KCSE ACE EXAMINATION SERIES

FORM 4 EXAMS

COMPLETE FORM 4 EXAMS AND ANSWERS

NAME:.....INDEX NO:.....

SCHOOL:.....CANDIDATES SIGNATURE:.....

DATE:.....

101/1
ENGLISH.
PAPER 1.
(Functional skills)
TIME: 2 HOURS

Kenya certificate of secondary education (K.C.S.E)

101/1
ENGLISH.
PAPER 1.
(Functional skills)
TIME: 2 HOURS

Instructions to candidates.

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

For Examiner's Use Only

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

This paper consists of 8 printed pages
Candidates should check to ascertain that each page is printed as indicated and that no question is missing

1. You have been invited by your friend to a party celebrating his/her outstanding performance in the KCSE of 2013 where he/she scored an aggregate mean of A (plain). Your friend has requested you to assist in the designing of an invitation card.

(a) Design an invitation card that your friend will use to invite guests. (10mks)

(b) Write a congratulatory note that you will give your friend during the cerebration applauding him/her for unrelenting determination and appreciate that your friend is a role model to you and the youths in your community (10mks)

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2. CLOZE TEST (10marks)

Civil Society and especially non-governmental organization (NGOs) play a..... (1) role in our Social-political..... (2).

During the historic agitation..... (3) the one-party state in the 1 990s, NGOs and civil society were at the .....(4) of the struggle. Some paid the highest.....(5) — death - for the freedom we..... (6).

Today, their..... (7) is similarly crucial. We need members of the civil society to agitate, audit..... (8) interrogate the excesses of government.

During the nineties, a lot of financial support..... (9) given to members of the civil Society. Donors were,.....(10) from well known and respected foundations, UN bodies and contributions were above board.

Q3 . (a) Construct two sentences per word listed to bring out two different meanings. (5 marks)

(i) dear

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(ii) woods

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(iii) race

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(iv) saw

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(v) buffet

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3. (b) Read the poem below and answer the questions that follow. (8 marks)

The broom seller

He peddles his bicycle down the street
Dust on his face, dust on his feet,
Broom! Broom!
Look at him ride!
His feet stick out on either side
Broom! Broom! See him go.
Riding fast or riding slow.
His cap is yellow and green and red.
The brooms are balanced on his head.
I really think if you or I.
Tried that trick, we would fail!
But there he goes, head held high
Walking the streets with his clear long call.
Buy my brooms.
To sweep your rooms
Br00000000M!

Questions

i) Comment on the rhyme scheme of the above poem. (2 marks)

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ii) Identify TWO aspects in the poem that enhance musicality. (2 marks)

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iii) What is the role played by the exclamation marks in the poem? (2 marks)

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iv) Why do you think the last word in the poem is written that way? (2 marks)

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3. (c) Read the oral narrative below then answer questions that follow.

THE COCK AND THE KITE

(The setting of the story is in Kibiro, Uganda in the Western Rjft Valley near Lake Albert.)

A long time ago, there lived Cock and his family as well as Kite and his family. The former was hardworking while the latter was lazy. It then happened that the place was hit by a famine. People from far used to travel a long way to go to Kibiro to barter food for salt. It also happened that both families ran short of salt.

Cock's wife informed her husband that they had run short of salt and asked him to take some finger millet to Kibiro. He agreed, went to Kibiro, obtained salt and set upon the return journey.

The other family got wind of this. Mrs. Kite also asked her husband to go to Kibiro and try to get salt since the lazy family did not have anything to take. Kite set off to Kibiro. On the way, he met cock resting on his way home with the salt beside him. He was standing on one leg having hidden one of his leg in his wing, as cocks do many times when resting. Kite asked Cock how he had managed to get the salt, whereupon Cock told Kite that the salt miners had cut off one of his legs in exchange for the salt. Kite accepted the lie and proceeded towards Kibiro ready to do the same. Cock continued on his journey and got home safely.

On arrival at Kibiro, Kite offered his leg for a bundle of salt which the miners readily accepted. His leg was consequently amputated rendering him immobile, even unable to carry home the salt. Poor Kite flew back home, where he was received by his family in much grief, especially when he narrated to them the ordeal he went through. Later Kite's family was to receive the traumatizing news that Cock had actually ill-advised Kite, leading to loss of his leg.

Henceforward, great enmity ensued between the two families with Kite's family swearing to retaliate by hunting Cock's family down and eat them. This goes on to date.

Questions:

(i) What would you do in order to capture the audience's attention before you begin to tell this story? (2 marks)

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(ii) Explain how you would make the narration of the first two paragraphs effective.(2 marks)

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(iii) Mention two ways in which you would know that your audience in this story is fully participating in the performance. (4 marks)

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(iv) Mention TWO problems encountered during the collection of this oral literature material. (2 marks)

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3. (d) Read the following conversation and answer the questions that follow. (7 marks)

Mbaire meets her former teacher, Mr. Katana, at a street in Nairobi.

Mbaire: Hi Mr. Katana, long time no see.

Mr. Katana: Hello Mbaire, how have you been for so long

Mbaire: I'm fit as you can see.

Mr. Katana: What a surprise to see you here! Do you live around this area?

Mbaire: Zi, just popped in to have a glimpse of some associates of mine. And you?

Mr. Katana: Well, I came to visit a colleague who has been ailing for some time. You remember Mr. Kwach.

Mbaire: Yes, the leopard! Who can forget him? He used.....
.....

Mr. Katana: Well, I must be going. Goodbye

Mbaire: See you.

Questions

(i) Identify one shortcoming in Mbaire's responses. (2 marks)

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(ii) Give three aspects of speech that Mbaire needs to consider so as to communicate effectively and in an appropriate manner. (3 marks)

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(iii) Give two possible reasons for Mr. Katana's exit before Mbaire finishes speaking.(2 marks)

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NAME:.....INDEX NO:.....

SCHOOL:.....CANDIDATES SIGNATURE:.....

DATE:.....

101/2
ENGLISH.
PAPER 2.
TIME: 2 HOURS

Kenya certificate of secondary education (K.C.S.E)

101/2
ENGLISH.
PAPER 2.
TIME: 2 HOURS

Instructions to candidates.

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

This paper consists of 10 printed pages
Candidates should check to ascertain that each page is printed as indicated and that no question is missing

ENGLISH EXAM

Question One

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

Life can be stressful. We all face different challenges and obstacles, and sometimes the pressure is hard to handle. When we feel overwhelmed, under the gun, or unsure of how to meet the demands placed on us, we experience stress. In small doses, stress can be a good thing. It can give you the push you need, motivating you to do your best and to stay focused and alert. But when the going gets too tough and life's demands exceed your ability to cope, stress becomes a threat to both your physical and emotional well-being.

Stress is a psychological and physiological response to events that upset our personal balance in some way. These demands are known as stressors. We usually think of stressors as being negative, such as an exhausting work schedule or a rocky relationship. However, anything that forces us to adjust can be a stressor. This includes positive events such as getting married or receiving a promotion. Regardless of whether an event is good or bad, if the changes it brings strain our coping skills and adaptive resources, the end result is the subjective feeling of stress and the body's biological stress response.

The potential causes of stress are numerous. Your stress may be linked to outside factors such as the state of the world, the environment in which you live or work, or your family. Your stress can also come from your own irresponsible behavior, negative attitudes and feelings, or unrealistic expectations.

The stress response of the body is meant to protect and support us. When faced with a threat, whether it be to our physical safety or emotional equilibrium the body's defenses kick into high gear in a process known as 'fight or flight' response. The sympathetic nervous system pumps out adrenaline, preparing us for emergency action. Our heart rate increases and blood flow to the large muscles increase, the blood vessels under the skin constrict to prevent blood loss in case of injury, the pupils dilate so we can see better, and our blood sugar ramps up, giving us an energy boost.

Questions

a) What is stress? (2mks)

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b) How is stress important-in our life? (2mks)

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c) Name two types of stressors giving an example of each? (2mks)

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d) Identify the two potential causes of stress and give an example of each? (2mks)

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e) In about 60 words, summarize on how our bodies respond to stress through the fight or flight. (5mks)

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f) (i) Regardless of whether ad event is good or bad,.. .the end result is the subjective feeling of stress. (Rewrite the sentence replacing the underlined word with another word with a similar meaning). (3mks)

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(ii) Add a question tag to the following statement. (1 mk)

The sympathetic nervous system pumps out adrenaline.

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g) Give the meaning of the following words as used in the passage? (4mks)

i) Stressors

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ii) Equilibrium

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iii) Overwhelmed

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iv) Subjective feeling

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h) Change the following statement into active voice. (1 mk)

Question Two

Except for Kithinji Makau who seemed to have trouble handling the cadaver, the other five soon formed a good team. One person would read from the manual, another would dissect and separate the tissues and the rest would try to identify the revealed structures. Anatomy was the science which family grounded the image of the human body into a doctor's head; ... it was the cornerstone of medicine in reality it was just a test of one's power of recall-an invaluable tool for a doctor. To carry in one's head the names, distribution and function of hundreds of muscles, nerves, blood vessels, parts of the brain, the skeleton, and all the internal organs require a no mean feat of memorization. However, it soon became clear that two people were fighting for the top position in anatomy. They were both from table six-Aero Sigu and that slip of a girl Wandia

Mugo.

There were other subjects to be learned including Biochemistry and physiology, but none caused as much tension and rivalry as anatomy. If you saw a medic mumbling to himself, it was not because he was at prayer, the poor guy was practicing his anatomy. By the end the third and last semester, the battle for

supremacy in anatomy became palpable. People slept with their Cunningham's Manual and their Gray's Text Book of Anatomy. Where two or three were gathering together, anatomy was the main subject. Finally the day came. The written papers were done and the day for practicals came. You could have cut the tension with a knife after everyone took his place in front of some displayed bit of human tissue or a slide under a microscope. Each time the bell rang one had to move to the next item, irrespective of whether one had managed to identify the previous one or not. The time was fixed.

Questions

a) Place this excerpt in its immediate context. (3mks)

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b) Name the other three members of the team not mentioned in this passage and briefly describe their first reaction at the dissecting table. (3mks)

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c) Compare Aoro Sigu and Wandia Mugo in this passage. (2mks)

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d) Identify one thematic concern highlighted in this excerpt. (2mks)

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e) Each time the bell rang one had to move to the next item, irrespective of whether one had managed to identify the previous one or not. (Begin: Irrespective end rang). (lmk)

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f) Make notes on the author's description of anatomy. (3mks)

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g) Explain an incident in the past that explains Aoro's passion for medicine. (3mks)

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h) Describe the mood of the third and last semester as brought out in the excerpt. (3mks)

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i) 'Where two or three were gathered together...' comment on the stylistic device employed here. (2mks)

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j) How does the battle for supremacy in anatomy end? (2mks)

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k) Explain the meaning of 'palpable' in context. (lmk)

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Question Three

Read the oral narrative below and answer the questions that follow (20mks)

A long time ago, there was a paramount chief who married a woman. After sometime, Murungu blessed them with an only charming daughter. They did not have any sons. The baby girl, Muthaka, grew up to be a beauty queen. However a strange eye disease struck her which no local medicine man or woman would cure successfully.

The parents were devastated and consulted several with doctors and medicine men and women to no avail. Luckily the chief succeeded to consult an old frail medicine woman from a neighboring community who prescribed a rare herbal creeping found on the tallest branch of a Mugumo tree.

The great chief sent word around that whoever wanted to have his beautiful daughter's hand in marriage had to prove his prowess by picking the leaves of the rare plant without climbing the sacred tree. Whoever could cure her eyes would get a wife without paying any dowry.

Princes and chiefs tried their luck without success. Hunters and herdsmen too tried but failed miserably. All the suitors were captivated by Muthaka's dazzling beauty and walked home dejectedly.

Then a common leper stinking with leprosy and commonness from a neighboring village got a wind of the chief's proposal and decided to try his luck too. He was equally captivated by Muthaka's unequalled beauty and swore to be the lucky one. Though disappointed, the chief could not back on his words, and he let the leper go ahead.

By now Muthaka was tucked away in her bedroom drenched in tears and hoping against hope that the leper would fail. Meanwhile the clever leper devised a way of bringing down the leaves. He went deep into the forest and cut down fine bamboo trees and tied firmly together. Finally he emerged from the forest and went straight to the Mugumo tree. As foolish as it appeared, the leper planted the bamboo tree beside the Mugumo tree and began to climb it. People laughed at him and jeered at his supposed stupidity. As he hoisted himself up, he sang.

Muthaka my unequalled beauty
This I do it for you
How I wish I were the moon up the skies
For them I would see your full beauty as you bathed
Muthaka, my beloved beauty

How I envy the hides on your bed
For they know how warm your embrace is
Your tattoos matches none other

And as he climbed higher and higher, Muthaka heart sunk with sadness. The leper continued singing

Muthaka my queen,
This I do it for you
Your neck is like the crested crane's
When I see it atop this bamboo stick
I die

By now he had reached the leaves and sang excitedly

Muthaka my beloved,
Your teeth whiter than milk
Your gums dark like soot
Kill me
I desire to kiss you
And embrace you
For you are now mine.

Finally the leper brought down the leaves, Muthaka deeply contemplated running away and defying her father's command. Her eyes had deteriorated and were oozing blood and worms were crawling out. The father was tom between saving the daughter's eyes and giving her out to the common leper. Here ends the story.

Questions

a) What type of narrative is this? Give a reason for your answer. (2mks)

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b) Give two features of the above narrative. (2mks)

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c) State two reasons why people tell stories. (2mks)

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d) Give two functions of song in this narrative. (2mks)

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e) Identify and illustrate one character trait of the leper. (2mks)

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f) Identify and briefly explain one theme addressed in the above narrative. (2mks)

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g) What do you learn about the socio-economic activities of the community from which the narrative is taken? (2mks)

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h) Who is the appropriate audience for this narrative? (1 mk)

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i) From the fifth paragraph, what do we learn about the chiers attitude towards the leper? (3mks)

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j) Give a proverb that summarizes the moral lesson that we learn from the above narrative. (2mks)

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Question Four

GRAMMAR .

a) Use the correct form of the verb in brackets in each of the following sentences. (2mks)

i) The burden was.....by the society (bear).

ii) They shouldn't have..... stories at the building (sling).

b) Change the words underlined into their negative forms. (2rnks)

i) The guest speaker in the forum was a noble person.

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ii) She said that my argument was very prudent.

.....

c) Replace each of the following underlined phrasal verbs with a single word that means the same. (2mks)

i) I cannot make out what they are saying.

.....

ii) They said that they would bring up the issue again.

.....

d) Rewrite each of the following sentences as instructed. Do not change the meaning. (3mks)

i) It began to drizzle as soon as we started our exams. (Rewrite beginning: Hardly.....)

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ii) 'Why do you always come late to work?' The boss asked, "This is no longer acceptable!" (Rewrite in indirect speech).

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iii) What the Principal bought was a set of class readers. (Rewrite to end with "bought".

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e) Fill in the blank spaces below with a word derived from the one in the brackets. (2mks)

i) The head prefect had only five minutes to make her speech but she took .....(necessary).

ii) The .....of the case in the court shocked the plaintiffs (integrate).

f) Rewrite the sentences below as to remove gender sensitive nouns. (2mks)

i) The headmistress advised her girls to keep off drugs.

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ii) The father left his sons and daughters a big estate.

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g) Fill in the blank spaces below with the most appropriate preposition. (2rnks)

i. Our school mission, vision and motto are in line..... the government policy.

ii. They had a super goalkeeper they could depend.....

NAME:.....INDEX NO:.....

SCHOOL:.....CANDIDATES SIGNATURE:.....

DATE:.....

101/3
ENGLISH.
PAPER 3.
(Creative composition and essay based on set texts)
TIME: 2 ½ HOURS

Kenya certificate of secondary education (K.C.S.E)

101/3
ENGLISH.
PAPER 3.
(Creative composition and essay based on set texts)
TIME: 2 ½ HOURS

Instructions to candidates.

a) Answer three questions only.
b) Questions one and two are compulsory.
c) In question three choose any one optional text, only the first one to appear will be marked.
d) Where a candidate presents more than one optional texts, only the first one to appear will be marked.
e) Each of your essays must not exceed 450 words.
f) All answers should be written in the answer sheets provided.
g) This paper consists of 2 printed pages

This paper consists of 2 printed pages
Candidates should check to ascertain that each page is printed as indicated and that no question is missing

Answer <u>three</u> questions only

1. Imaginative composition (compulsory)

Either.

a) Write a story to illustrate the following saying
"Do not count your chicks before they hatch."

b) Write a story beginning:
Immediately I picked my recently acquired mobile phone , I found a text message and on reading it, I thought my eyes were playing tricks on me.....

2. The compulsory set text. (20mks)
Bertolt Brecht, The occasion chalk circle
"A mother is born. She is never made merely by conceiving ,carrying a pregnancy and being delivered of a body" close referring to <u>the Caucasian chalk circle</u>, show how far true this statement is.

3. The optional set texts. (20mks)
Answer any one of the following questions:

Either

a) The short story
Ilieva and Olembo(Ed.) when the sun goes down and other stories
"A person is only a person through other persons." Write an essay to illustrate this statement using illustrations from the story 'when the sun goes down' by Goro wa Kamau

OR

b) Drama.
Francis Imbunga, Betrayal in the city.
Using examples from betrayal in the city by Francis Imbunga, write a composition to show how hypocrisy is a vice in the society.

OR

c) The novel.
Witi Ihimaera, the whale rider.
"The youth living away from their parents encounter challenges" write an essay citing such challenges and suggesting solutions for them.

NAME:……..INDEX NO:……

SCHOOL:……..CANDIDATE SIGN:…...……

DATE...……

501/1
FRENCH
PAPER 1.
TIME: 1 ½ Hours

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

501/1
FRENCH
PAPER 1.
TIME: 1 ½ Hours

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided above.
2. Sign and write the date of examination in the spaces provided above
3. This paper has three sections
4. Answer all the questions in the spaces provided.

This paper consist of 8 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

SECTION 1

Listening Comprehension (15 marks)

Write answers to Questions 1—6 in the spaces provided.

1. (a) Ii s'agit d'une emission de télévision pour des (½ mark)

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(b) On pane de combien d'émissions? (½ mark)

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……..

