(b) (i) Describe the carbonation process of chemical weathering. **(3 marks)**

(ii) Name **two** rocks that can be weathered through the carbonation process. **(2 marks)**

(iii) Name **two** features that can be formed on the earth's surface as the carbonation process of weathering takes place. **2 marks)**

(c) (i) What is an exfoliation dome? **(1 mark)**

(ii) Describe how an exfoliation dome is formed. **(3 marks)**

(d) Explain **three** ways in which weathering positively influence man's activities and **two** negative effects of weathering. **(10 marks**)

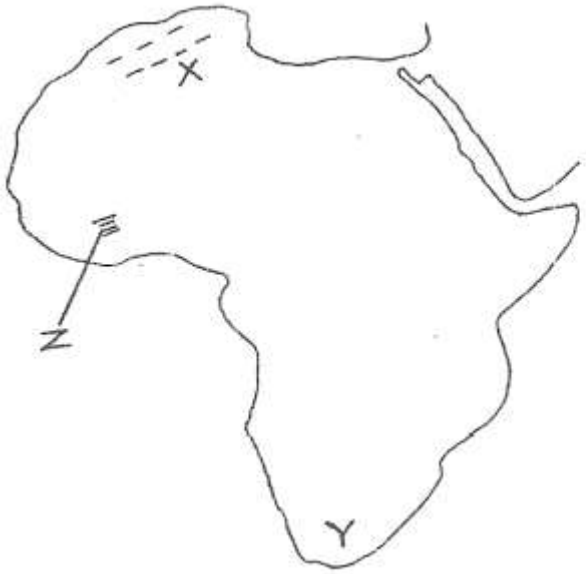
10. (a) What is the difference between faulting and folding? **(2 marks)**

(b) Name

(i) Two types of faults. **(2 marks)**

(ii) Three types of folds. **(3 marks)**

On the outline map of Africa provided name the fold mountains marked X,Y, Z **(3 marks)**



(c) With the aid of well labeled diagrams, **describe** the formation of Fold Mountains. **(10 marks)**

(d) **(i)** What is the name given to the period of mountain building? **(1 mark)**

(ii) Identify **four** main mountain buildings periods ever known in history**.** **(4 marks)**

SET 1 HOLIDAY

ASSIGNMENT

HISTORY PP1

SECTION A: (25 MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION

1. Name **one** area in Kenya where the remains of Australopithecus were found. **(1 mark)**

2. State **one** way in which the Abagusi and Kipsigis interacted during the pre colonial. **(1 mark)**

3. Give **one** religious function of the Oloibon among the Maasai in the 19th Century. **(2 marks)**

4. State **two** factors that led to the decline of Kilwa by 1490 AD. **(2 marks)**

5. Give **one** evidence that shows that Chinese Traders reached the Kenyan Coast before 1500 AD**.**

(1 mark)

6. State **two** reasons which led to the decline of the long distance trade. **(2 marks)**

7. What is dual citizenship? **(1 mark)**

8. Give the **main** reason why the Colonial Government introduced pool tax in Kenya. **(1 mark)**

9. State **two** terms of the Heligoland treaty of 1890. **(2 marks)**

10. State the **main** role of the Executive arm of the government in Kenya. **(1 mark)**

11. Give **two** functions of the County Assembly in the County Government. **(2 marks)**

12. Identify **two** sources of Nyayo philosophy. **(2 marks)**

13. Name **two** education commissions that were established by the Kenyan Government after independence. **(2 marks)**

14. State the **main** reason why the Second Lancaster House Conference was held in London in 1962. **(1 mark)**

15. What is the **main** role of the opposition party in Kenya? **(1 mark)**

16. Name the first African to be nominated to the Legislative Council. **(1 mark)**

17. State **one** role played by the Public Service Commission in Kenya. **(1 mark)**

SECTION B: (45 MARKS)

ANSWER ANY THREE QUESTIONS IN THIS SECTION

18. a) Give **three** reasons for the migration and settlement of the Somali into Kenya. **(3 marks)**

b) Explain **six** results of the migration and settlement of the Cushites into Kenya. **(12 marks)**

19. a) State **three** reasons which made the British Government encourage white settlement in Kenya during the colonial period. **(3 marks)**

b) Explain **six** terms of the Devonshire White Paper of 1923. **(12 marks)**

20. a) Give **three** characteristic of independent schools and churches. **(3 marks)**

b) Explain **six** factors that led to the rise of independent churches and schools in Kenya. **(12 marks)**

21. a) State **five** factors that led to the introduction of multi-party democracy in Kenya in 1992. **(5 marks)**

b) Explain **five** roles played by political parties in governance and nation building. **(10 marks)**

SECTION C: (30 MARKS)

ANSWER ANY TWO QUESTIONS IN THIS SECTION

22. a) Give **three** circumstances under which the freedom of movement can be restricted in Kenya**.**

(3 marks)

b) Explain **six** principles of democracy as practiced in Kenya. **(12 marks)**

23. a) Give **three** functions of the Supreme Court in Kenya. **(3 marks)**

b) Explain **six** factors that may undermine the administration of justice in Kenya. **(12 marks)**

24. a) State **three** components of the National Budget. **(3 marks)**

b) Explain **six** challenges faced by the national government in the implementation of a national budget. **(12 marks)**

SET 1 HOLIDAY ASSIGNMENT

HISTORY PP2

Section A: (25 marks)

Answer all the questions in this section

1. State **two** archaeological sources of information on History and Government. **(2 marks)**

2. State **two** ways in which early man obtained food. **(2 marks)**

3. State **one** theory explaining the origin of agriculture. **(1 mark)**

4. Explain **two** roles of Tourages in Trans-Saharan Trade. **(2 marks)**

5. Identify **two** improvements which were made on Macadamized roads in the 19th Century. **(2 marks)**

6. Give **two** principal organs of the United Nations. **(2 marks)**

7. State **two** disadvantages of using wind as a source of energy. **(2 marks)**

8. State the main reason that led to the decline of Meroe. **(1 mark)**

9. Give **two** functions of the Kabaka in the Buganda Kingdom. **(2 marks)**

10. What is direct democracy? **(1 mark)**

11. Identify **one** African country that was not colonized. **(1 mark)**

12. Identify **one** super power that was involved in cold war. **(1 mark)**

13. Give **one** method used by the French to administer their colonies in Africa. **(1 mark)**

14. State **two** objectives of the African National Congress. **(2 marks)**

15. Give the **main** reason for the failure of the League of Nations. **(1 mark)**

16. Name on treaty signed between Lobengula and the British during the colonization. **(1 mark)**

17. Name **one** political party in India. **(1 mark)**

Section B: (45 marks)

Answer any three questions in this section

18. a) State **five** reasons why early people domesticated crops and animals during the Neolithic period. **(5 marks)**

(b) Explain **five** causes of food shortages in Africa today. **(10 marks**

19. (a) Identify **three** methods used by nationalists in Ghana during their struggle for independence. **(3 marks)**

(b) Describe **six** factors that contributed to the struggle for independence in South Africa. **(12 marks)**

20. (a) State **five** factors that contributed to the rise and expansion of the Asante Kingdom by the 19th century. **(5 marks)** **(b)** Describe the political organization of the Asante Empire in the pre-colonial period. **(10 marks)**

21. a) Identified **three** chartered companies which were used European powers to acquire colonies in Africa. **(3 marks)**

(b) Discuss **six** political impacts of partition of Africa by European powers. **(12 marks)**

Section C:

Answer any two questions in this section (30 marks)

22. a) State any **two** major organs of the United Nations organization. **(3 marks)**

b) Explain any **six** reasons why it has become difficult for the United Nations to successfully achieve her goals in the world today. **(12 marks)**

23. a) State **three** reasons for the collapse of the league of nations **(3 marks)**

b) Explain **six** political results of the Second World War. **(12 marks)**

24. a) State **five** constitutional powers of the president of India. **(5 marks)**

b) Explain **five** advantages of the federal system of Government in the United States of America (USA). **(10 marks)**

SET 1 HOLIDAY

ASSIGNMENT

CRE PP1

1. (a) Describe the second account of creation in Genesis 2:4b-25. **(7 marks)**

(b) Outline **four** differences between the biblical view of sin and the African concept of evil.

(c) Identify **five** ways in which Christians can avoid sin. **(5 marks)**

2. (a) Describe the making of the Sinai covenant. **(8 marks)**

(b) State **seven** reasons why presidential oathing is an example of a modern covenant. **(7 marks)**

(c) What do we learn from the breaking of the Sinai covenant. **(5 marks)**

3. **(a)** Outline **seven** duties of Samuel in Israel. **(7 marks)**

   (b) How did Prophet Elijah fight against corruption and injustice in Israel. **(7 marks)**

   (c) Why should Christians fight against the spread of devil worship today. **(6 marks)**

4. **(a)** Identify **six** methods used by the Old Testament prophets to pass on their messages.