(c) A quelle heure peuton suivre l'émissior. de a condition feminine? (½ mark)

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(d) Michel Kamara est connu pour ses (½ mark)

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2. (a) Dans cette annonce on parle de la compittion de ……(½ mark) qui est ouvert

(b) Qu'est-ce qu'on doit donner avant le 30 novembre? (½ mark)

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(c) Pour avoir plus d'informations, il faut aller á

…… (½ mks)

3. (a) Où est-ce qu'on fait cette annonce?

……. (½ mark)

(b) Elle s'adresse aux…….. (½ mark)

(c) Selon l'annonce, on recevra…….. (½ mark)

pour avoir dépensé ……(½ mark)……euros (½ mark)

4 (a) Qu'est-ce que Mathilde fete?

…… (½ mark)

(b) Combien de personnes y aura-t-il pour sa fête?

…….. (½ mark)

(C) Que faisait .Nathalie quand Mathilde a appelé?

…….. (½ mark)

(d) Nathalie n'a pas Pu rejoindre Mathilde au téléphone parce que Ia ligne

…….. (½ mark)

(e) Donnez 2 détails sur le cousin de Nathalie

(i)…… (½ mark)

(ii)…….. (½ mark)

5 (a) Où se trouve Francine?
…… (½ mark)

(b) (i) Quel moyen de transport utilisera-t-elle?..... (½ mark)

(ii) Avec qui?..... (½ mark)

(c) A queue heure arrive-t-elle?
…… (½ mark)

6 (a) Où se passe la visite?
…… (½ mark)

(b) Le/la guide s'appelle
……. (½ mark)

(c) Il y a …….. étages dans Ia nouvelle section. (½ mark)

(d) (i) Le café se trouve an étage……. (½ mark)

(ii) On peut y aller par …… (½ mark)

(e) (i) On peut acheter……..au magasin du musée. (½ mark)
(ii) Ce magasin est …… la sortie. (½ mark)

SECTION II

Dictation (5 marks)

Write the Dictation Passage in the spaces provided.

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SECTION III

Composition (25 marks)

Write your two compositions in the spaces providea. Indicate clearly whether your choice is la, lb. 2a or

1. 2b. In **120—150** words, write in French on:

Either

(a) Ecrivez un CV pour envoyer a une organisation qui cherche un(e) guide touristique. (10 mrks)

Or

(b) Votre ami(e) francais(e) aime beaucoup k the kenyan. Faites-lui une recette pour preparer le the, (10 mrks)

2. In **150—180** *words, write in French, a composition on:*

Either

(a) Mereredi dernier, vous vous êtes révei11C.) tard. Racontez ce qui s'est passé. (15 mrks)

Or

(b) 11 faisait nuit. Tout le monde dormait. So,idain, vous avez entenclu des bruits bizarres. Racontez Ia suite. . (15 mrks)

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NAME:……..INDEX NO:……

SCHOOL:……..CANDIDATE SIGN:…...……

DATE...……

501/2
FRENCH
PAPER 2.
(Reading comprehension and Grammar)
TIME: 1 ½ Hours

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

501/2
FRENCH
PAPER 2.
(Reading comprehension and Grammar)
TIME: 1 ½ Hours

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided above.
2. Sign and write the date of examination in the spaces provided above
3. This paper has two sections
4. Answer all the questions in the spaces provided.

FOR EXAMINER'S USE ONLY

Section	Maximum score	Candidates Score
I	15	
II	15	
Total score		

This paper consist of 6 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

SECTION I

Reading comprehension (15marks)

Read the following passage and answer the questions that follow.

PASSAGE 1.

On passait par un tout petrit village au bord de la route. Des petis gosses couraient ici et lá, chasant les poules et les canards partout. Les homes coupaient quelques feuilles de palmier pour fortifier les toits; les femmes pilaient du mil derriére les cases et d'autre cultivaient la terre dans les environs, avec des bébés endormis portés sur le dos.

Voilá comment dans quelques minutes, la visiteuse de kikambala avait jeté un coup d'oeil dans cette direction. Pluis, á son arrive á kilifi ce soir-lá, elle rêvait déjá de ce village bien organise, de trés-belles filles,des garcons courageux, du grand chef du village, fort et sage…dans c village à la meme heure ce soir, tout n'allait pas bien. Il n'y avait pas assez à manager pour les petits gosses fatigues. Les femmes étaient épuis ées. Les homes entouraient une calebasse d'alcool et buvaient ce liquide avec beaucoup d'enthousiame ; leur facon de se cacher de la réalité pénible de pauvreté et ignorance. Le plus vieux d'eux. Le grand pé re, n'en buvait pas. Ce 'chef' du villag pensait aux moyens d'amélorer leur situation économique.

1. Citez une activité des femmes . (lmk)

   …….

2. Où va Ia visiteuse? (lmk)

   …….

3. Pourquoi est-ce que les hommes buvaient? (1 mk)

   …….

4. De quoi s' inquite Ie chef du village? (lmk)

   …….

5. Trouvez dans le texte un mot pour: (1 ½ mks)

   i) enfants…….

   ii) fatigues……

   iii) style……

6. Trouvez dans le texte L'antonyme de I'adjectif 'faible'…….. (½ mk)

PASSAGE II

J'en ai assez d'entendre les lycéens francais se plaindre. J'ai 15 ans, j'habite en Afrique depuis 11ans. Je connais done la situation de L'éducation des jeunes dans le tiers monde.

Le probléme commence par le manqué d'école, chéres pour beaucoup. Alors les jeunes n'y vont pas ou peu. Les familles sont trop pauvres pour payer I'école à leurs, 4,8 de polio, de sida. Alors,quand je vois le systéme francais, avec I'école gratitude et des professeurs diplômés, je voudrais dire aux jeunnes lycéens 'Vous avez de la chance!'

7. Donnez deux différences entre I'éducation en Afrique et en France. (2mks)

a)…….

b)……..

8. Pourquoi lauteur pense —t-il que les lycéens franc ais ont de Ia chance? (1mk)

PASSAGE III

Chère Tontine,

J'aime une fille qui a un an de moins que moi mais nous avons le même anniversaire du 12 décembre. Mol, j'ai commencé études universitaires cette année alors que, elle passe son examen du sécondaire vers Ia fin de I'année, juste avant son I 8ème anniversaire. Nous sortions ensemble pendant les vacances, mais depuis les vacances de Pâques, ses parents ne veulent plus que nous fréquentions. Pendant tout le mois d'août je Iui ai téléphoné et écrit mais pas de reponse. Je suis même allé chez elle. La bonne m'a laissé entrer dans Ia maison mais mon amour n'a pas voulu me voir.

Cette fille m'aimait beaucoup et je sais qu'elle m'aime encore. Moi, je suis vraiment misérable car je l'aime plus que tout au monde. Que dois-je faire?

9. i) Quel âge a l'auteur de ce courrier? (½ mk)

……

ii) Que fait-il dans la vie? (½ mk)

……

10. On ne se volt plus. Pourquoi? (lmk)

……

11. a) A quoi n'a-t-on pas répound? (1mk)

……

b) Qul n'a pas tèpondu ? (½ mk)

……

c) Qul est malheureux? (1mk)

……

PASSAGE IV

Georges,

Tu rentres trop tard à Ia maison ! Ce

Soir, je dîne au restaurant avec un étranger.

On est au 'Bistrot du Coin'

Tu viens!

A tout à L'heure!

Béatr ice.

12. Qui est le destinatajre de ce message? (½ mk)

……

13. Où se trouve Béatrice maintenant? (1 mk)

……

Match the sentences in column "A" with the appropriate endings from "B" (3mks)

COLUMN A	COLUMN B
a) Depuis quand me churches-tu?	1. Une dizaine.
b) Qui a ordonné sa retraite?	2. A cheval.
c) Quel âge avait-elle?	3. Oui, tout de suite.
d) Combien de billets voudriez-vous?	4. Dix ans
e) Comment viendront-ils?	5. Les spectateurs.
f) Qui vient nous voir?	6. Euh, dix jours.
	7. A dix heures.
	8. Le chef du personnel.

ANSWER:

Column A	a	b	c	d	e	f
Column B						

SECTION II
Grammar (15 marks)

14. Beginning as indicated, complete the answers to the following appropriately. Make changes where necessary and avoid unnecessary repetition (7mks)

Example: Tu connais cette femme?
Oui, …….
Oui, je la connais.

a) Tu connais quelqu'un dans cet endroit? (lmk)
Non…….

b) D'abord, elle se douche, puis elle prend son diner (lmk)
Avant……

c) J'ai vu ces belles photos (lmk)
Ce sent les……..

d) - Quand Louis a vu L'embouteillage, ii est prti à pied (1 mk)
- C'est Vrai?
- Oui, en……

e) Keya n'est pas intelligent Pierre non plus (lmk)
Ni……..

1) Hier, nous avons lu ce livre interessant (1 mk)
Maintenant…….

g) - Ces stylos sent à toi?
- Oui, ils sent les…… (½ mk)

h) Est-ce que toute Ia classe a répendu a Ia question?
Oui, chaque élève (½ rnk)

15. Fill in the blanks with ONE word only for each to cmpIete the text below appropriately.

Je (i)……. lève le matin (ii)…….. bonne heure. Comme d'ordinaire, avant (iii)……. faire Ia toilette,je prends (iv)…… Petit déjeuner avec les enfants. On commence avec (v)……. prière, puis tout (vi)……. mangeant on (vii)……... raconte nos rêves et on parle de lajounée devant nous. Un quart d'heure plus tard, tout le (viii)…… commence (ix)…….. se préparet et dans dix minutes on part (x)……. se retrouver le soir.

(5mks)

NAME:……..INDEX NO:……

SCHOOL:……..CANDIDATE SIGN:…...……

DATE...……

501/3
FRENCH
PAPER.3.
TIME:

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

501/3
FRENCH
PAPER.3.
TIME:

This paper consist of 3 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

CARD B
EXPOSÉ
Mon métier favori

Instructions to candidates:
1. You will talk on the topic given overleaf
2. You will have **ten** minutes to prepare for the task.
3. You will have **two** minutes to talk on the topic

1. You will talk on the topic given overleaf
2. You will have **ten** minutes to prepare for the task.
3. You will have **two** minutes to talk on the topic.

CARD D
EXPOSÉ
Vous avez decide de fonder un club de français dans votre lycée. Expliquez á votre directeur l'importance de ce club.

CARD C
EXPQSE
"On apprend le francais surtout pour développer e tourisme." Donnez votre opinion sur le sujet
Instructions to candidates:
1. You will talk on the topic given overleaf
2. You will have **ten** minutes to prepare for the task.
3. You will have **two** minutes to tr11r on the topic.

CARD B
EXPOSÉ
Mon métier favori

Instructions to candidates:
1. You will talk on the topic given overleaf
2. You will have **ten** minutes to prepare for the task.
3. You will have **two** minutes to talk on the topic

CARD A
EXPOSÉ
Lejour le plus heureux de ma vie

Instructions to candidates:
1. You will talk on the topic given overleaf
2. You will have ten minutes to prepare for the task.
3. You will have two minutes to talk on the topic.

Quel tintammare ! Et il y a beaucoup trop d' elèves ici

CARD A
EXPOSÉ
Le jour le plus heureux de ma vie

Instructions to candidates
1. You will talk on the topic given overleaf
2. You will have **ten** minutes to prepare for the task.
3. You will have **two** minutes to talk on the topic.

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

312/1
GEOGRAPHY
PAPER 1
TIME 2HRS
TIME 2 ¾ HOURS

INSTRUCTION TO CANDIDATES

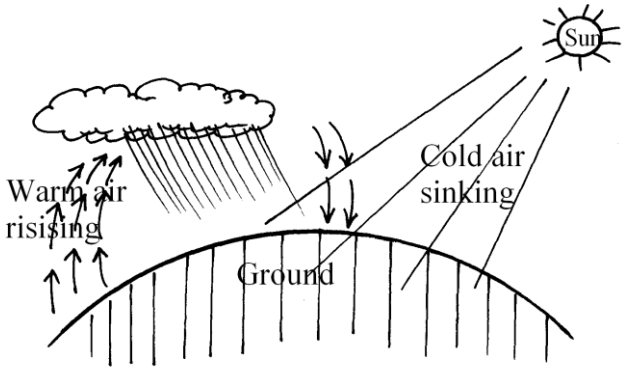
(a) This paper has two sections **A** and **B**
(b) Answer all questions in section **A**
© Answer questions **6** and any other questions from section **B**
(d) All answers must be written in the answer booklet provided.
(e) Candidates should check the paper o ascertain that all the pages are printed as indicated and that no questions are missing.

This paper consists of 4 printed pages, students to confirm the same and ensure there no questions missing

SECTION A

Answer all questions in this section

1. (a) List the disadvantages which are related with the following areas of study of geography.
   (i) Geomorphology (1mk)
   (ii) Biogeography. (1mk)
   (b) List **three** main areas of study of physical /geography (3mks)
2. (a) List any t**wo** main areas which make up the external art of the earth.
   (b) List any **three** discontinuities which are found in the atmosphere (3mks)
3. (a) What is plate tectonics theory? (2mks)
   (b) Name **three** main boundaries which develop due to the movement of plate tectonic(3mks)
4. (a) Define the following terms of the hydrological cycle
   (i) Precipitation (1mk)
   (ii) Evaporation (1mk)
   (b) List any three factors that influence the rate of evaporation from the earth's surface(3mks)
5. The diagram below show the formation of some type of rainfall .Use it to answer question(a) and (b)



   (a) (i) Name the type of rainfall shown by this diagram (1mk)
   (ii) Name the type of cloud marked (a) (1mk)
   (b) List three weather conditions associated with the above name (a) type of rainfall.(3mks)

SECTION B

Answer question 6 and any other two questions from this section

6. Study the map of Karatina 1: 50,000(Sheet 121/3)
   Provided to answer questions that follow.
   (a) (i) Identify the feature found in grid reference 967543 (1mk)
   (ii) What is the distance of River Sagana found to the South Western area of the area covered by the map from the bridge in grid square 8347 to the Southern edge of the area covered by the map (Give your answer in Kilometres)

(iii) List any **two** methods that have been used to represent the relief of the area covered by the map (2mks)

(b) (i) Calculate the area covered by the part of Mt. Keya forest East of easting 99 and south of Northing 55(Give your answer in square Kilometres) (3mks)

(ii) Name **two** district found in the area covered by the map (1mk)

(c) (i) Using a vertical scale of 1cm rep 50m draw a cross section from grid reference 810500 to 870500 (5mks)

(ii) On the cross section drawn mark and name

-All weather roads (loose surface) (1mk)

-River Rithithi (1mk)

-Power line (1mk)

(iii) Calculate vertical exaggeration (VE) for the cross section drawn (2mks)

(d) Describe drainage in the area covered by the map (6mks)

7. (a) (i) Define the term faulting (2mks)

(ii) Describe how a normal fault is formed (2mks)

(b) (i) With the aid of well –labelled diagrams explain how a rift valley is formed by tensional forces. (8mks)

(ii) A part from the Rift valley name any other three features formed by faulting(3mks)

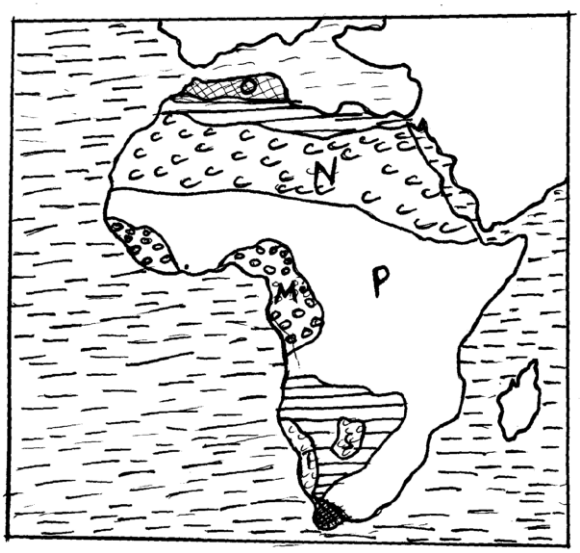
(c) Mention any **five** effects of the process of faulting to human environment (5mks)

(d) Students from Itiero Girls High School intend to carry out a field study of a fault block near their school.

(i) List any **three** objectives for their study (3mks)

(ii) List any **two** secondary sources of information that they would use to collect data (2mks)

8.



(a) (i) Name the types of climates marked M,O and P (3mks)

(ii) Name the desert marked T and S (2mks)

(b) Describe the characteristics of the climate marked N (6mks)

(c) (i) Explain any **four** natural factors influencing aridity and desertification. (8mks)

(d) Explain any **six** effects of desert features on the human environment. (6mks)

9. (a) (i) Define the term sea. (2mks)

(ii) List any **three** features which occur in the oceans (3mks)

(b) (i) Define the term waves (2mks)

(ii) Differentiate the term swash from backwash (2mks)

(c) (i) Explain any **three** processes of wave erosion (6mks)

(ii) Explain how a tombob is formed (4mks)

(iii) Give **three** conditions necessary force formation of coral reefs (3mks)

(d) List any **three** features which develop on submerged highland coasts. (3mks)

10. (a) (i) List any t**hre**e sources of underground water (3mks)

(ii) Differentiate pervious rocks from porous rocks (2mks)

(b) Explain **four** factors that influence the occurrence of underground water. (8mks)

(c) (i) Mention any **three** factors necessary for the formation of karst features. (3mks)

(ii) List any **three** underground features of karst areas (3mks)

(d) Explain any **three** significance as of karst features to man. (6mks)

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

312/2
GEOGRAPHY
PAPER 2
TIME 2 ¾ HOURS

INSTRUCTION TO CANDIDATES

(a) This paper has two sections **A** and **B**
(b) Answer all question in section **A**
(c) In section B answer question 6 and any other two questions
(d) All answers must be in the answer sheets provided.