   (b) What were the teachings of Amos on social justice and responsibility. **(7 marks)**

   (c) How is prophecy practiced in the church today. **(7 marks)**

5. **(a)** Identify **six** symbolism used during the call of Jeremiah. **(7 marks)**

   (b) State ways through which king Josiah brought the people of Judah back to the covenant way of life. **(8 marks)**

   (c) What can Christians learn from the call of Jeremiah? **(6 marks)**

6. **(a)** Identify and explain elements of worship in traditional African society. **(6 marks)**

   (b) Outline **seven** roles of the priests in traditional African society. **(7 marks)**

   (c) Show how marriage in traditional African society has faced transition in the modern society. **(7 marks)**

SET 1 HOLIDAY

ASSIGNMENT

CRE PP2

This paper consist of 2 printed pages. Candidates should check the paper to ensure that all pages are printed as indicated and no questions are missing.

1. **a)** Outline the message of Zachariah in the Benedictus Lk 1:67-80. **(7 marks)**

   b) State **six** teachings of Jesus about John the Baptist. **(6 marks)**

c) In what ways does the church win people to the kingdom of God? **(7 marks)**

2. a) Outline the teaching about Jesus from the cure of the paralytic Lk 5:17-24. **(7 marks)**

b) Give **six** incidents when Jesus changed the traditional Jewish attitude towards the poor and despised. **(6 marks)**

c) Give reasons why the poor may not accept the word of God. **(7 marks)**

3. a) Relate the healing of the blind man in Jericho Lk 18:35-43. **(8 marks)**

b) Give **six** reasons why some people did not recognise the authority of Jesus during his ministry. **(6 marks)**

c) Identify ways through which the church is helping the sick in the community. **(6 marks)**

4. a) Explain the New Testament teaching on the unity of believers. **(8 marks)**

b) State the reaction of the people who were present during the Pentecost. **(6 marks)**

c) In what ways can the gift of prophecy strengthen the church today. **(6 marks)**

5. a) Give reasons why employment of minors is rampant in Kenya. **(6 marks)**

b) Identify the consequences of denial of rest to employees. **(8 marks)**

c) State **six** measures the government is taking to narrow down the gap between the rich and the poor. **(6 marks)**

6. a) Explain the Christian understanding of the use of science and technology. **(6 marks)**

b) Identify **seven** benefits of genetic engineering to man. **(7 marks)**

c) Give reasons why Christians should participate in blood donation. **(7 marks)**

mwalimuepublishers@gmail.com

SET 1 HOLIDAY

ASSIGNMENT

COMPUTER PP1

SECTION A (40 MARKS)

Answer all the questions in this section in the spaces provided

T. State any **two** peripheral devices that are powered by the system unit. (1 mk)

……

U. The following are symbols of some keys found on the keyboard. Name the keys represented by the symbols. (2 mks)

V. Explain any **three** functions of system software in a computer (3mks)

W. As a computer student you have been asked to assist in buying an input device. State any **four** factors to consider when buying input devices. (4mks)

X. i. The arithmetic logic unit, the control unit and the main memory use electrical pathways or links called buses. State and explain the three types of buses. (3mks)

ii. What is the role of special purpose memories in the microprocessor? (1 mk)

Y. Outline the **three** differences between primary memory and secondary memory. (3mks)

…

……

Z. Citing relevant examples state **two** advantages of integrated software as opposed to single purpose. (2mks)

……

……

AA. a. Define the term mail merging (1 mk)

……

……

b. Name **two** files that are created in mail merging process (1mks)

……

……

9. (a) Distinguish between a workbook and a worksheet as used in spreadsheets (2mks)

……

……

……

……

(b) What is the meaning of "what if analysis" with respect to spreadsheet? (1mk)

……

……

10. Define the following terms in relation to internet (2 mks)

i). Downloading

……

……

ii). Hyperlink

……

……

11. Benjos was instructed by his teacher while typing a Microsoft word document to replace all the occurrences of the word MS with Microsoft. Highlight the steps to do this (3mks)