This paper consist of 4 printed pages , students to confirm this and ensure all the questions printed as indicated

SECTION A

Answer all the questions in this section

1. (a) Define the term industrial inertia (2mks)

   (b) State three characteristics of cottage industry (3mks)

2. (a) Briefly describe how mineral occur in veins and lodes (2mks)

   (b) State three problems of land dereliction (3mks)

3. (a) State three physical conditions that favour large scale sugarcane growing in Kenya (3mks)

   (b) Name two areas where sugarcane is grown in large scale in Kenya. (2mks)

4. (a) Define the term transhumance (2mks)

   (b) State three characteristics of nomadic pastoralism (2mks)

5. (a) State three reasons why common market for Eastern and Southern (COMESA) was formed (3mks)

   (b) State two factors that limits trade among the countries of Eastern Africa. (2mks)

SECTION B

Answer question 6 and any other two from this section.

6. Use the table below to answer the following questions

   Visitors arrival in Kenya between 1998 and 2002(in 1000)

   Number of visitors

Year	1998	1999	2000	2001	2002
Purpose					
Holiday	686.9	746.9	778.2	728.8	732.6
Business	86.8	94.4	98.3	92.1	86.6
Transit	101.9	107.4	138.5	152.6	163.3
Others	18.7	20.6	21.1	20.1	19.0
Total	**894.3**	**969.3**	**1036.1**	**993.6**	**1001.5**

   (a) (i) Draw a compound bar graph to represent the above data (6mks)

   Use vertical scale of 1cm represents 100,000 visitors

   (ii) State two disadvantages of compound bar graph (2mks)

   (iii) Draw two conclusions from the compound bar graph you have drawn. (2mks)

   (b) (i) State three human factors which influence tourism in Kenya (3mks)

   (ii) Give two main tourist attraction at the Kenya coast (2mks)

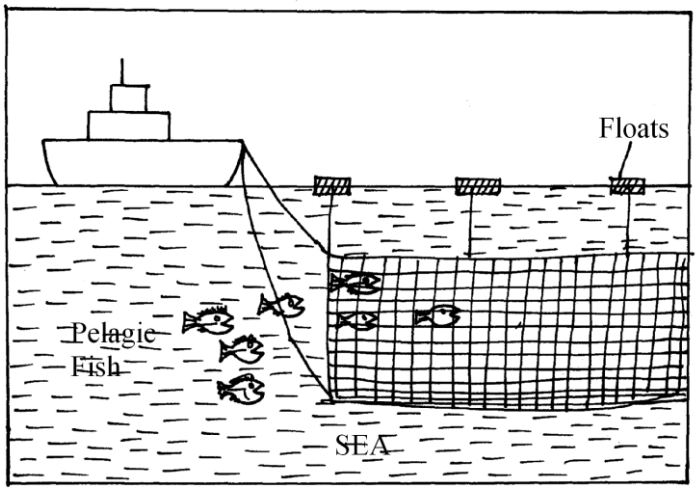
   (c) State four significance of tourism in Kenya (4mks)

   (d) Compare tourism in Kenya and Switzerland (6mks)

7. (a) (i) Define the term fisheries (2mks)

(ii) Name three pelagic salt water fish species (3mks)

(b) The diagram below demonstrates a method of fishing .Use it to answer the questions that follow.



(i) Identify the fishing method shown above (1mk)

(ii) Describe how fishing is done using the method named above (4mks)

(c) (i) Name two fresh water fishing grounds in Kenya (2mks)

(ii) Give three reasons why fresh water fishing is more developed than marine fishing in East Africa. (3mks)

(iii) State four economic benefits of fishing in Kenya. (4mks)

(d) Explain three physical factors favouring fishing in Japan (6mks)

8. (a) (i) Draw an outline map of Nigeria (1mk)

(ii) On the map shade the main growing areas of oil palm (2mks)

(b) State three physical conditions that are necessary for the growing of oil palm (3mks)

(c) Describe the stages involved in the harvesting and processing of oil palm fruits in Nigeria (8mks)

(d) Explain three ways in which oil palm contribute to Nigeria economy. (6mks)

(e) (i) State two uses of oil palm (2mks)

(ii) Give three problems facing oil palm in Nigeria. (3mks)

9. (a) (i) What is forestry? (2mks)

(ii) Name two forest reserves in Kenya (2mks)

(b) State two advantages of planted forests in Kenya (4mks)

(c) Explain four measures the government has put in place to manage and conserve forests (8mks)

(d) Explain three factors that have hindered the exploitation of the equatorial forests (6mks)

(e) Give two economic uses of mangrove forest. (2mks)

10. (a) (i) What is an environmental hazard (2mks)

(ii) A part from floods name two other environmental hazard (2mks)

(b) Explain three effects of air pollution on the environment (6mks)

(c) Describe four measures being taken to manage and conserve the environment in Kenya (8mks)

(d) Students from Rianyabaro school of excellence intend to carry out field study in an area affected by floods.

(i) State two objectives of their study (2mks)

(ii) Give two reasons why would prepare a work schedule

(iii) Suggest three measures they would recommend to the local community on how to control floods.

NAME: …….. INDEX NO: ……...

SCHOOL: ……. CANDIDATE SIGN: …….

DATE: ……...

311/1
HISTORY AND GOVERNMENT
PAPER 1
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

311/1
HISTORY AND GOVERNMENT
PAPER 1
TIME: 2 ½ HOURS

INSTRUCTION

a) This paper consist of three sections, A, B and C.
b) Answer *all* the questions in section A, *three* questions from section B and *two* questions from section C.
c) Answer to all questions must be written on the separate sheet provided.

This paper consist of 2 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

SECTION A: (25 MARKS)

Answer **ALL** questions in this section

1. State **two** disadvantages of Archaeology as a source of information on History and Government of Kenya. (2mks)
2. Name **two** communities that belong to the Western Bantu speakers of Kenya. (2mks)
3. State **two** ways through which iron technology assisted in the migration and settlement of the Bantu in Kenya. (2mks)
4. Why did Seyyid Said move his capital from Muscat to Zanzibar. (2mks)
5. Identify **two** communities that showed mixed reactions towards the British as they occupied Kenya. (2mks)
6. Who was the first representative of the Africans in the legislative council during colonial period. (1mk)
7. What made the East African Association different from the other early associations that were formed in Kenya during colonial period. (lmk)
8. Identify **two** Educational Associations that were formed in central Kenya during the colonial period. (2mks)
9. State two roles played by the Africans in the medical field during colonial period. (2mks)
10. Why did KANU refuse to form a government after the 1961 elections in Kenya. (lmk)
11. Name the central oathing committee that was set up to coordinate oathing activities of the Mau Mau freedom fighters. (1mk)
12. Identify one type of citizenship in Kenya. (lmk)
13. Which body supervises the electoral process in Kenya. (lmk)
14. What is meant by devolution of power in Kenya. (lmk)
15. What are the roles of the Director of Public Prosecution in Kenya. (2mks)
16. Give one achievement of the Local Native Councils formed in Kenya in 1924. (1mk)
17. What is promulgation of a constitution. (lmk)

SECTION B (45 Marks)

Answer three questions from this section

18. (a) Give five reasons for the migration of the Bantu from their original homeland to Kenya. (5mks)

    (b) Explain the political organization of the Agikuyu in Kenya in pre-colonial period. (l0mks)

19. (a) State three reasons why the Akamba were involved in the Long Distance Trade between the East African Coast and the interior of Kenya. (l2mks)

    (b) Explain any six effects of the Long Distance Trade between the East African Coast and the interior of Kenya. (l2mks)

20. (a) Give five reasons why the Maasai collaborated with the British in Kenya in the 19th century. (5mks)

    (b) Explain five results of the Maasai collaboration with the British in Kenya in the 19tu1 century. (10mks)

21. (a) What were the demands of African Elected Members Organization during the colonial period in Kenya. (5mks)

    (b) Explain any five constitutional changes leading to independence in Kenya. (l0mks)

SECTION C (30 Marks)

Answer any two questions from this section.

22. a) State the importance of the concept of the rule of law

    b) Explain how the government ensures that the rule of law is upheld

23. (a) State five factors that make it difficult for the prisons department in Kenya to work effectively. (5mks)

    (b) What has the government of Kenya done to improve the situations in prisons. (l0mks)

24. a) Identify the challenges faced by the government in its efforts to raise revenue

    b) Explain how the government of Kenya controls public finance.

NAME:……..INDEX NO:……

SCHOOL:…….. CANDIDATE SIGN:…...…….

DATE...…….

441/1
HOME SCIENCE
PAPER 1
Theory
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

441/1
HOME SCIENCE
PAPER 1
Theory
TIME: 2 ½ HOURS

Instructions to Candidate:

1. Write your name, school and index number in the spaces provided .
2. This paper consist of three sections A, B and C.
3. Answer All the questions in section A and B and any two questions from section C in the spaces provided.

For Examiners use only

Section	Question	Maximum score	Candidate score
A	1- 	40 20	
B		20	
C		20	
Total			

This paper consist of 8 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

SECTION A-(40MKS)

Answer all questions in the spaces provided.

1. Give two qualities to look for in hand sewing needle. (2mks)

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2. Give three disadvantages of relying on solar energy in the home. (3mks)

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3. Name two conspicuous names used to highlight style features. (2mks)

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4. Give two qualities of a good dust bin. (2mks)

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5. Give three reasons of coating food before deep frying (3mks)

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6. Name three causes of anaemia other than nutritional deficiency. (3mks)

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7. Mention three uses of fats in cookery. (3mks)

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8. State two reasons for blending vegetables before freezing. (2mks)

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9. Give two disadvantages of convenience food.

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10. Suggest two reasons why a lactating mother would have inadequate milk. (2mks)

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11. Give two reasons why clothes are steeped. (2mks)

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12. State two reasons why interfacing is done on collars, cuffs and bands . (2mks)

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13. Give four reasons why a consumer needs protection. (4mks)

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14. Name four types of weaning. (2mks)

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15. Identify three dangers of excess weight gain during pregnancy. (3mks)

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16. Identify four desirable qualities of baking flow. (2mks)

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17. Mention two reasons why a shopping list is useful to the consumer (1mk)

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Section B-20mks (Compulsory)

18. You are taking care of the home while your mother is away visiting.

a) With reasons, explain how you would launder a white tea towel with an old tea stain. (8mks)

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b) Describe how to wash a neglected aluminium pan (4mks)

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c) Give reasons describe how to weekly clean the kitchen floor made of terrazzo. (8mks)

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Section C 40 mks.

19. a) Giving reasons state five precautionary measures to take while deep frying foods. (5mks)

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b) Outline five ways of finishing the lower edge of a short sleeved blouse decoratively. (5mks)

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c) A wise shopper is a wise consumer:
Give five points a consumer should consider before buying an item (5mks)

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d) State five confidetions to make when finishing a living / sitting room. (5mks)

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20. a) Explain factors that influence the cleaning frequency of a home. (10mks)

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b) State five points to observe when fixing fastening onto a garment. (5mks)

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c) Suggest five ways of ensuring that left over foods do not go bad in the absence of a refrigerators. (5mks)

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21. a) Describe the procedure of preparing a single pointed dart. (5mks)

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b) Mention any 5 signs and symptoms of pregnancy. (5mks)

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c) Explain any five food hygiene practice.

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NAME:……..INDEX NO:……

SCHOOL:…….. CANDIDATE SIGN:…...…….

DATE...…….

441/2
HOME SCIENCE
PAPER 2
(Clothing construction)
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

441/2
HOME SCIENCE
PAPER 2
(Clothing construction)
TIME: 2 ½ HOURS

Instructions to candidates.

This paper consist of 4 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated And no questions are missing.

A pattern of a pair of shorts is provided. You are advised to study the sketches, instructions and the ayout carefully before you begin the test.

Materials provided.

1. Pattern pieces.
   - A. Short front.
   - B. Short back.
   - C. Pocket.
   - D. Waistband.
   - E. Front short facing.
   - F. Back short facing.

2. Plain light weight cotton fabric 50cm long by 90cm wide.

3. Cotton sewing thread to match the fabrics.

4. One large envelopes.

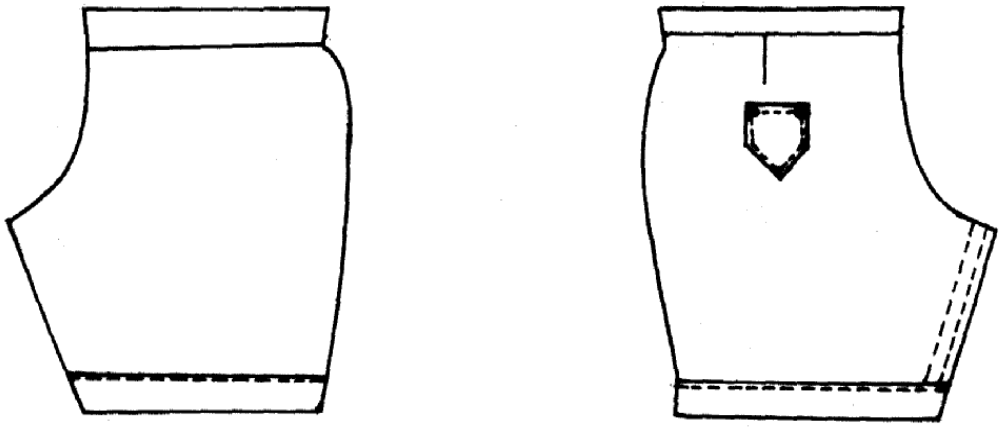
THE TEST.

Using the materials provided, cut out and make the LEFT LEG of the short to show the following processes.

a) Making of the back dart.
b) Preparing and attaching the pocket.
c) Working of the inner leg seam using machine fell seam.
d) Working of the side seam using an open seam.
e) Preparing the facing and attaching them onto the lower edge of the shorts.
f) Fixing the facing using machine stitching.
g) Preparing and attaching the waistband.
h) Finishing the waistband using hamming stitches.

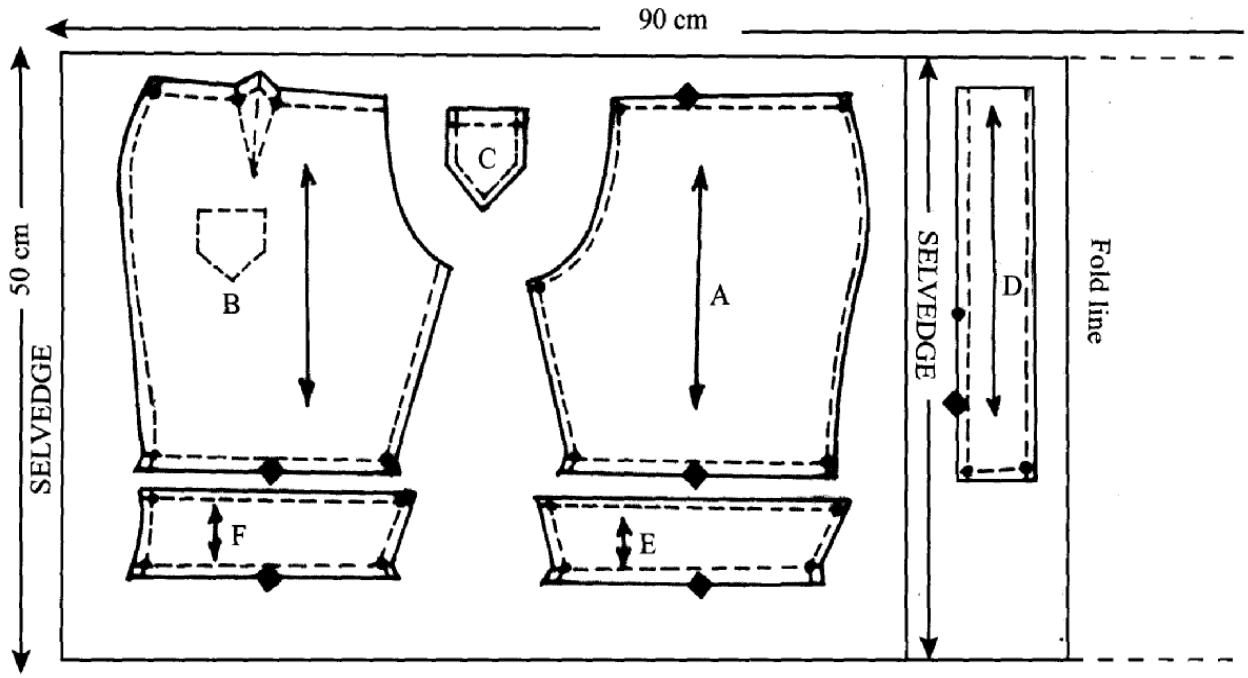
At the end of the examination firmly show on your work on a single fabric, a label bearing your name and index number. Remove the needles and pins from your work then fold your work neatly and place it in the envelope provided. Do not put scrapes of fabric in the envelope.

VIEW OF A PAIR OF SHORTS



FRONT BACK

LAYOUT (NOT DRAWN TO SCALE)



NAME:…… **INDEX NO……..**

SCHOOL:…….. **CANDIDATE'S SIGN ……..**

DATE …….

441/3
HOME SCIENCE (FOOD AND NUTRITON)
Paper 3
(PRACTICAL)
Time: 1 ¾ HOURS

Kenya Certificate of Secondary Education (KCSE)

441/3
HOME SCIENCE (FOOD AND NUTRITON)
Paper 3
(PRACTICAL)
Time: 1 ¾ HOURS

PLANNING SESSION: 30 MIUTES
PRACTICAL TEST SESSION: 1 ¾ HOURS

INSTRUCTIONS TO CANDIDATES

1. Read the test carefully.
2. Write your name and Index number on every sheet of paper used.
3. Text books and recipes may be used during the planning session as reference materials.
4. You will be expected to keep to your order of work during the practical session.
5. You are only allowed to take away your reference materials at the end of the planning session.
6. You are not allowed to bring additional notes to the practical session.

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

THE TEST.

The B.O.G chairman has visited the school and you have been put in charge of his lunch.

Using all the ingredients listed below, prepare, cook and present a meal for him and the principal of the school.

Ingredients.

1. Rice/ wheat flow/ ugali flour
2. Beef/ chicken/ fish
3. Vegetables in season
4. Pineapples
5. Sweet Bananas
6. Lemon
7. Mellon
8. Sugar
9. Tomatoes
10. Salt
11. Oil/ fat
12. Onions
13. Seasoning (Roiko, mixed spice e.t.c)

1. Identify the dishes and write down the recipe.
2. Write down your order of work.
3. Make a list of the food stuff and equipment you will require.