……

12. What is the difference between logical and physical file? (2mks)

……

……

13. Explain any **three** types of computer processing files. (6mks)

……

14. Give a reason why HTML is not considered as a true programming language. (1mk)

……

……

15. (a) Define the following computer crimes

(i) Piracy (1mk)

……

……

(ii) Industrial espionage (1mk)

SECTION B (60 MARKS)

Answer questions 16 (COMPULSORY) and any other three questions in this section

16. (a) Draw a flowchart for a program that is to prompt for N numbers, accumulate the sum and

them find the average. The output is the accumulated totals and the average. (5 mks)

(b) Write a pseudo code for the above program. (4 mks)

(c) Explain **three** types of control structures use in programming. (3mks)

……

……

……

……

17. (a) i. Subtract 110_2 from 11010_2 (1mk)

ii. Find the sum of binary number 101.101_2 and 110.100_2 (1mk)

(b) i. Convert binary number 11010110.1001_2 into octal number. (1mk)

ii. Convert binary number 11010110.1001_2 into hexadecimal number. (1 mark)

(c) Convert the following numbers to their decimal equivalent

i. 11.011_2 (2 marks)

ii. 0.11011_2 (2 mrks)

(d) i. Convert $3BD_{16}$ to Octal. (3mks)

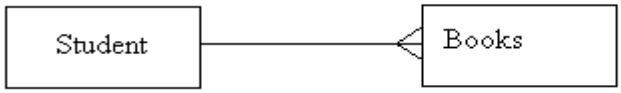
ii. Using one's complement, calculate $5_{10} - 9_{10}$. use six bit in your calculation. (3mks)

(e) State the following types of transcription errors: (2 marks)

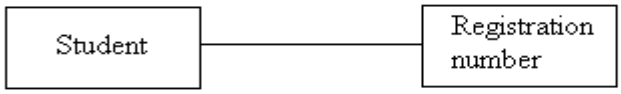
i. 3455 instead of 3456

ii. Simth instead of Smith

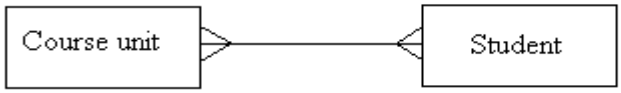
18. (a) State and explain the following types of relationship as used in database design

i. 

(2 marks)

ii. 

(2 marks)

iii. 

(2 marks)

(b) i. Explain the difference between primary key and an index key as used in database application

(2 marks)

……

……

……

……

ii. Outline the functions of a primary key (2 marks)

……

……

(c) Describe the following types of database model

i. Network model (2 marks)

……

……

ii. Relational model (2 marks)

……

19. (a) i. What is an operating system? (1 mark)

…

ii. Maintaining security is one of the functions the operating system. Explain how the operating system maintains security (2mks)

iii. Explain how an operating system controls I/O devices. (2mks)

xviii) What does the following control measures against computer crime involve? (5 mks)

a. Audit trail

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ii. Data encryption

iii. Log files

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iv. Passwords

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v. Firewall

(c) Briefly explain what happen during power on self test (POST) (3 mks)

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(d) Explain the functions of complementary metal-oxide semiconductor (CMOS) (2 mks)

20. a) State **two** advantages and two disadvantages of the ring network topology

Advantage (2mks)

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Disadvantages (2mks)

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b) State **two** roles and responsibilities of each of the following ICT professionals

i) Webmaster (2mks)

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ii) Network Administrator (2mks)

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iii) Computer scientists (2mks)

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iv) System Administrator (2mks)

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v) Software Engineer (2mks)

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c) Explain the term accreditation as used in education (1mk)

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SET 1 HOLIDAY

ASSIGNMENT

BUSINESS PP1

xix) Identify the book of original entry in which each of the following transactions would be recorded. **(4 marks)**

	Transaction	**Book of original entry**
u)	Received cash sh. 25,000 from Kamau, a debtor.	
v)	Goods previously sold are now returned by Wanjohi, a debtor, sh. 2000	
w)	Bought furniture on credit sh. 50,000	
x)	Sold goods worth sh. 8000 on credit to James	

xx) Highlight **four** differences between a savings account and a current account. **(4 marks)**

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xxi) State **four** duties of customs officials in the bonded warehouse. **(4 marks)**

xxii) The following information relates to Malindi traders for the year 2012.

Turn over	Shs. 540,000
Margin	40%
Rate of turnover	6 times
Expenses	Sh. 80,000

From the above information, calculate:-

xxix) Gross profit

xxx) Cost of goods sold

xxxi) Net profit

xxxii) Average stock **(4 marks)**

xxiii) Isaac has just completed his studies and would like to start a business. Highlight **four** factors that would influence him to locate his business near the market. **(4 marks)**

xxiv) Outline **four** disadvantages of automatic vending machines. **(4 marks)**

xxv) Highlight **four** factors that may influence a shift in supply curve to left. **(4 marks)**

xxvi) State the effect of the following transactions on the capital indicating either "increase, decrease, or no effect" **(4 marks)**

	Transaction	**Effect on capital**
Dec. 21	Owner converted personal property to business property worth sh. 15,000	
Dec. 23	Received a cheque for sh. 15,000 being amount borrowed from a lending institution	
Dec. 25	Business made a profit of sh. 100,000	
Dec 28	Owner took cash sh. 7000 from business for his own personal use.	

xxvii) Highlight **four** factors to consider when selecting a means of reproducing documents **(4 marks)**

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xxviii) State **four** ways in which a society benefits from indirect product. **(4 marks)**

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xxix) Outline **four** ways in which the utility of a commodity can be increased. **(4 marks)**

xxx) Highlight **four** roles played by stock exchange market in the economy. **(4 marks)**

xxxi) Highlight **four** types of direct tax. **(4 marks)**

xxxii) Outline **four** benefits of export processing zones to the economy. **(4 marks)**

xxxiii) Classify each of the following items of government expenditure as either development or recurrent. **(4 marks)**

	Item	**Recurrent**	**Development**
8.	Purchase of medicine for hospitals		
9.	Construction on of a new road		
10.	Payment of soldiers' salaries		
11.	Purchase of machinery for road construction		

xxxiv) In the course of preparing her balance sheet as at 31st December 2014, Joyce found that she had capital amounting to sh. 240,000 in her business. During the year, investments to totalled to sh. 100,000 while drawings were sh. 112,000. Calculate her initial capital as at 1st January 2014 if the profit was sh. 76,000**.** **(4 marks)**

xxxv) Outline **four** circumstances under which a co-operative society may be dissolved**. (4 marks)**

xxxvi) State **four** disadvantages of railway transport. **(4 marks)**

xxxvii) Outline **four** roles of filing in an office. **(4 marks)**

xxxviii) Highlight **four** advantages of a bill of exchange **(4 marks)**

xxxix) State **four** disadvantages of written communication. **(4 marks)**

xl) Highlight **four** functions of advertising agencies. **(4 marks)**

xli) Outline **four** challenges of young population**.** **(4 marks)**

xlii) State **four** accounting errors that may not be disclosed by the trial balance. **(4 marks)**

xliii) Highlight **three** causes of demand pull inflation. **(4 marks)**

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SET 1 HOLIDAY

ASSIGNMENT

BUSINESS PP2

1. **(a)** Explain **five** reasons for trade restriction by a country. **(10 marks)**

(b) With the help of a diagram explain the circular flow of income in a two sector economy.

(10 marks)

2. **(a)** Explain **five** principles of public expenditure that must be considered before any expenditure can be incurred by the government. **(10 marks)**

(b) The following balances relate to Kilindini traders as at 31st July 2014.

	Shs.
Stock 1/8/2013	60,000
Salaries	140,000
Creditors	70,000
Capital	1,400,000
Purchases	300,000
Rent	20,000
Insurance	80,000
Debtors	120,000

Sales	700,000
Stock (31/7/2014)	40,000
5 year bank loan	400,000
Returns inwards	30,000

Required:-

i) Prepare a trading and profit and loss account for the year ending 31st July 2014.

(5 marks)

ii) Calculate the following ratios

Margin **(1 mark)**

Rate of stock turn over **(2 marks)**

Return on capital **(2 marks)**

3. **(a)** Explain **five** causes of unemployment. **(10 marks)**

(b) Explain **five** circumstances under which a pro-forma invoice may be used. **(10 marks)**

4. **(a)** Explain **five** measures that can be used by an office to safeguard the property of the organization. **(10 marks)**

(b) Explain **five** ways in which the government may promote local trade. **(10 marks)**

5. **(a)** Explain **four** ethical issues in product promotion. **(8 marks)**

(b) On 1st September 2013 Thika Traders had cash in hand sh. 560,000 and a following transaction took place during the month.