JINA:……NAMBARI:…….....

SHULE:……SAHIHI:……....

TAREHE:……

102/1
KISWAHILI
KARATASI YA 1
INSHA
MUDA: Saa 1 ¾

Cheti cha Kuhitimu Elimu ya Sekondari (K.C.S.E)

102/1
KISWAHILI
KARATASI YA 1
INSHA
MUDA: Saa 1 ¾

MAAGIZO:

1. Andika insha MBILI. Insha ya kwanza ni ya Lazima.
2. Chagua insha nyingine kutoka hizo tatu zilizobaki.
3. Kila insha isipungue maneno 400.
4. Kila insha ina alama 20.

Hii karatasi ina kurasa 2 zilizopigwa chapa.
Mtahiniwa ahakikishe kuwa kurasa zote mbili za karatasi hii ya mtahini zimepigwachapa sawasawa
Na kuwa maswali yote yamo.

1. **Insha ya lazima.**
   Umetuma ombi la kuajiriwa kazi ya udaktari. Andika tawasifu uliyoambatanisha kwa ombi lako.

2. “Uvumbuzi wa tarakilishi umeleta madhara mengi kuliko manufaa.” Jadili.

3. Mla cha mwenziwe na chake huliwa.

4. Malizia insha yako kwa manemo yafuatayo:
   “Walikumbatiana kumbatu. Machozi yakapita nyusoni kwa hiari na kufanya nguo kubana.kilichopendeza na muhimu ni kuwa, walirudiana tena. Hakuna tofauti tena.

JINA:……..NAMBARI:……..……

SHULE:…….. SAHIHI:…….

TAREHE…….

102/2
KISWAHILI
KARATASI YA 2
LUGHA
MUDA: Saa 2 ½

Cheti cha Kuhitimu Elimu ya Sekondari (K.C.S.E)

102/2
KISWAHILI
KARATASI YA 2
LUGHA
MUDA: Saa 2 ½

MAAGIZO:

1. Andika jina lako na nambari yako katika nafasi ulizoachiwa hapo juu.
2. Tia sahihi yako na tarehe ya mtiani katika nafasi ulizoachiwa hapo juu.
3. Jibu maswali yote.anika majibu yako katika nafasi zilizoachiwa katika karatasi za maswali.
4. watahiniwa ni lazima wahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.

KWA MATUMIZI YA MTAHINI PEKEE

SWALI	UPEO	ALAMA
1.	15	
2.	15	
3.	40	
4.	10	
	JUMLA	

Hii karatasi ina kurasa 12 zilizopigwa chapa.
Mtahiniwa ahakikishe kuwa kurasa zote mbili za karatasi hii ya mtahini zimepigwachapa sawasawa
Na kuwa maswali yote yamo.

UFAHAMU (ALAMA 15)

Soma taarifa ifuatayo halafu ujibu maswali yafuatayo.

Kama kuna jambo ambalo limeiparanya akili ya mahaluki ni kuelewa dhana ya demokrasia. Kiumbe huyuheshi kuuliza mkururu wa maswali. Demokrasia ni nini hasa? Tunaweza kula demokrasia? Ni dude gain hili? Lina kichwa au mkia pekee yake? Je, demokrasia inazua njaa? Demokrasia ni himaya ya wasomi tu au vilevile ni haki ya mafalahi? Kwa muda mrefu kumekuwa na kinyang'anyiro kikubwa katika jamii ambaco azma na matokeo yake yamekuwa yakutatanisha. Baadhi ya watu wamejitokeza kama mchuzi na ugali na kuzusha zamaha ambayo si za kuyamkinika. Vichwa vya adinasi vikafyekwa kwa miundo na maparanze na matumbo yakapasuliwa na kuapakaza utumbo na vijusi kila mahali. Shingo zikapigwa visingi nakukomewa ardhini. Demokrasia si mchezo wa lelemama. "Ni sharti tujifunge vibebwe tumwage damu na tufe ili tupate demokrasia ya kweli!" mmoja wa mibabe wa demokrasia alinisuruma kadamnasi ya umati huku ngoma za vita zikinguruma hata marekani na ulaya walimwaga damu. Mamilioni wa watu walipukutishwa na kibunga cha demokrasia. Chini walilaliana kama vimatu na tunutu. Hawa wanafikiri hatuwasui. Katu hatukubali porojo zao. Wanatupikia majungu kasha wanatoweka. Kuna demokrasia ya Afrika na ile ya ulaya

Demokrasia ya Afrika basi imefuata mkondo huu wa umwagikaji damu. Kila kukijiri uchaguzi zahama hutawala. Walio madarakani hawataki kubanduka. Hutafuta visababu vya kukwepa wimbi la ushindi. Demokrasia ni mchezo wa mizengwe tu ati. Hali hii imesababisha maafa makubwa, uharibifu mkubwa wa mali, majeraha, ukimbizi wa raia ndani na nje ya mataifa husika, dhuluma za kimapenzi dhidi ya wanawake kuzagaa kwa magonjwa ainati , uhasama wa kikabila jambo la kusikitisha ni kuwa raia na viongozi hawaelekei kujjifundisha chochote kutokana na hali. Huku mataifa mengi ulayani na asia yakikwe daraja moja baada ya nyingine kimeendeleo, Afrika imedumaa tu. Imesalia kuimba ule wimbo wake wa kutoka azali, " tunaendelea vipi na tunadhulumiwa na kak wakubwa . "siasa ya demokrasia katika bara la Afrika ina tija kubwa sana hususan kwa wale wachache wanaofanikiwa kudhibiti nyenzo za kutia tonge kinywani. Ulitima wa umma husalia miradi – hewa ya tabaka la viongozi ambayo hutumiwa kujinadi zamu nyingine ifikapo tena. Demokrasia ya kweli imo mikononi mwa umma pale utakapojikomboa kimawazo na kwa ujasiri kudai huduma bora, uajibikaji na kuheshimiwa kwa mkataba wa kijamii ulioasisiwa na Jean Jackues Rousseau.

Maswali.

a) Binadamu amechanganyikiwa katika njia ipi? (alama 2)

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b) Ni vipi demokrasia ya kweli inaweza kufikiwa? (alama 2)

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c) Kwanini inasemekana kuwa "Demokrasia ni mchezo wa mizengwe?" (alama 2)

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d) Ni athari gani hutokea hutokana na kinyang'anyiro cha demokrasia (Alama 4.)

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e) “dhiki za raia zimesalia kuwa mradi hewa wa wanasiasa.” Eleza. (alama2.)

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f) Fafanua maana ya maneno na mafungu yafuatayo jinsi yalivyotumika katika taarifa. (alama 3)

i) Mafalahi.

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ii) Wanatupikia majungu.

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iii) Ukarabati

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MUHTASARI (ALAMA 15)

Soma kifungu hiki kisha ujibu maswali yafuatayo.

Sisi vijana wa Kenya inatupasa tuwajibike kufanya kazi kwa bidii, na kwa dhati ya mioyo yetu ili tuweze kupata ufanisi, na uwezekano wa kuinua nchi yetu katika kiwango cha juu. Tukumbuke, “Ajizi ni nyumba ya njaa.” Kwa hivyo basi haifai kulaza damu ikiwa matatizo nchini mwetu yametuzonga. Lazima tufanye kazi kwa busara, adau njema na jitihada kwa moyo mmoja. Sharti tutilie maanani zaidi elimu ya vijana na watu wazima, kilimo, uchumi na amani katika nchi yetu. Tunahitaji taifa lenye watu walioelimika, kwani bila elimu itakuwa vigumu sana kuweza kutekeleza mipango mbalimbali ya maendeleo. Tupende tusipendelazima tuzidishe mazaoshambani, kwani kila kukicha idadi ya watu inaongezeka. Ni sharti tuweze kujitosheleza katika vyakula. Zaidi ya hayo pia lazima tujishughulishe na biashara ambapo kwa sasa ni wakenya wachache sana ambao wanatambua umuhimu wa biashara. Wengi ni wale wenye mawazo ya kwamba, lazima kila mmoja aajiriwe maishani. Yatupasa tujitahidi kuleta uchumi katika mikono yaa wananchi wa Kenya badala ya kuwaachia wengine ambao hawahusiki.

Mafunzo tunayopata majumbani, shuleni na hata katika jamii, lazima yatuwezeshe kutambua mbinu za kupitia. Tunahitaji elimu tambuzi ambayo itamfanya mwanakenya kujua wajibu wake katika jamii. Tumesinywa na elimu pumbao; inayopumbaza na kutufanya tusione mbele. Sisi vijana tukiwa viongozi wa siku zijazo, “Utengano ni uvundo !! lugha ya taifa ndicho chombo cha pekee ambacho kinatuunganisha na kuweza kutuwasilishia mapendeleo, mawaidha na hisia zetu. Kukosa ndiko kibinadamu, wakati tunapokosea, lazima tukubali tumekosa na kufanya masahihisho mara moja kwani, “Usipoziba uf,utajenga ukuta.” Tusikasirike kwa sababu tumesahhishwa makosa yetu na wenzetu. Lazima tujitoe mhanga na kupigania nchi yetu tukiwa wazalendo halisi.

Sisi tukiwa vijana sharti tujihusishe na kuyaangalia matatizo ya nchi, pia kutafuta njia za kutatua matatizo hayo. Siku zote tutekeleze nidhamu. Nidhamu. Ni jambo la kusikitisha kwamba sisi vijana twashitumiwa mara kwa mara kwa kutokuwa na nidhamu shuleni na manyumbani mwetu. Utamaduni wa asili unakariri sana tuwe na nidhamu shuleni na majumbani mwetu. Ili watu waweze kuishi maisha bora na kuwa na maendeleo, amani na upendo, lazima tuwe na bidii, ushirikiano mwema na kuchagua viongozi wenye mioyo ya maendeleo. Tukiwa na viongozi ambao hawajjishughulishi na maendeleo, basi tutabaki nyuma kama mkia siku zote. Bahati mbaya ni kwamba wananchi wengi siku hizi huchagua viongozi wao kwa kufuata ukoo ama kama kwa utajiri wake. Kwa hivyo basi ni vyema kuwachagua viongozi kutokana na ufanisi wanaoweza kuleta bali si kwa kutegemea utajiri ama ukoo.

Maswali.

a) Katika aya ya kwanza mwadishi anawahimiza vijana kufanya nini ili kuleta maendeleo? (maneno 50) (Al.6 mtiririko 1)

Nakala chafu

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Nakala safi.

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b) Kwa mujibu wa taarifa ni mambo gain yaliyochangia kuzorota kwa maendeleo nchini Kenya? (Al.7,mtiririko1)

(maneno 60)

Nakala chafu.

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Nakala safi

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Swali la 3. – matumizi ya lugha.

a) Eleza tofauti kati ya sauti dh na th (al.2)

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b) Tunga sentensi mbili ukitumia ni kama kitenzi na kame kielezi. (al.2)

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c) Tofautisha maana ya sentensi zifuatazo.

i) Walipokelewa wageni.

ii) Walipokezwa wageni.

(alama2)

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d) Andika wingi wa sentensi ifuatayo.

Wakati wa kiangazi kuna tatizo/inalokumba zaraa. (alama.2)

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e) Andika sentensi hii kwa usemi wa taifa.

Fatuma alisema, “Sofia alinitea nguo yake jana na nitaivaa kesho nikienda Nairobi.” (alama.2)

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f) Tofautisha matumizi ya ngali katika sentensi.

i) Mueni angali anasoma.

ii) wasonga angalisoma angalipita. (alama.2)

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g) Bainisha aina za shamirisho katika sentensi hii .

Baba alitumiwa pesa na kakangu kwa rununu (alama.3)

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h) Changanua sentensi ifuatayo kwa njia ya mishale.

Mwanafunzi aliyeumia jana amepelekwa hospitalini. (al 4.)

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i) Badilisha sentensi hii iwe katika hali ya udogo

Jipaka lilirarua jinguo lake. (alama.2)

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j) Yakinisha.

Usingekuwa na nia safi asingekusamehe (alama.2)

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k) Sahihisha sentensi hii

Mtu ambaye anakula mkate ametumana aletewe chai. (alama.2)

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L) Andika sentensi mpya kwa kufuata maagizo

Kama watoto hawawathamini wazazi wao hawawezi kufanikiwa maishani.

Anza Ni vigumu…… (alama .2)

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M) Akifisha:

Nani aliyekikata chandarua changu kwa wembe sasa sitaweza kusaffiri nilikotaka kwenda kule malaba ninamtaka aj aniombe msamaha. (alama.3)

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N) i) Eleza matumizi mawili ya kiambishi ndi-

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ii) Ainisha viambishi awali na tamati katik neon lifuatalo.

Wameridhiana. (alama.4)

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O) Tumia amba katika sentesi ifuatayo:

Wanafunzi wapiti mtihani husherehekea. (alama.1)

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p) Tumia kivumishi cha nomino kutunga sentensi. (alama.1)

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q) Taja aina ya kirai kilichopigwa mstari katika sentensi ifuatayo.

<u>Walimu wa Kiswahili</u> watawasili leo. (alama.1)

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r) Andika kinyume cha sentensi hii.

Mvulana mmoja ameoa. (alama.1)

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s) Sentensi zifuatazo ni za aina gain?

i) Aliyetoroka ni yule.

ii) Sisi ndisi wezi ilhali wale ni watundu. (alama. 2.)

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4. ISIMU JAMII (ALAMA 10.)

a) Eleza maana ya lugha. (alama 1)

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b) Taja sifa nne za lugha (alama.4)

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c) Eleza sifa tano za sajili ya maabadini (alama.5)

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JINA:……..NAMBARI:…….……

SHULE:…….. SAHIHI:…….

TAREHE:…….

102/3
KISWAHILI
KARATASI YA 3
FASIHI
MUDA: Saa 2 ½

Cheti cha Kuhitimu Elimu ya Sekondari (K.C.S.E)

102/3
KISWAHILI
KARATASI YA 3
FASIHI
MUDA: Saa 2 ½

MAAGIZO:

a) Jibu maswali **manne** pekee.
b) Swali la **kwanza** ni **LAZIMA**.
c) Chagua maswali mengine **matatu** kutoka sehemu **nne** zilizobaki yaani, Riwaya, Tamthilia, Ushairi na Fasihi simulizi.
d) Usijibu maswali kutoka sehemu moja.
e) Kila swali lina alama 20

Hii karatasi ina kurasa 4 zilizopigwa chapa.
Mtahiniwa ahakikishe kuwa kurasa zote mbili za karatasi hii ya mtahini zimepigwachapa sawasawa
Na kuwa maswali yote yamo.

SWALI LA LAZIMA:
SEHEMU YA A: HADITHI FUPI.
DAMU NYEUSI.

1. Eleza masaibu ya fikirini kule ughaibuni ukirejelea hadithi ya damu nyeusi. Al.20

SEHEMU YA B. RIWAYA: Kidagaa kimemwozea.

2. Jadili maudhui haya;
   i) Uongozi mbaya. Al.10

   ii) Utabaka. Al. 10

3. Eleza matumizi ya mbinu kinaya katika riway hii al.20.

SEHEMU YA C: TAMTHILIA : MSTAHIKI MEYA.

4. "Siha pingamizi kwa maana hii ni grand idea."
   a) Nani anayesema maneno haya. al.2

   b) Eleza muktadha wa dondoo hii. al .4

   c) Chambua sifa za mhusika anayesema maneno haya. al.4

   d) Taja waliokua pamoja na mnenaji katika kadhia hii. al.3

   e) Toa mbinu iliyotumika katika dondoo hii al.1

5. Nchi za kiafrika zinakumbwa na changamoto tele thibitisha kauli hii ukizingatia tamthilia ya mstahiki meya al 20

6. SEHEMU YA D: USHAIRI.
Soma shairi lifuatalo kasha ujibu maswali yafuatayo;

Yamerundikwa machicha, na maganda ya matunda,
Na mwiko uliochacha, na mbali uliovunda,
Harufu inaposecha,yanukia naipenda,
Hakuna inamchusha,bustani ya maua.

Mianzi yetu ya pua, imeota pasigaa,
Hasia zinobagua, mara mbili zinafaa,
Kibaya tunarudua, kizuri kina balaa,
Tope ziwe ni halua, na samli imekaa.

Macho yameota kungu, ilaa yaona yote,
Hata likitanda wingu, anga litatanda kote,
Ni mzuri ulimwengu, wa furaha na wa kite,
Na bustani mwenzangu,kipita siteme mate.

Mahame na maanguko, machoni yanapumbaza,
Kifusi na mafuniko, moyoi yanaliwaza,
Mapakacha ya rundiko, topasi yanampoza,
Hakuna inomchusha, bustani ya maua.

Kuku anapara kucha, na bata tope aponda,
Mbwa pua inapucha, pipani anamowinda,
Taka zimejenga picha, inovutia kushinda,
Vitalu vyenye mahaba, ni lazima kuvilinda.

Mbu wanazaliana, mbu wajidunduliza,
Njiani tunapishna, nzi wanatubuiza,
Maradhi huzidiana, twacheka tukipuuza,
Liwazo kubwa si haba bustani yapendeza.

Maswali.

a) Eleza dhamira ya mtunzi wa shairi hili. (alama 2)

b) Shairi hili ni la aina gain? Toa sababu mbili. (alama 2.)

c) Eleza vitu vitatu vya kuchukiza ambavyo amevizungumzia mshairi. (alama 3)

d) Eleza ujumbe wa mtunzi kuhusu mabustani ya vitalu vya maua. (alama 4.)

e) Eleza umbo la shair hili. (alama 5.)

f) Kwa nini mshairi anasema kuwa macho yameota kungu katika ubeti wa tatu? (alama 2)

7. SEHEMU YA E: FASIHI SIMULIZI.

a) Eleza maana methali. al.2

b) Taja sifa tano za methali. al.5

c) Toa umuhimu wa methali za fasihi simulizi. al.5

d) Eleza matumizi ya methali za fasihi simulizi katika jamii. al.8

NAME: …….. INDEX NO: ……...

SCHOOL: ……. CANDIDATE SIGN: …….

DATE: ……...