Sept. 8 Paid the following creditors by cheque after deducting 10% discount in each case:-

Benson sh. 140,000

Martha sh. 98,000

Sept 13 Settled Kimani's account sh. 70,000 by cheque after deducting 10% cash discount.

Sept 17 Received cheques from the following debtors after deducting 10% discount in each case:-

Mwanaisha s h. 350,000

Fatma sh. 105,000

Sept 24 Received the following cheques from debtor after having deducted cash discount of 2% in each case:-

Josephine sh. 411,600

Damaris sh. 123,480

Sept 28received the following amounts in cash from debtors handing deducted cash discount of 2%

James sh. 82,320

Faith sh. 246,960

Required:-

Record the above transactions in a **three** column cashbook and balance it off at the end of the month.

(12 marks)

6. **(a)** Explain **f**ive fiscal policy measures that can be used to control inflation. **(10 marks)**

(b) Explain **five** circumstances under which face to face communication would be preferable to a firm. **(10 marks)**

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SET 1 HOLIDAY ASSIGNMENT

AGRIC PP1

SECTION A (30 MRKS)

Answer all question in this section in the space provided

xxxiii) Differentiate between olericulture and pomoculture as used in crop production .(1mrk)

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xxxiv) List the physical weathering agents in soil formation process (1 ½ mrks)

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xxxv) Give four method of farming (2mrks)

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xxxvi) Give two examples for each of the following types of cost incurred in broiler production .

xxiii) Variable cost (2 marks)

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xxiv) fixed cost (2 marks)

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xxxvii) Give four advantages of crop rotation .(2mrk)

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xxxviii) State four factors that that should be considered when classifying crop pest (2mrks)

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xxxix) Give three reasons why a water logged soil is unsuitable for most crops(1 ½)

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8. Give four advantages of tissue culture (2mrks)

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y) Outline four observable indictors of economic development of a nation (2mrks)

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z) Outline four indicators of well decomposed manure (1 ½)

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aa) Give two conditions where opportunity cost does not exist (2mrks)

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bb) Give four management practice that promote high herbage yields in pasture production (2mrks)

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cc) Give three reasons why primary cultivation should be done early before the onset of the rains(1 ½)

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dd) Give two examples of farm records that are general in nature .(1mrk)

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ee) Give four role of nitrogen in plants (2mrks)

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ff) Give four benefits of possessing a land title deed (2mrks)

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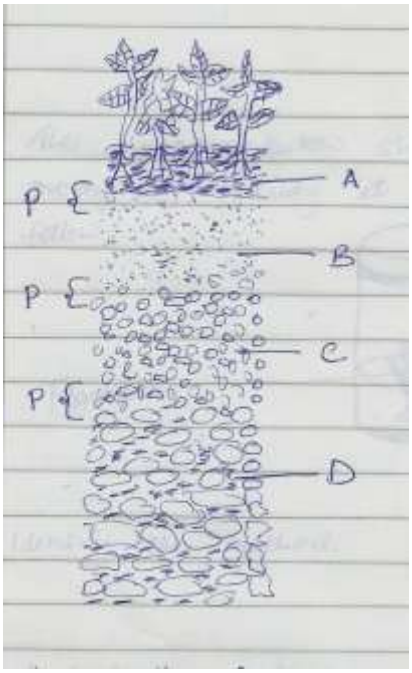
SECTION B (20 MRKS)

Answer all the questions in this section in the spaces provided

gg) The diagram below illustrates a feature observed after digging the soil several metres deep Study the diagram carefully and answer the question that follow



xliv) Identify the feature that the diagram above represents in the study of soil (1mrk)

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xlv) What is the name given to the part labeled p(1mrk)

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xlvi) Give a reason why part b is also reffered to as layer of accumulation (1mrk)

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xlvii) State two ways in which the knowledge of the above feature would be of benefit to farmer (2mrks)

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18The diagram below shows a method of crop propagation .Study it and answer the questions that follow

viii) Identify the method (1mrk)

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b Name two crops that can be propagated using this method.(1mrk)

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c. Give three ingredients used when preparing the tissue culture.(1 ½)

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19.The following information was obtained from the records of Mr Juma's farm for the year ended on 31st march 2011

Particulars	kshs
Opening Valuation	100,000
Calves	72,000
Hired Labour	21,000

Sales of milk	13,000
Sales of cereals	33,000
Rent	9,000
Feed	5,300
Seed	1,700
Fertilizers	4,700
Sales of Vegetables	9,300
Sales of poultry	1,800
Sales of fruits	700
Pesticides	1,250
Depreciation	650
Repair and Maintenance	950
Interest on loans	200
Closing Valuation	9,0000