121/1

MATHEMATICS
PAPER 1
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

121/1

MATHEMATICS
PAPER 1
TIME: 2 ½ HOURS

INSTRUCTION

a) Write your name and index number in the spaces provided above.
b) Sign and write the date of the examination in the spaces provided above.
c) This paper consist of **TWO** sections: **section I** and **Section II.**
d) Answer **ALL t**he questions in **Section I** and only **five** questions from **section II.**
e) Show all the steps in your calculations, giving your answers at each stage in the stage in the spaces below each question.
f) Marks may be given for correct working even if the answer is wrong.
g) **Non-programmable** silent electronic calculators **and** KNEC mathematical tables may be used, except where stated otherwise.

Section I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Section II

17	18	19	20	21	22	23	24	Total

Grand Total

This paper consist of 16 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

1. Evaluate without using a calculator or Mathematical tables leaving your answer in the simplest form. (3mks)

$$\frac{\frac{4}{11} \text{ of } \left(\frac{3}{4} - \frac{1}{20}\right)}{\left(3 + \frac{1}{3}\right) \div \left(1 + \frac{1}{10}\right)}$$

2. A Kenya bank buys and sells foreign currencies as shown.

	Buying (Ksh)	**Selling (Ksh)**
1 Euro	84.15	84.26
100 Japanese Yen	65.37	65.45

A Japanese travelling from France to Kenya had 5000 Euros. He converted all the 5000 Euros to Kenya shilling at the bank. While in Kenya, he spent a total of Ksh.289850 and then converted the remaining Kenya shilling to Japanese Yens at the bank. Calculate the amount in Japanese Yen that he received. (3mks)

3. Line L1 passes through the points A (1, -2) and B (3, -4). Find the equation of line L2 passing through the mid-point of AB and perpendicular to L1, leaving your answer in the form ax+by+c=0. (4mks)

4. The curved surface area of a cylindrical container is 1980cm2. If the radius of the container is 21cm, calculate to one decimal place the capacity of the container in litres (3 mks)
(Take $\pi = \frac{22}{7}$).

5. State all the integral values of a which satisfy the inequality. (4mks)
$\frac{3a+2}{4} \leq \frac{2a+3}{5} \leq \frac{4a+15}{6}$

6. Using a pair of compasses and a ruler only construct a triangle ABC such that AB= 4cm, BC = 6cm and ZABC = 135°. (2mks)

(b) Construct the height of triangle ABC in (a) above taking AB as the base, hence calculate the area of triangle ABC. (2 mks)

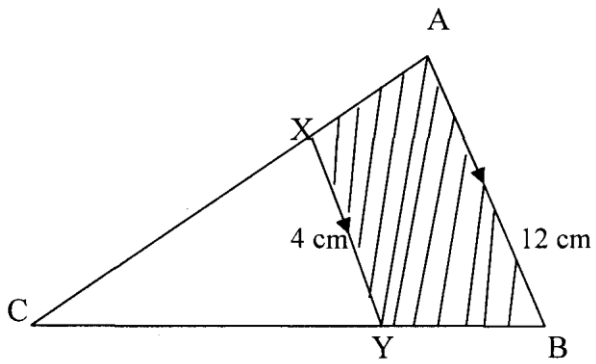
7. One interior angle of a polygon is equal to 800 and each of the other interior angles are 128°. Find the number of sides of the polygon. (3 mks)

8 . Given that tan c = 0.75, without using tables or a calculator find cos (180— ct) (3mks)

9. Simplify: (3 marks)

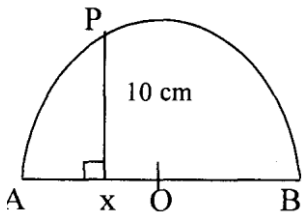
$$\left[\frac{X^3 - XY^2}{X^4 - Y^4}\right]^{-1}$$

10. In the figure below, lines AB and XY are parallel.



If the area of the shaded region is 36 cm2, find the area of triangle CXY. (3 marks)

11. In the figure below 0 is the centre of the circle diameter AB. <AXP = 900, AX 4cm and PX 10 cm. Calculate the radius of the semi-circle. (3 mks)



12. All prime numbers between ten and twenty are arranged in descending order to form a number.

(i) Write down the number. (1 mk)

(ii) State the total value of the third digit of the number formed in (i) above. (1 mk)

13. Find the value of x in the following equations: (3mks)

$(4)^{-2x} = (1/32)^{3x-4}$

14. The marked price of a car in a dealer's shop was Kshs 450,000. Wekesa bought the car at 7% discount. The dealer still made a profit of 13%. Calculate the amount of money the dealer had paid for the car. (3 mks)

1 5. Use tables of cubes, square roots and reciprocals to evaluate. (3mks)

$$\frac{3}{(0.3375)^3 - \sqrt{337.5}}$$

16. Without using tables or a calculator, evaluate (3mks)

$$\frac{(-2)\times 7 + (-4) \div (-3)}{3\times(-2) + 5\times(-4)}$$

17. (a) A bus traveling at 99km/hr passes a checkpoint at l0.00am and a matatu Traveling at 32km/hr in the same direction passes through the check point at 10.l5am. If the bus and the matatu continue at their uniform speeds, find the time the matatu will overtake the bus. (6 mks)

b) Two passenger trains A and B which are 240m apart and travelling in opposite directions at 164km/h and 88km/h respectively approach one another on a straight railway line. Train A is 150 metres long and train B is 100m long. Determine the time in seconds that elapses before the two trains completely pass each other. (4 mks)

18. The vertices of triangle PQR are P(O,O), Q(6, 0) and R(2, 4)

(a)Draw triangle PQR on the grid provided. (lmk)

b). Triangle P1Q1R' is the image of a triangle PQR under an enlargement scale factor , ½ and centre (2, 2). Write down the coordinates of triangle $P^1Q^1R^1$ and plot on the same grid. (2 mks)

c). Draw triangle $P^{11}Q^{11}R^{11}$ the image of triangle $P^1Q^1R^1$ under a positive quarter turn about points (1, 1). (3 mks)

d). Draw a triangle $P^{111}Q^{111}R^{111}$ the image of triangle $P^{11}Q^{11}R^{11}$ under reflection in the line y=l. (2mks)

e). Describe fully a single transformation that maps triangle $P^{111}Q^{111}R^{111}$ onto triangle $P^{/}Q^{/}R^{/}$ (2 mks)

19. A circular lawn is surrounded by a path of uniform width of 7m. The area of the path is 21% that of the lawn.

(a) Calculate the radius of the lawn. (4 mks)

(b) Given further that the path surrounding the lawn is fenced on both sides by barbed wire on posts at intervals of 10 metres and 11 metres on the inner and outer sides respectively. Calculate the total number of posts required for the fence. (4 mks)

(c) Calculate the total cost of the posts if one post costs sh 105. (2 mks)

20. The velocity of a particle t seconds after passing a fixed point 0, is given by $V = at^2 + bt$ m/s, where a and b are constants. Given that its velocity is 2 m/s when t =1 sec and it returns to 0 when t = 4.5 secs, calculate;

(a) The values of a and b. (4 mks)

(b) Hence find;

i) The values oft when the particle is instantaneously at rest. (2 mks)

ii) The total distance travelled by the particle during the first 4 seconds. (2 mks)

iii) The maximum velocity attained by the particle. (2mks)

21 . The table below shows marks obtained by 120 candidates. Frequencies for all the groups and also the area and height of the rectangle for the group 30 — 60 marks are shown.

Marks	0 – 10	10 – 30	30 – 60	60 – 70	70 – 100
Frequency	12	40	36	8	24
Area of rectangle			36		
Height of rectangle			1.2		

(a) (i) Complete the table. (2mks)

(ii) On the grid provided below, draw he histogram to represent the distribution. (4mks)

iii) State the group in which the median mark lies. (1 mk)

(iv) A vertical line drawn through the median mark divides the total area of the histogram into two equal parts. Using this information, estimate the median mark. (2 mks)

22. A frustum of a cone is such that one of its ends is hemispherical with a radius of2lcm and the other top end is circular with a radius of 10.5cm .The perpendicular distance between the centres of the circular parts is 20cm. Find;

(a) The slant length of the original cone. (3 mks)

(b) The slant length of the frustum. (2mks)

(c) The surface area of the frustum. (5 mks)

23. Four towns P, R, T and S are such that R is 80km directly to the north of P and T is on a bearing of 290° from P at a distance of 65km. S is on a bearing of 330° from T and a distance of 30 km. Using a scale of 1cm to represent 10km, make an accurate scale drawing to show the relative position of the towns. (4mks)

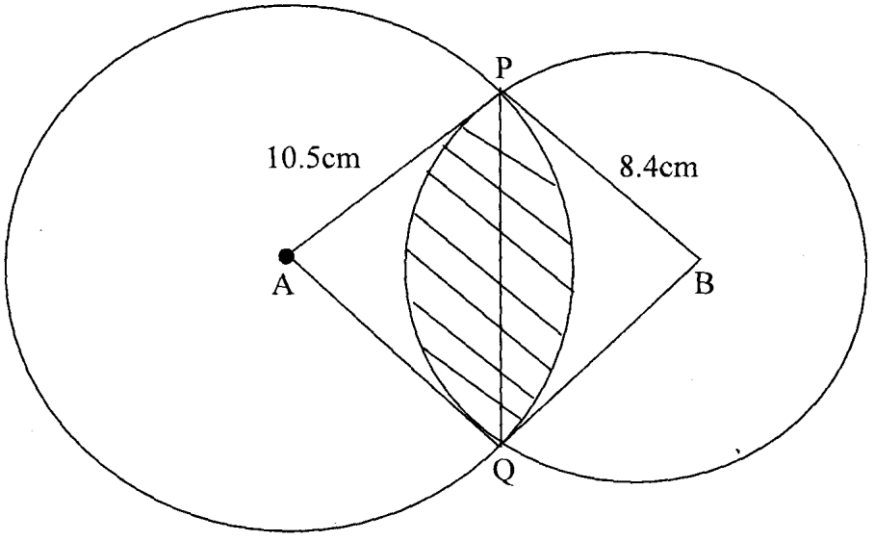
Find:

(a) The distance and the bearing of R from T (3mks)

(b) The distance and the bearing of S from R (2mks)

(c) The bearing of P from S (lmk)

24. The figure below shows two circles of radii 10.5 and 8.4cm and with centres A and B respectively. The common chord PQ 9cm.



(a) Calculate angle PAQ. (2 mks)

(b) Calculate angle PBQ. (2 mks)

(c) Calculate the area of the shaded part. (6 mks)

NAME:..... **INDEX NO:**.....

SCHOOL:..... **CANDIDATES SIGNATURE:**.....

DATE:.....

121/2
MATHEMATICS
PAPER 2
TIME: 2 ½ HOURS

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

121/2
MATHEMATICS
PAPER 2
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATES:

(a) Write your name and index number in the spaces provided above
(b) Sign and write the date of examination in the spaces provided above.
(c) This paper consists of ***TWO*** sections: ***Section I*** and ***Section II.***
(d) Answer ***ALL*** the questions in ***section I*** and only five from ***Section II***
(e) All answers and working must be written on the question paper in the spaces provided below each question.
(f) ***Show all the steps in your calculations, giving your answers at each stage in the spaces below each question.***
(g) Marks may be given for correct working even if the answer is wrong.
(h) ***Non-programmable*** silent electronic calculators and KNEC Mathematical tables may be used except where stated otherwise.

FOR EXAMINER'S USE ONLY

Section I

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total

Section II

17	18	19	20	21	22	23	24	Total

Grand Total

This paper consists of 16 printed pages.
Candidates must check to ascertain that all pages are printed as indicated and that no question(s) is/are missing.

1. Evaluate without using Mathematical tables or a calculator. (3mks)

$$2\log 5 - \frac{1}{2}\log 6 + 2\log 40$$

2. Solve for x given that the following is a singular matrix (2mks)

$$\begin{pmatrix} 1 & 2 \\ x & x-3 \end{pmatrix}$$

3. Make d the subject of the formula. (3mks)

$$a^2 = \sqrt{\frac{1+d^2}{b^2} - \frac{b}{3}}$$

4. Simplify $\frac{3}{\sqrt{7}-2} + \frac{1}{\sqrt{7}}$ leaving your answer in the form $a + b\sqrt{c}$, where a, b and c are rational numbers. (3mks)

5. Calculate the percentage error in the volume of a cone whose radius is 9.0cm and slant length 15.0cm. (3mks)

6. A quantity A is partly constant and partly varies inversely as a quantity B. Given that A = -10 when B= 2.5 and A = 10 when B = 1.25, find the value of A when B = 1.5. (4mks)

7. The table below shows corresponding values of x and y for a certain curve.

y	1.0	1.2	1.4	1.6	1.8	2.0	2.2
x	6.5	6.2	5.2	4.3	4.0	2.6	2.4

Using 3 strips and mid-ordinate rule, estimate the area between the curve x axis, the line x = 1 and x = 2.2. (2mks)

8. 14 people can build 10 huts in 30 days. Find the number of people working at the same rate that will build 18 similar huts in 27 days. (3mks)

9. The coordinates of two airports M and N are (60^0N, 35^0W) and (60^0N, 15^0E) respectively. Calculate;

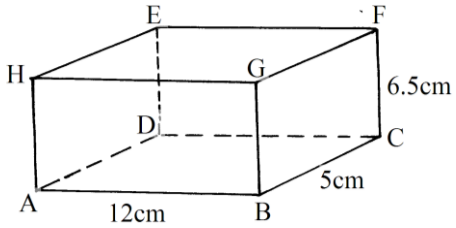
(i) The longitude difference. (1mk)

(ii) the shortest time an aeroplane whose speed is 250 knots will take to fly from M to N along a circle of latitude. (2mks)

10. (a) Expand $(x-0.2)^5$ in ascending powers of x. (2mks)

(b) Use your expansion up to the fourth term to evaluate 9.8^5. (2mks)

11. The figure below is a cuboid ABCDEFGH. AB = 12cm, BC = 5cm and CF = 6.5cm.



(a) State the projection of AF on the plane ABCD. (1mk)

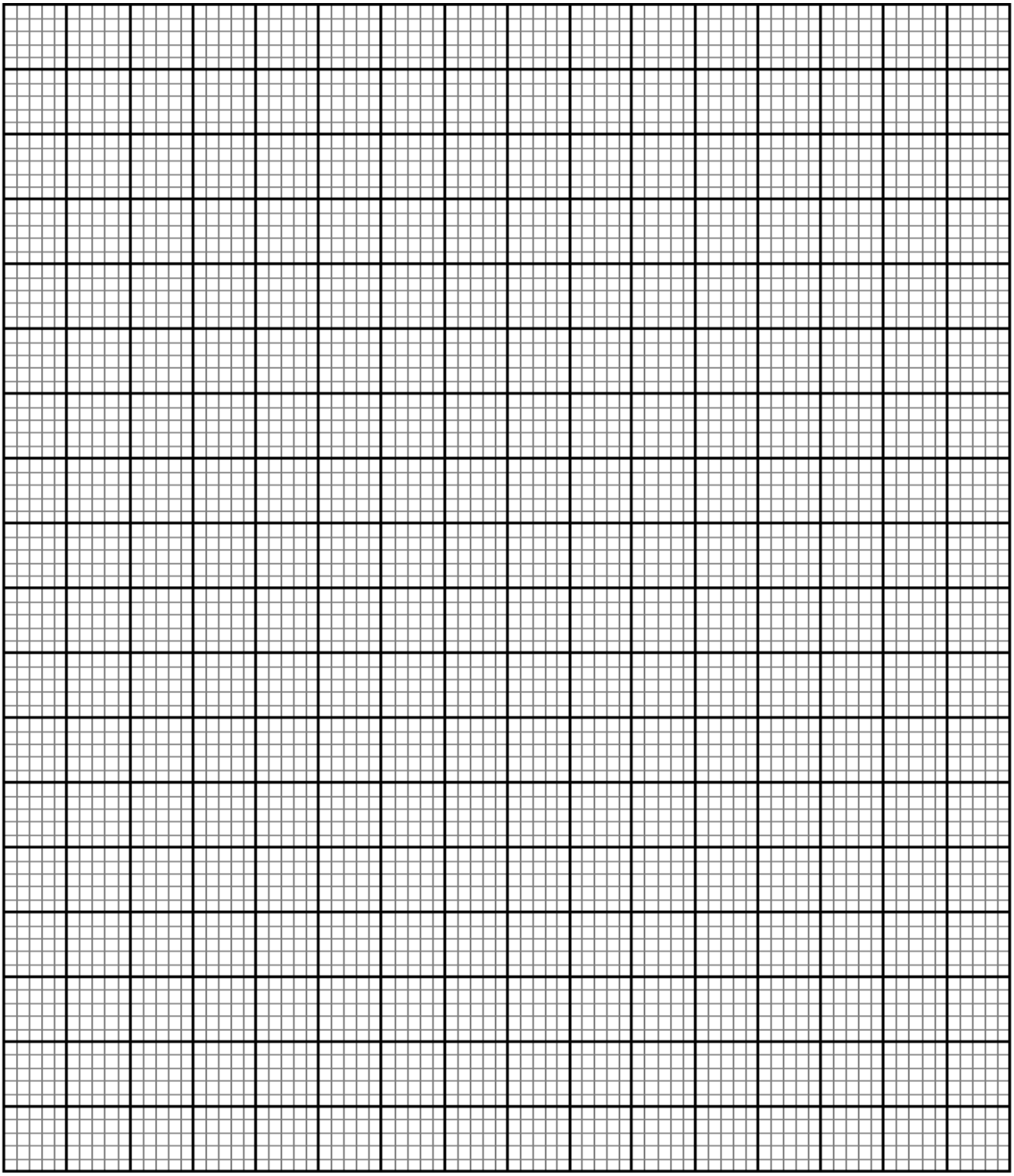
(b) Calculate the angle between AF and the plane ABCD correct to 2 decimal planes. (3mks)

12. Show that $\frac{\sin x(\cos x+1)}{Cosx} = \sin x + \tan x$. (3mks)

13. The mid-point of AB is (1,-1.5, 2) and the position vector of a point A is $-\underset{\sim}{1}+\underset{\sim}{j}$. Find the magnitude of $\vec{AB}$ where O is the origin. (3mks)

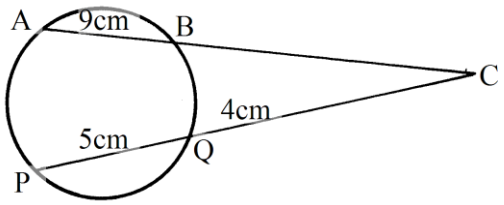
14. Draw a line of best fit for the graph of y against x using the values in the table below. Hence determine the equation connecting y and x.

x	0.4	1.0	1.4	2.0	2.5
y	0.5	1.0	1.2	1.5	2.0



15. A coffee dealer mixes two brands of coffee, x and y to obtain 40kg of the mixture worth Ksh. 2,600. If brand x is valued at Ksh. 70 per kg and brand y is valued at Ksh. 55 per kg. Calculate the ratio in its simplest form in which brands x and y are mixed. (4mks)

16. The figure below shows a circle centre O. AB and PQ are chords intersecting externally at a point C. AB = 9cm, PQ= 5cm and QC = 4cm. Find the length of BC. (3mks)



SECTION II (50 MARKS)

Answer only five questions in this section

17. (a) Salome invested Ksh. 250,000 for 2 ½ years in an account which paid 16% compound interest p.a. The interest is compounded quarterly. At the end of 2 ½ years she withdrew all the amount and spent it to the nearest thousands to buy four similar motor cycles. She earned an average of Ksh. 10,000 from each motorcycle per month.

    (i) the amount she withdrew at the end of 2 ½ years. (2mks)

    (ii) the cost of each motorcycle. (2mks)

    (iii) the total earnings from the motorcycles for 3 years. (2mks)

    (b) She decided to sell the motorcycles after depreciating at an average rate of 20% p.a for the 3 years.

    Find:-

    (i) the new value of each motorcycle after depreciation. (2mks)

    (ii) the profit earned from her initial investment to the nearest shilling. (2mks)

18. The table below shows the distribution of ages in years of 50 adults who attended a clinic:-

Age	21-30	31-40	41-50	51-60	61-70	71-80
Frequency	15	11	17	4	2	1

(a) State the medium class (1mk)

(b) Using a working mean of 45.5, calculate:-

(i) the mean age (3mks)

(ii) the standard deviation (3mks)

(iii) Calculate the 6^{th} docile. (3mks)

19. An arithmetic progression (AP) has the first term a and the common difference d.

(a) Write down the third, ninth and twenty fifth terms of the AP in terms of a and d. (1mk)

(b) The AP above is increasing and the third, ninth and twenty fifth terms form the first three consecutive terms of a Geometric Progression (G.P) The sum of the seventh and twice the sixth terms of the AP is 78. Calculate:-

(i) the first term and common difference of the AP. (5mks)

(ii) the sum of the first nine terms of the AP. (2mks)

(iii) The difference between the fourth and the seventh terms of an increasing AP. (2mks)

20. The probability that three candidates; Anthony, Beatrice and Caleb will pass an examination are $\frac{3}{4}$, $\frac{2}{3}$ and $\frac{4}{5}$ respectfully. Find the probability that:-

(a) all the three candidates will pass (2mks)

(b) all the three candidates will not pass. (2mks)

(c) only one of them will pass (2mks)

(d) only two of them will pass. (2mks)

(e) at most two of them will pass. (2mks)

21. (a) Complete the table below for the function $y = (3-x)\ (x+1)$

x	-3	-2	-1	0	1	2	3	4
x+1	-2	-1		1		3	4	
3-x	6	5	4		2	1		-1
y	-12	-5		3	4		0	-5

(2mks)

(b) Use the values in the table to draw the graph of $y = (3-x)\ (x+1)$. Use the following scale.

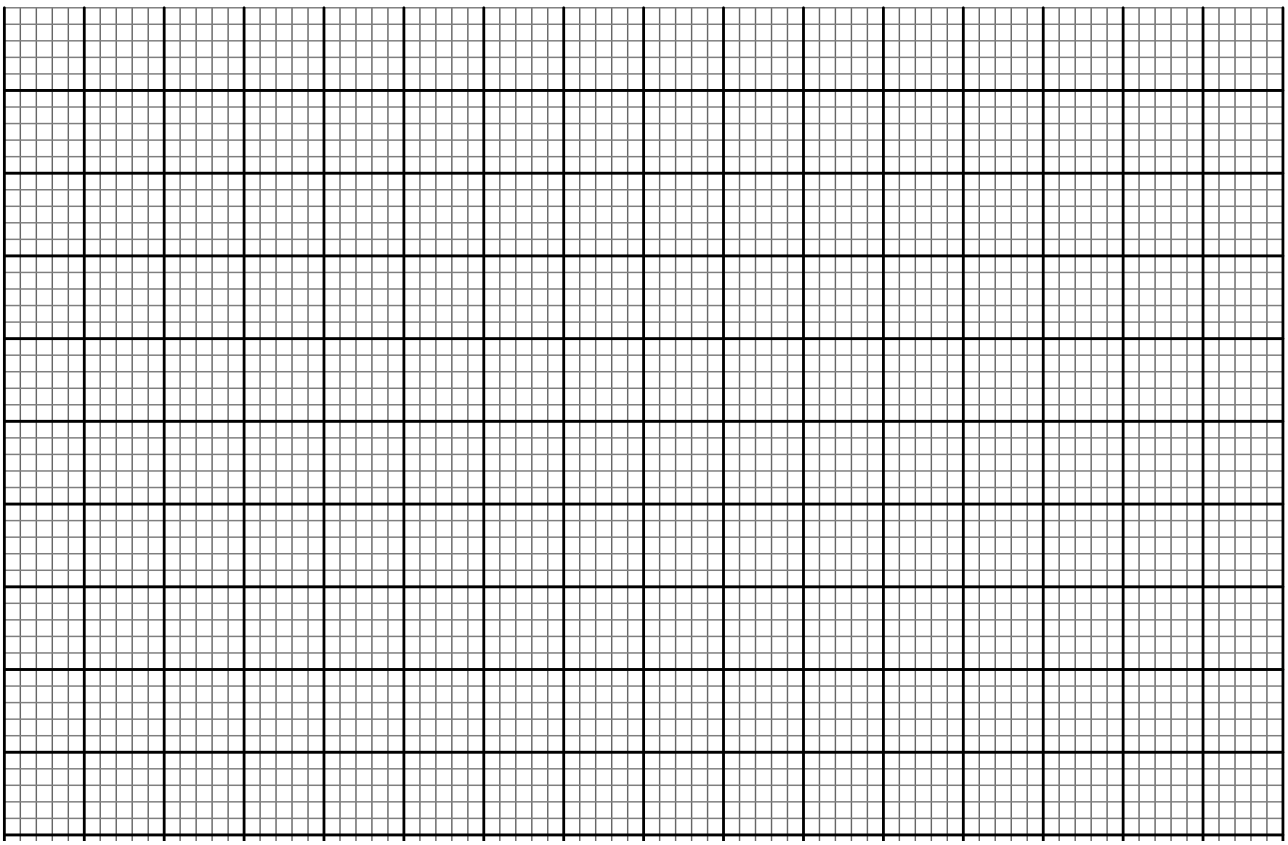
Horizontal axis 2cm for 1 unit

Vertical axis 1cm for 1 unit. (3mks)

(c) Use your graph in part (b) above to solve the following quadratic equations

(i) $-x^2 + 2x + 3 = 0$ (2mks)

(ii) $-x^2 + x + 6 = 0$ (3mks)



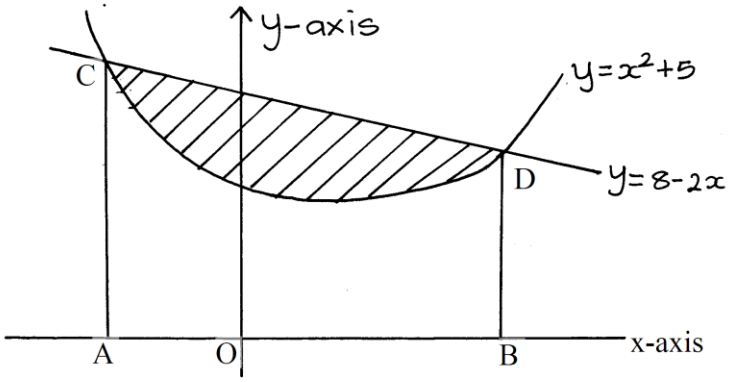
22. Use a ruler and a pair of compasses only all constructions in this question.

(a) Construct the rectangle ABCD such that AB = 7.2cm and BC = 5.6cm. (3mks)

(b) Constructs on the same diagram the locus L_1 of points equidistant from A and B to meet with another locus L_2 of points equidistant from AB and BC at M. measure the acute angle formed at M by L_1 and L_2. (3mks)

(c) Construct on the same diagram the locus of point K inside the rectangle such that K is less than 3.5cm from point M. Given that point K is nearer to B than A and also nearer to BA than BC, shade the possible region where K lies. Hence calculate the area of this region. Correct to one decimal place. (4mks)

23. The diagram below, not drawn to scale shows part of the curve $y = x^2 + 5$ and the line y = 8-2x. The line intersects the curve at points C and D. Lines AC and BD are parallel to the y-axis.



(a) Determine the coordinates of C and D. (4mks)

(b) Use integration to calculate the area bounded by the curve and the x-axis between the points C and D. (3mks)

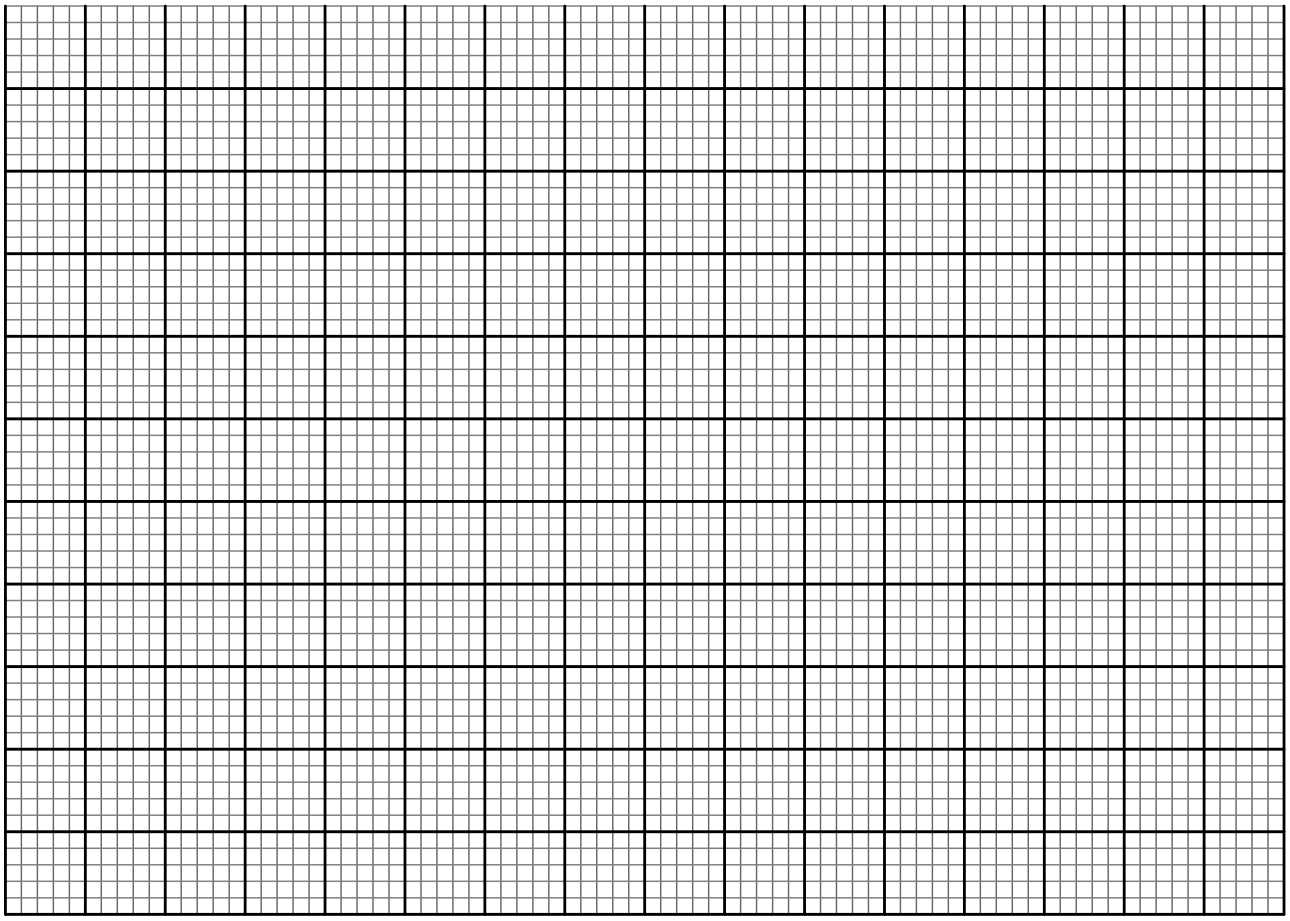
(c) Calculate the area enclosed by the lines CD, CA, BD and the x-axis. (3mks)

(d) Hence determine the area of the shaded region. (1mk)

24. A tailoring business makes two types of garments A and B. Garment A requires 3 metres of material while garment B requires 2 ½ metres of material. The business uses not more than 600 metres of material daily in making both garments. It must make not more than 100 garments of type A and nor less than 80 of type B each day.

(a) Write down three inequalities from this information other than $x \geq 0$ and $x \geq y$, where x is the number of garments of type A and y the number of garments of type B. (3mks)

(b) Graph these inequalities. (3mks)



(c) If the business makes a profit of sh 80 on garment A and a profit of sh. 60 on garment B, how many garments of each type must it make in order to maximize the profit and what is the total profit? (4mks)

End

NAME:……..INDEX NO:……

SCHOOL:…….. CANDIDATE SIGN:…...…….

DATE...…….

511/1
MUSIC
PAPER 1.
TIME: 20 minutes (per candidate)

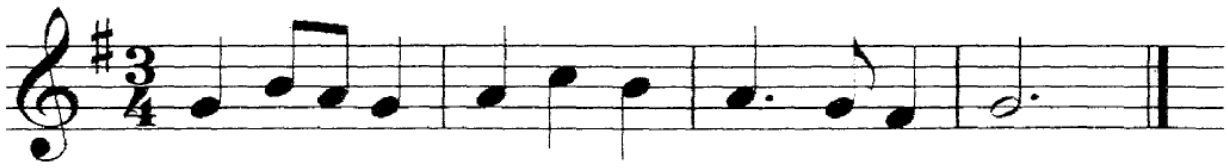
Kenya Certificate of Secondary Education (K.C.S.E)

511/1
MUSIC
PAPER 1.
TIME: 20 minutes (per candidate)

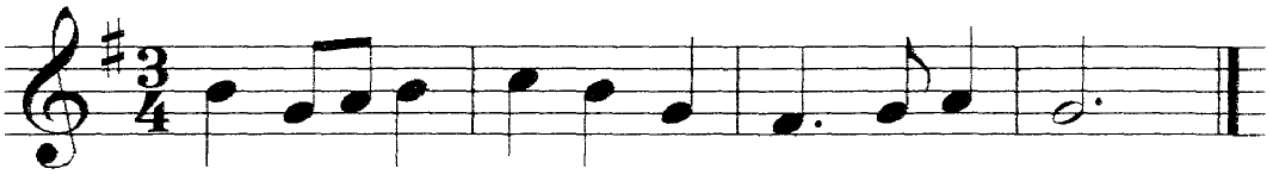
This paper consist of 2 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

VOICE

1.

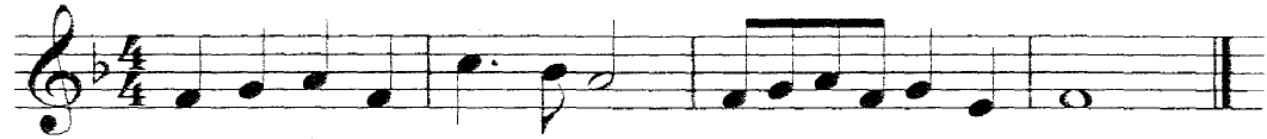


2.



RECORDER

3.



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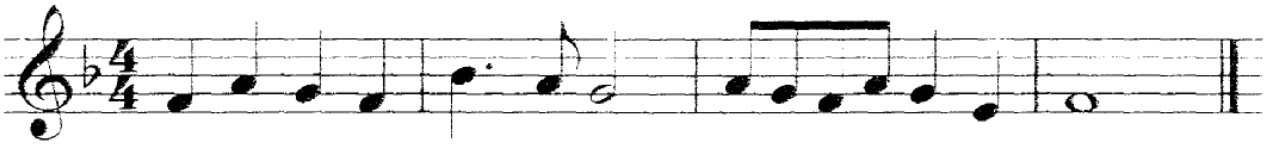
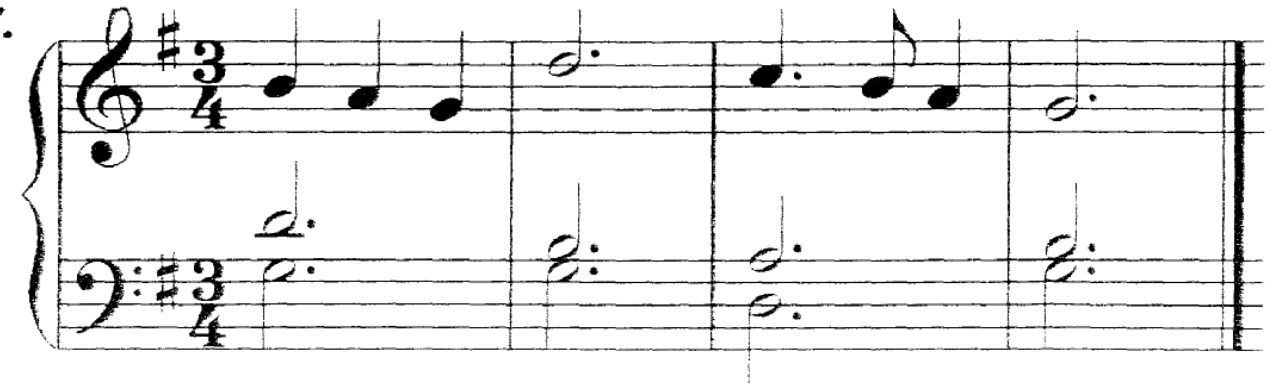


PIANO

5.