12. using the information given above , prepare a profit and loss account for Mr Juma's farm for the year ended 31st March (7mrks)

13. Giving a reason, State whether Mr. Juma's farm made a profit or loss (½ mark)

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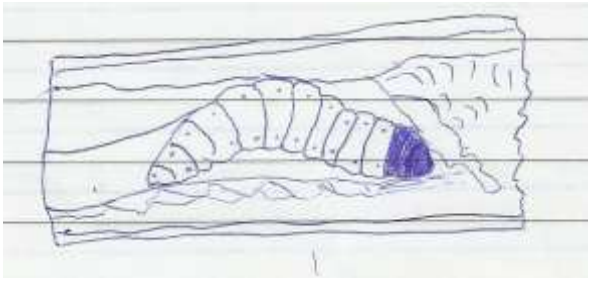
20) The diagram below shows a maize stalk infected by a certain pest .Study it and answer the questions that follow .



f) Indentify the pest (1/2)

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g) Apart from maize, name another crop attacked by the pest named above (½ mark)

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h) Give three cultural measures that can be applied to control the pest (3mrks)

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SECTION C (40MARKS)

Answer any two questions in this section in the spaces provided

21a) Describe six advantages of rotational grazing (6mrks)

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14. Explain eight ways in which soil fertility can be maintained (8mrks)

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i) Explain six factors considered when drawing a farm plan (6mrks)

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22a) Explain the factors that influence the type of irrigation to be used in a farm (8mrks)

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15. Explain six reasons for pruning coffee.(6mrks)

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16. Describe 6 ways in which lab our productivity can be improved on a farm (6mrks)

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23a) Describe five importance of agro -forestry in soil and water conservation (6mrks)

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ix) Describe the procedure of silage making (10mrks)

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x) Describe five effect of over application of nitrogenous fertilizer(5mrks)

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SET 1 HOLIDAY ASSIGNMENT

AGRICULTURE PP2

SECTION A 30MRKS

Answer all the questions in this sections in the spaces provided

1. Name the most appropriate tools used in the following operations

a) Removing metal chippings in file (1mrk)

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b) Cutting wood along grains (1mrk)

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c) Branding (1mrks)

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2. State four characteristic of Boran cattle (2mrks)

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3. State two functions of a useful bacteria in livestock production (1mrk)

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4. Name four function of lipid in an animal body (2mrks)

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5. State two ways of reducing friction in moving part of farm tool (1mrk)

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6. Outline four types of fence that can be used in mixed farm (2mrks)

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7. Name three methods of out breeding in livestock production ((1 ½ marks)

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8. Give two reasons for tailing in sheep production (1mrk)

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9. Name any five internal parts of cow's udder (2 ½ marks)

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10. Give five ways of transmitting livestock diseases (2 ½ marks)

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11. Give four features of improved grain bin (2mrks)

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12. Give three types of calving complications (1 ½ mrks)

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13. State four advantages of zero grazing as a grazing system (2mrks)

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14. State two functions of a queen bee in a colony (1mrk)

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15. Name four symptoms of anaplasmasis in livestock(2mrks

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16 .What do you understand by the following terms as used I animal production .

hh) Coponisation(1mrk)

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.....

b) Bullock (1mrk)

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c. Epistasis(1mrk)

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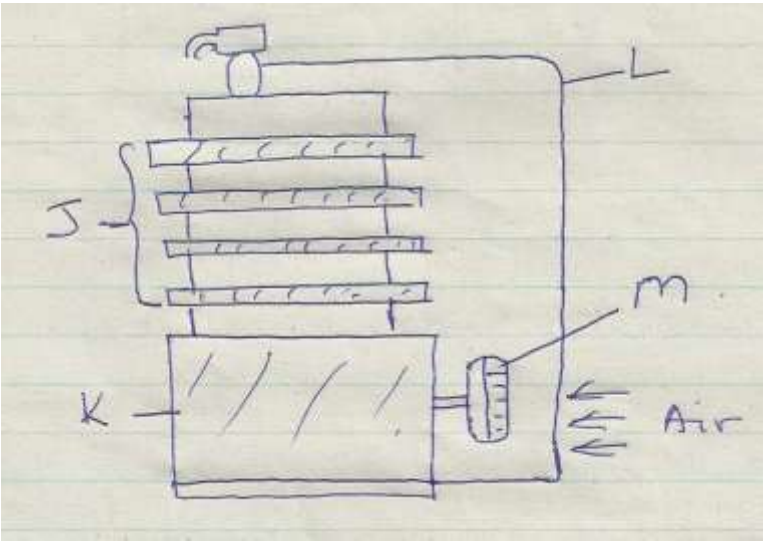
SECTION B (20Mrks)