NAME:……..INDEX NO:……

SCHOOL:…….. CANDIDATE SIGN:…...…….

DATE...…….

511/2
MUSIC
PAPER 2.
TIME: 50 Minutes

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

511/2
MUSIC
PAPER 2.
TIME: 50 Minutes

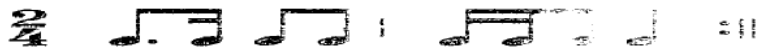
INSTRUCTION TO CANDIDATES

I. Answer all the questions in the manuscript paper provided.
II. The tape consists of questions one to five.

This paper consist of 2 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

1 RHYTHM

1 (a) Repetitive drum pattern.

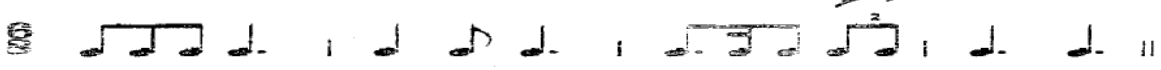


½ mark each correct beat with proper grouping	= 2 marks
Repeat mark at the end 1 mark	= 1 mark
Correct time signature ½ mark	= ½ mark
Bar lines ½ mark	= ½ mark
TOTAL	= 4 marks

1. (b

½ mark each correct note value with proper grouping	= 7 marks
Correct time signature ½ mark	= ½ mark
Bar lines ½ mark	= ½ mark
TOTAL	= 8 marks

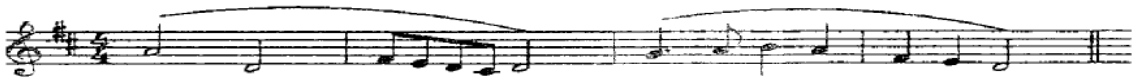
1. (c



½ mark each correct note value with proper grouping	= 7 marks
Correct time signature ½ mark	= ½ mark
Bar lines ½ mark	= ½ mark
TOTAL	= 8 marks

2. MELODY ON STAFF

2 (a



½ mark each correct note in value and pitch	= 7 marks
1 mark for phrasing as a whole	= 1 mark
½ mark correct key signature	= ½ mark
½ mark correct clef	= ½ mark
Correct time signature ½ mark	= ½ mark
Bar lines ½ mark	= ½ mark
TOTAL	= 10 marks

2 (b

Marks as 2a above = 10 marks

3. **(INTERVALS)** (i) minor 3rd (ii) major 6th = 3 marks

4 **(CADENCES)** (i) plagal ii interrupted iii imperfect iv perfect = 4 marks

5 **(MODULATION)** a) D major b) B flat major = 3 marks

NAME:……..INDEX NO:……

SCHOOL:…….. CANDIDATE SIGN:…...…….

DATE...…….

511/3
MUSIC
PAPER 3.
TIME: 2 ½ HOURS

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

511/3
MUSIC
PAPER 3.
TIME: 2 ½ HOURS

INSTRUCTION TO CANDIDATES

I. Answer all the questions in this paper.
II. In question 1, choose either (a) or (b)
III. In question 4 choose any two of the questions numbered a,b,c,or d.
IV. All answers must be written in the spaces provided.
V. This paper consists of questions one to seven

For examiners use only

QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
1	12	
2	20	
3	14	
4	14	
5	10	
6	10	
7	20	
TOTAL	100	

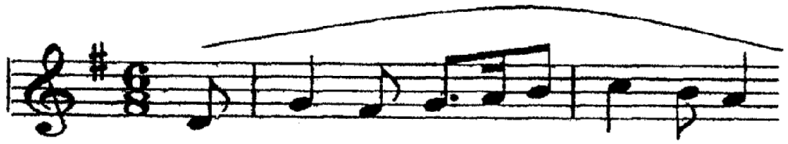
This paper consist of 4 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

Answer questions from ALL sections

SECTION A: BASIC SKILLS (32mks)

1. Either;

a) Continue the following opening to make a melody of sixteen bars for voice introducing modulation to the relative minor before returning to the tonic key. Incorporate a duplet and syncopation. Add phrase marks. (l2mks)

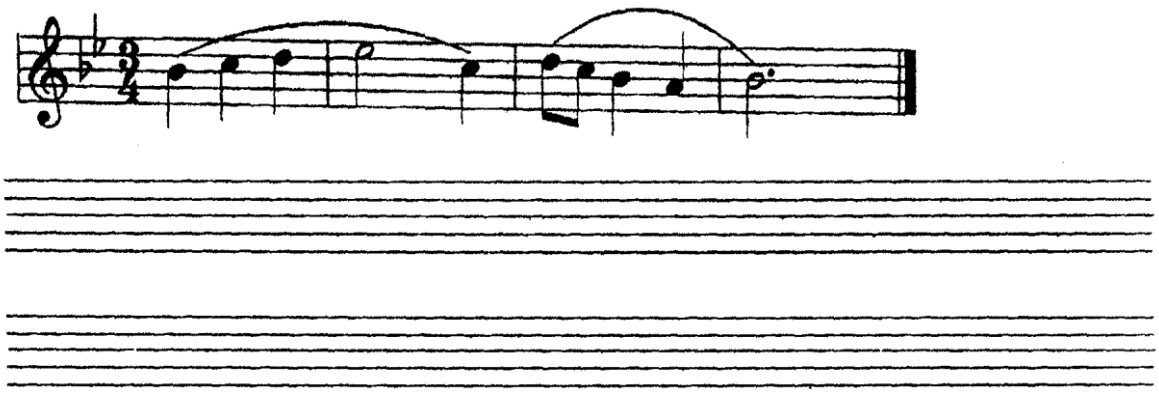


Or:

b) Using staff notation, write a tune to the following words. (12 mks)

Ishall remember while the light lives yet,
And in the night time I shall not forget.

2. Harmonize the following for soprano, alto, tenor and bass (SATB). Choose appropriate chords from the following I, II, IV, V, VI. (20mks)



SECTION B: HISTORY ANALYSIS (48mks)

3.. AFRICAN MUSIC

a) Identify flutes from the list below (3mks)

Thira	Oporo
Murenge	Ekeroria
Ebune	Nzumari

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b) i. From which community is Jackson Kisika? (lmk)

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ii. With which instrument is Charo Washutu associated? (1 mk)

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iii. Name the main person from whom Tungu Mamwacha acquired music skills (1mk)

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c) Outline three ways by which language influences music (3mks)

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d)i State **two** roles of make-ups in African dances (2mks)

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ii. Outline three causes of evolution of African dances in the Twenty First Century. (3mks)

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4. WESTERN MUSIC

Answer any two of the following questions (a),(b),(c) and (d).

a) William Byrd

i. What is an elegy? (l mk)

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ii. Outline **three** characteristics of the elegy for Talus which was composed by William Byrd. (3mks)

ii. Outline **three** contributions of Byrd to instrumental music. (3rnks)

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b) Alessandro Scarlatti

i. Name the period of music history in which A. Scarlatti lived. (lmk)

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ii. Outline three contributions of A. Scarlatti to sacred music, (3mks)

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iii. Outline three major achievements of A. Scarlatti as a musician. (3mks)

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c) Joseph Haydn

i. For what purpose did Haydn write each of the following? (2mks)

Emperor quartet

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Creation Oratorio

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ii. Outline three opportunities which enhanced Haydn's Musical development. (3mks)

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iii. What type of work is the Limping Devil? (lmk)

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iv. For whom did Haydn write the Limping Devil? (lmk)

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d) Antonin Dvorak

i. Define tone poem. (lmk)

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ii. Name two tone poems by Dvorak. (2mks)

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iv. Outline **four** experiences which enhanced Dvoraks musical development. (4mks)

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5. PRESCRIBED AFRICAN MUSIC
Borana Folksong by Gitabini Secondary School

i. For what media is the music in the recording? (2mks)

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ii. Describe four different singing styles displayed in the main section. (4mks)

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iii. State four roles of vocal embellishments in the performance. (4rnks)

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6. PRESCRIBED WESTERN MUSIC

Contrapunctus 4 from "The Art of Fugue by J.S. Bach"

i. Name the voices in order of entry in the middle section between bars 60 to 80. (2mks)

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ii. Outline **six** compositional devices used in Contrapunctus iv. (6mks)

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iii. Analyse Contrapunctus 4 in terms of rhythm from the first to the fourth bar. (2mks)

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SECTION C: GENERAL MUSIC KNOWLEDGE

a) i. Name **four** instruments of the string family of orchestra. (2mks)

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ii. What is chamber Ensemble? (lmk)

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iii. Define each of the following chamber ensemble. (2mks)

String Quartet

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Piano trio

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b) Outline any **five** characteristics of African Music. (5mks)

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c) i. In the following passage, explain *Andantino*; ben legato. (2mks)

Andatino

_____

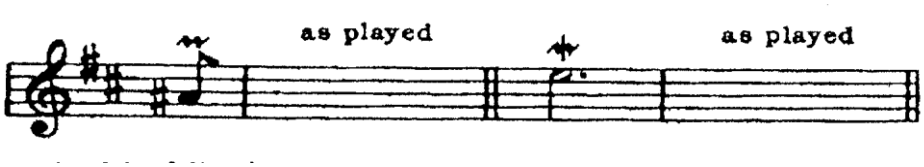
_____

Ben legato

_____

_____

iii. Write out the ornaments in bars 2 and 4 in full, showing how they should be played. (3mks)



d. Define each of the following terms. (5marks)

i. A transverse flute
ii. Double headed membranophone
iii. Terraced dynamics
iv. Melismatic Style
v. Coloratura.

NAME: ..... INDEX NO: .....

SCHOOL: ..... CANDIDATE SIGN: .....

DATE: .....

232/1
PHYSICS
PAPER 1
(THEORY)
TIME: 2 HOURS

Kenya Certificate of Secondary Education (KCSE)

232/1
PHYSICS
PAPER 1
(THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO THE CANDIDATE:

a) Write your name and index number in the spaces provided above.
b) Sign and write the date of examination in the spaces provided above.
c) This paper consists of two sections A and B.
d) Answer all the questions in section A and B in the spaces provided
e) All working must be clearly shown in the spaces provided.
f) Non-programmable silent electronic calculators and KNEC mathematical tables may be used.

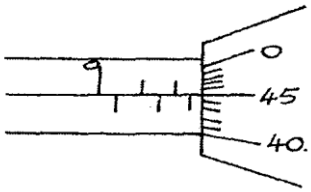
FOR EXAMINER'S USE ONLY:

Section	Question	Maximum score	Candidate's score
A	1-14	25	
	15	8	
	16	6	
B	17	8	
	18	11	
	19	11	
	20	10	
TOTAL SCORE		**80**	

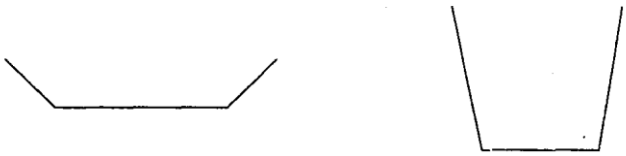
This paper consist of 12 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

SECTION A: (25 MARKS)

1. A student used the measuring instrument shown below to measure the thickness of a cylindrical wire, If the wire is 10cm long, find the volume of the wire. (3mks)



2. The figure below shows two containers of equal volume but of different diameters.



Equal volume of hot water was put in both containers. Explain why it cools faster in the Wider container than in the narrower one. (lrnk)

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……

3. A body in a uniform circular motion experiences acceleration despite moving at a constant speed. Explain. – (1mk)

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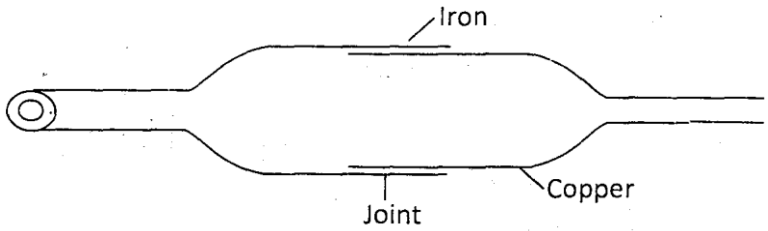
4. The diagram below shows a-metal tube made of iron and copper. The joint is tight at room temperature.



Explain how you would separate the two by changing the temperature given that copper expands more than iron for some change in temperature. (2mks)

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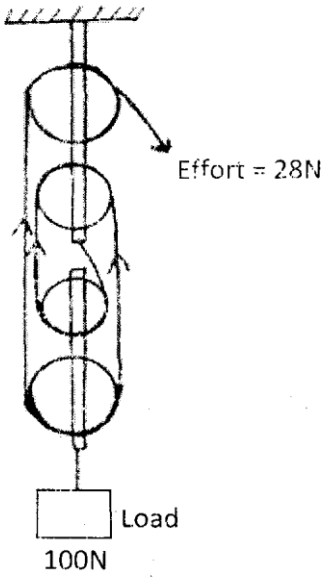
5. Figure below shows a pulley system being used to raise a lead.



if the effort applied is 28N and the load lifted is l00N, determine the efficiency of the system. (3mks)

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6. (a) What is surface tension? (1mk)

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(b) The figure below shows a funnel dipped into a liquid soap solution.

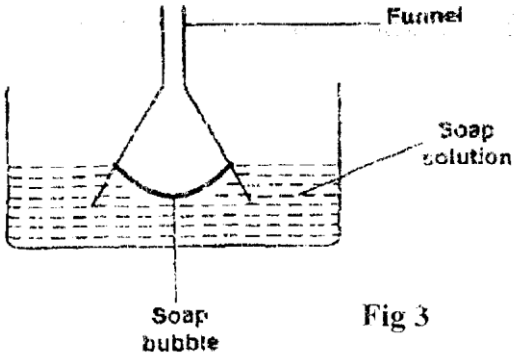

Fig 3

Explain what happens to the soap bubble when the funnel is removed. (1mk)

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……

7. A trolley of mass 0.5kg moving with a velocity of I .2ms^{-1} collides in elastically with a second trolley of mass 1.5kg moving in the same direction with a velocity of 0.2ms^{-1} .Determine the velocity of the trolleys after collision. (2mks)

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8. Highlight **one** fact which shows that heat from the sun does not reach the earth surface by convection. (1 rnk)

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9. State **one** reason why mercury is preferred as a barometric liquid and not water. (lmk)

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10. State **one** reason why racing cars are stable. (lmk)

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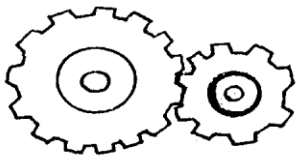
11. Find the velocity ratio of the following gear wheels. (2mks)



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12. A stone and a feather are dropped from rest from a building 20m tall. If they reach the ground at the same time, find.

(a) The velocity with which they reach the ground. (Take g=l0m/s^2) (2rnks)

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(b) The condition under which they fall. (lmk)

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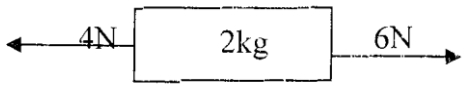
13. The forces act on a trolley as shown below.



Find the acceleration of the trolley. (2mks)

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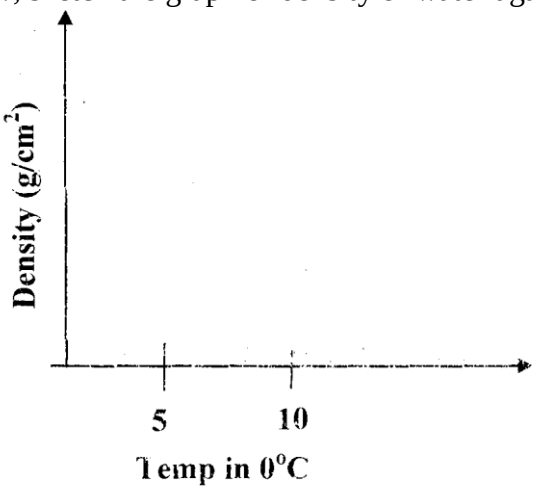
14. On the axes below, sketch the graph of density of water against temperature. (1mk)



SECTION B (55MKS)

15. (a) A car is negotiating unbanked circular track. State one factor that will determine the critical speed of the car. (1mk)

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(b) Given that the ear above has a mass of 1000kg and the circular path has a radius of 25m. Determine the maximum speed with which the motorist can travel so as not to skip the frictional force between the tyres and the road is 6500N. (3mks)

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(c) A 200g mass tied to a string is being whirled in a vertical circle of radius 32cm with uniform speed, At the lowest position the tension in the siring is 10.5N. Calculate:

(i) The speed of the mass (2mks)

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(ii) The tension in the string when the mass is at the uppermost position of the circular path (Take g = 10m/s^2) (2rnks)

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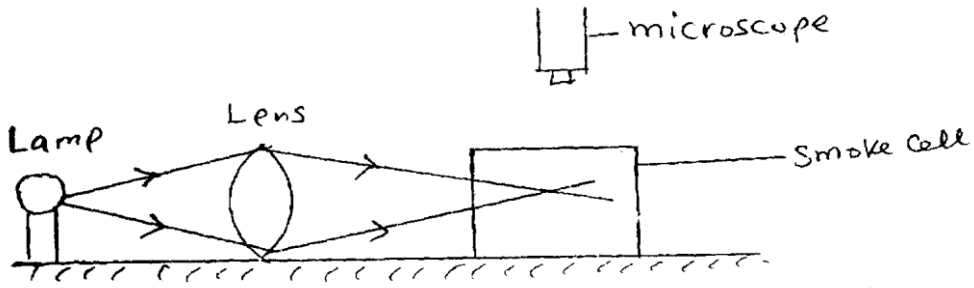
16. Brownian motion of smoke particles can be studied by using the apparatus shown in figure.7. To observe the motion, some smoke is closed in the smoke cell and then observe through the Microscope.

Fig.7



(a) Explain the role of the smoke particles, lens and microscope in the experiment.