Answer all the questions in the spaces provided

17. Below is a diagram of a cooling system .Study it and answer the questions that follow



xxv) Identify the type of cooling system illustrated (1mrk

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b . Name parts labelled J, K , L and M (2mrks)

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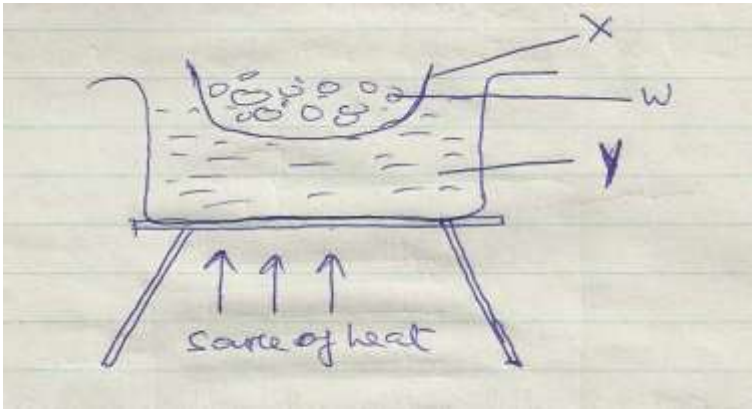
c. Name two problems associated with the type of cooling system illustrated above(2mrks)

(i)

(ii)

18. Below is an illustration of a method of extracting honey from combs .Study the diagram and answer the question that follow .



i) Indentify the above method of extracting honey (1mrk)

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.....

j) Give a reason why container x should not be heated directly (1mrk

.....

.....

k) Name the parts labeled w and y(2mrks)

w

y

l) Besides the above method ,State one other method of extracting honey (1mrk)

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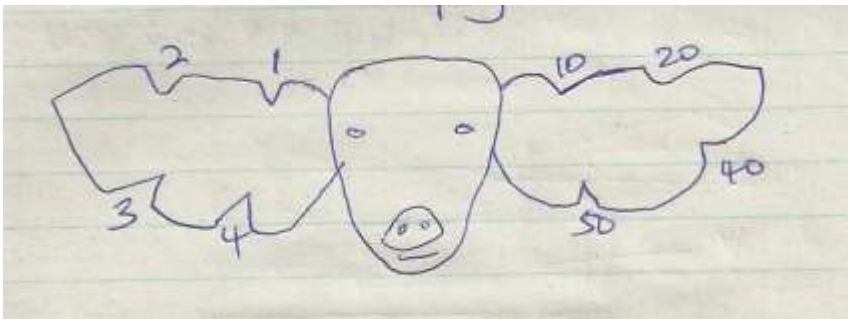
19The diagram below shows a certain practice carried out on pig



xl) Identify the practice illustrated above (1mrk)

.....

.....

xli) Draw another illustration depicting pig number 37(1mrk)

xlii) Name the tool used to carry out the practice illustrated above (1mrk)

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xliii) State two other method of indentifying piglet (2mrks)

i)

ii)

20 .Below an illustration of a farm operation .Study it carefully and answer the question that follow.

xlviii) Identify the activity being carried out (1mrk)

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xlix) Give one other activity carried on the animal before the above operation is carried out (1mrk)

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l) Outline the procedure of carrying out the above operation (3mrks)

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SECTION C

Answer any two questions in the space provided

21. Outline management practice carried out in a fish pond to ensure maximum harvest of fish (7mrlk)

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b) Discuss the importance of farm mechanization (6mrks

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c) Discuss the short term maintenance practices carried out on a tractor (7 marks)

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22. (a) Explain the feature of a piggery unit (10mrks)

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xxvi) Explain the factor that influence the work output of a draught animal(10mrks)

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23. a)Outline various method of controlling ticks(10 mrks)

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ii) Describe the management of growers up to the point of lay (10mrks)

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FOR MARKING SCHEMES