(i) Smoke cell. (1 mk)

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(ii) Lens (1 mk)

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(iii) Microscope (lmk)

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(b) State and explain the nature of the observed motion of the smoke particles. (2rnks)

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(c) State what will be observed about the motion of the smoke particles if the temperature surrounding the smoke cell is raised slightly. (1 mk)

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17. (a) State what is meant by an ideal gas (1mk)

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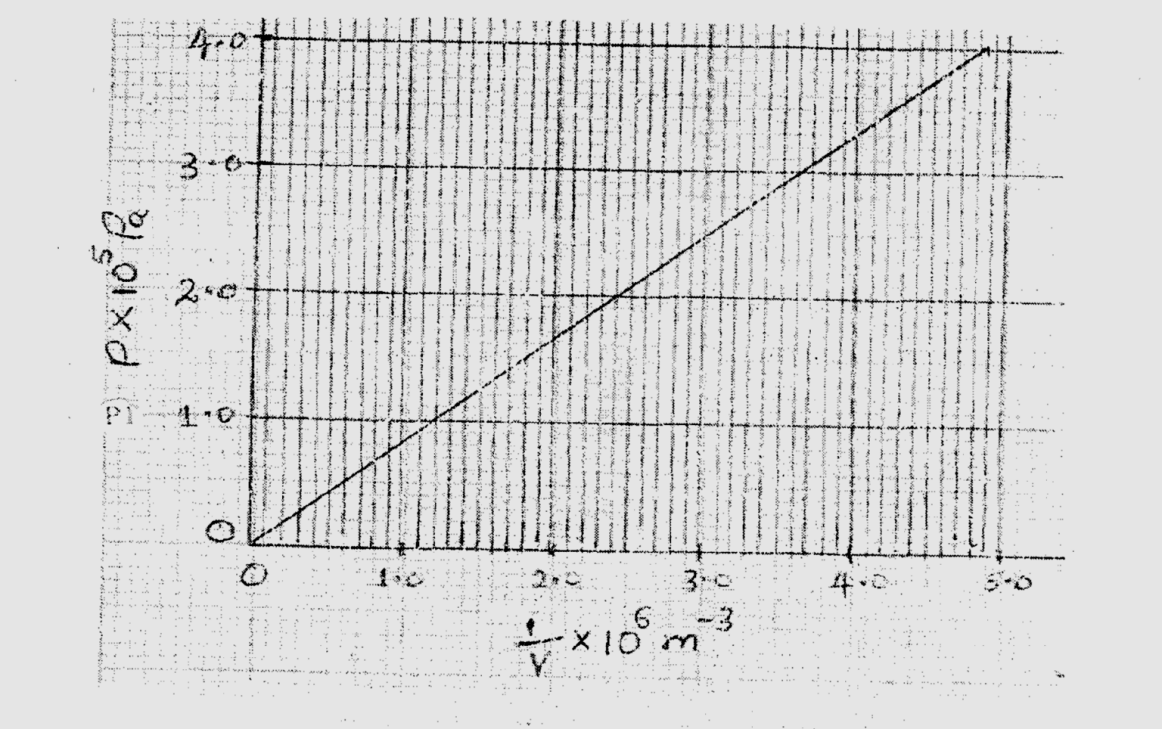
(b) The pressure acting in a gas in a container was changed steadily while the temperature of the gas was maintained constant. The value of volume V of the gas measured various values of pressure. The graph in the figure A shows the relation between the pressure. P1 and the reciprocal of volume 1/V



(i) Given that the relation between the pressure P1 and the value, V1 of the gas is given by PV = k Where k is a constant, use the graph to determine the value (3rnks)

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(ii) What physical quantity does **K** represent? (1mk.)

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iv) State **one** precaution you would take when performing such an experiment. (1mk)

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(c) A gas occupies a volume of 4000 litres temperature of 37°C and normal atmosphere pressure. Determine the new volume of the gas if it is heated at constant pressure to a temperature of 67°C (normal atmosphere pressure P = 1.01 x 10^5pa) (3marks)

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18. (a) State Archimedes Principal (lmk)

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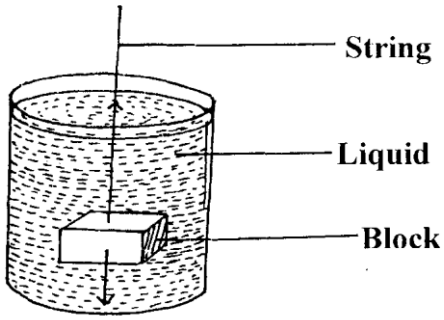
(b) The figure 9 shows rectangular metal block of density 10500kgm^{-3} and dimensions 30cm x 20cm x 20cm suspended inside a liquid of density 1 200kgm^{-3} by a string attached to appoint above the liquid. The three forces acting on the block are; the tension I. on the string, the weight W, of the block, and the up thrust ,U, due to the liquid.



(i) Write an expression relating T, U and W when the block is in equilibrium inside the liquid. (1 mk)

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(ii) Determine the weight, **W**. of the block (3 mks)

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(iii) Determine the weight of the liquid displaced by the fully submerged block. (2rnks)

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Hence determine the tension, 1, in the string (1mk).

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(c) A certain solid of volume 50cm^3 displaces 10cm^3 of kerosene) (density 800 kgrn^{-3}) when floating. Determine the density of the solid. (3mks)

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19. (a) Define angular displacement. (1 rnk)

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(b) A mass of 20 g is 14 cm from the centre of a compact disc rotating at 75 revolutions per minute. Determine:

i) the angular speed (2 mks)

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ii) the centripetal acceleration (2 rnks)

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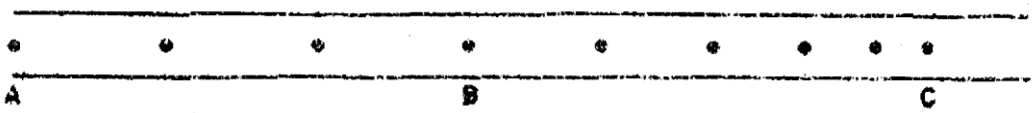
(c) Shown in the figure below are dots which were made by a ticker timer-tare attached to a trolley. Scale 1. 5



The frequency of the timer was 50 Hz. Determine for the trolley:

i) The velocities between AB and BC (3mk)

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ii) The deceleration of the trolley. (3mks)

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20. (a) What is meant by specific heat capacity? (1 mk)

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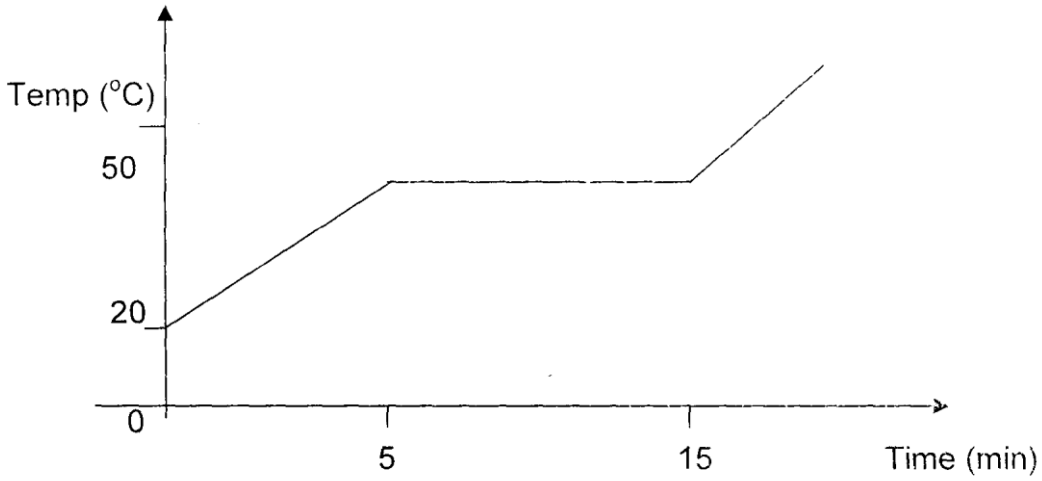
b) A heater rated 1 .25 kW is used to heat 3 kg of a substance which is initially in solid state.



Use the information in the graph to find:

i) the specific heat capacity of the substance in solid form. (3 mks)

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ii) the latent heat of fusion of the substance. (2 mks)

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iii) The time taken for the temperature to reach 90°C, assuming specific heat capacity does not change . (3 rnks)

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iii) Suggest a reason why the actual time may be longer. (1 mk)

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NAME: …….. INDEX NO: …….

SCHOOL: …….. CANDIDATE SIGN: ……

DATE: ……...

232/2
PHYSICS
PAPER 2
TIME: 2 HOURS

Kenya Certificate of Secondary Education (KCSE)

232/2
PHYSICS
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

*(a) Write your **name** and **index number** in the spaces provided above*
(b) Sign and write the date of the examination in the spaces provided above.
*(c) This paper consists of **two** sections **A** and **B**.*
*(d) Answer all questions in section **A** and **B** in the spaces provided.*
*(e) All working **must** be clearly shown.*
(f) Non-programmable silent electronic calculators and KNEC Mathematical tables may be used.
(g) This paper consists of 12printed pages.
(h) Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.
(i) ALL questions must be answered in English

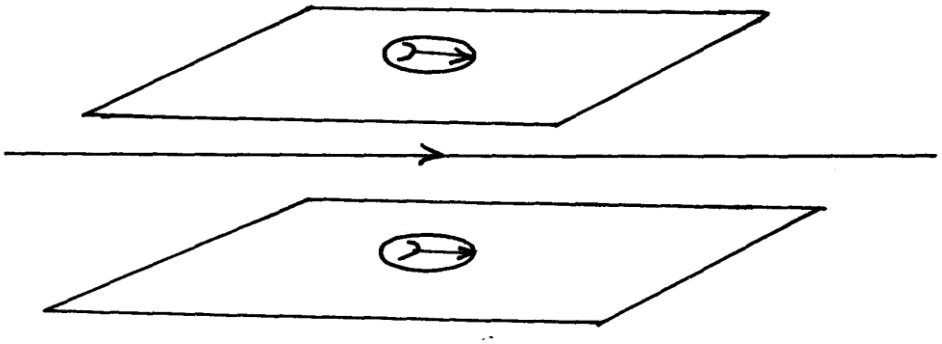
SECTION	QUESTION	MAX. SCORE	CANDIDATE SCORE
A	1-13	25	
B	14	15	
	15	12	
	16	9	
	17	10	
	18	9	
	TOTAL Score	80	

This paper consist of 12 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

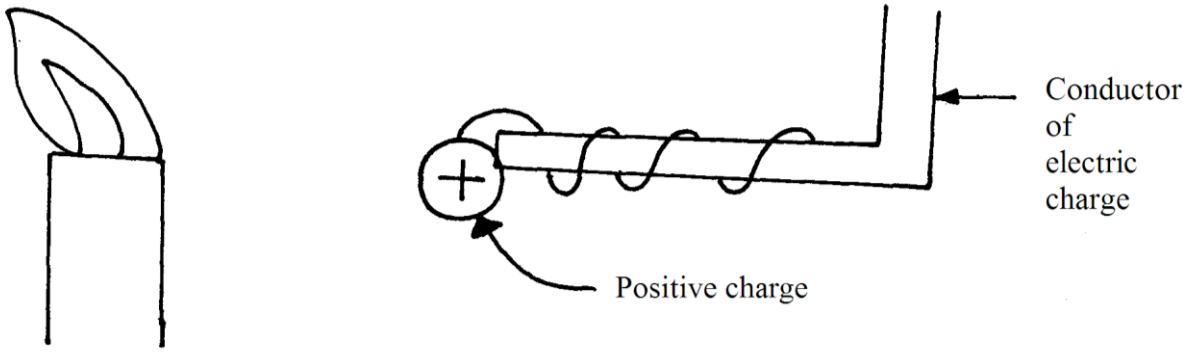
SECTION A (25 MARKS)

Answer **ALL** questions in this section in the spaces provided.

1. The figure below sow a current carrying conductor passing between two cardboards. Show the direction of the deflection on each compass on the cardboard. (2marks)



2. The figure below shows a thin wire connected to a charge generator and placed close to a candle flame.



Explain why the candle flame is deflected as shown. (2mks)

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3. Why is the metre bridge method a more accurate means of measuring resistance than Ammeter-voltmeter method. (1mark)

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4. State one factor which does not change as water waves moves from shallow deep end. (1mark)

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5. Calculate the cost of using a electricity iron rated 1200W, for a total of 30hours given that the cost of electricity per KWh is ksh8. (3mks)

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6. State one similarity between an image formed in a plane mirror and that in a convex mirror. (1mk)

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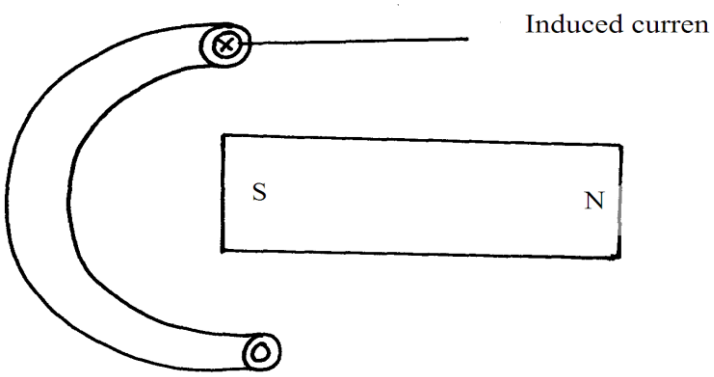
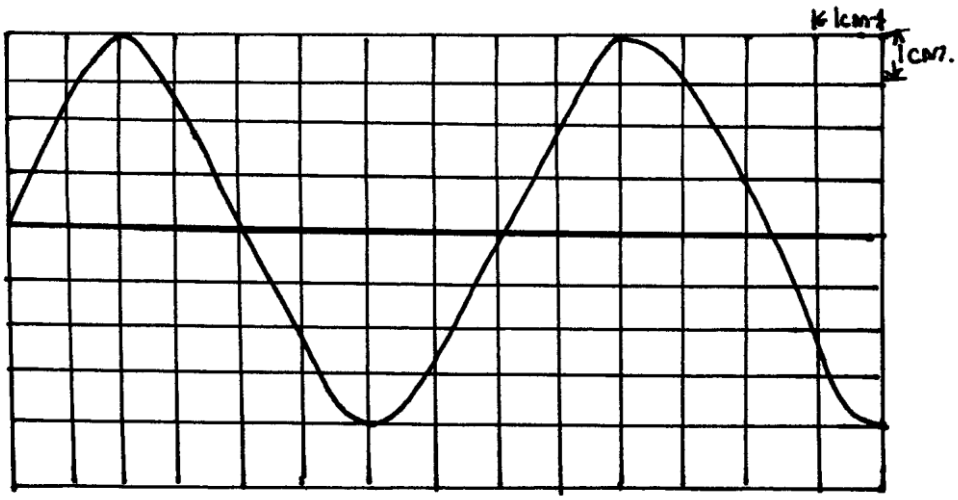
7. The figure below shows a circular conductor placed closely to a magnet. When the magnet is moved, a current is induced as shown. Indicate the direction of motion of the magnet. (1mark)



8. The figure below shows a CRO screen display trace when the Y-amplication control and time base setting are 100mV and 0.8ms/cm respectively.



Calculate:

a) The peak potential difference. (2marks)

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b) The frequency of the signal. (2 marks)

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9. Distinguish between an intrinsic semiconductor and an extrinsic semiconductor and give one example for each. (3marks)

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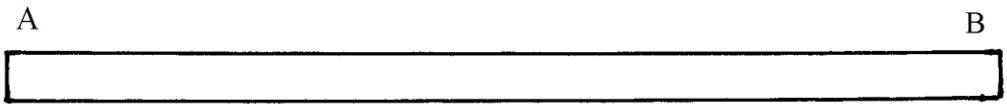
10. You are provided with a long steel rod shown below.



Using a diagram, describe hoe you would magnetise end A to obtain a south pole using an electric current. (2marks)

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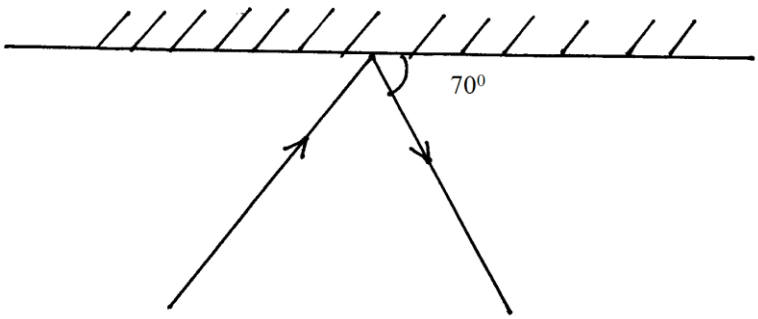
11. Determine the angle of incidence and angle of reflection in the mirror shown below. (2marks)



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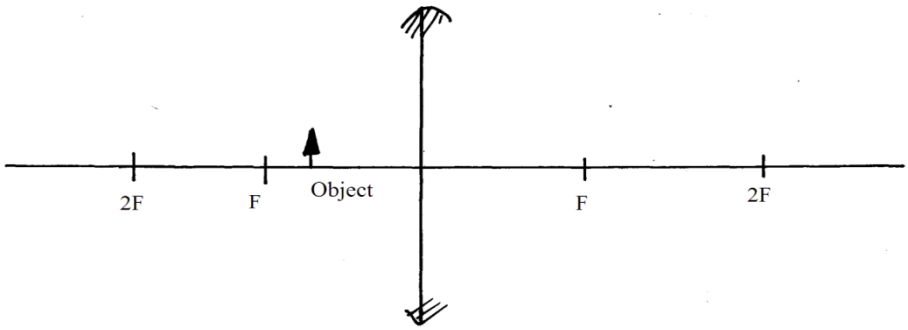
12. Complete the ray diagram below and state one characteristic of the image formed by the following convex base. (3marks)



13. Various isotopes of an element X can be distinguished by using the symbol ${}^{A}_{z}X$, what do the symbols A and Z stand for. (1mark)

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SECTION B (55 MARKS)

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

14. a) X-rays are used for detecting cracks inside metal beams:

State the type of X-rays used. (1mark)

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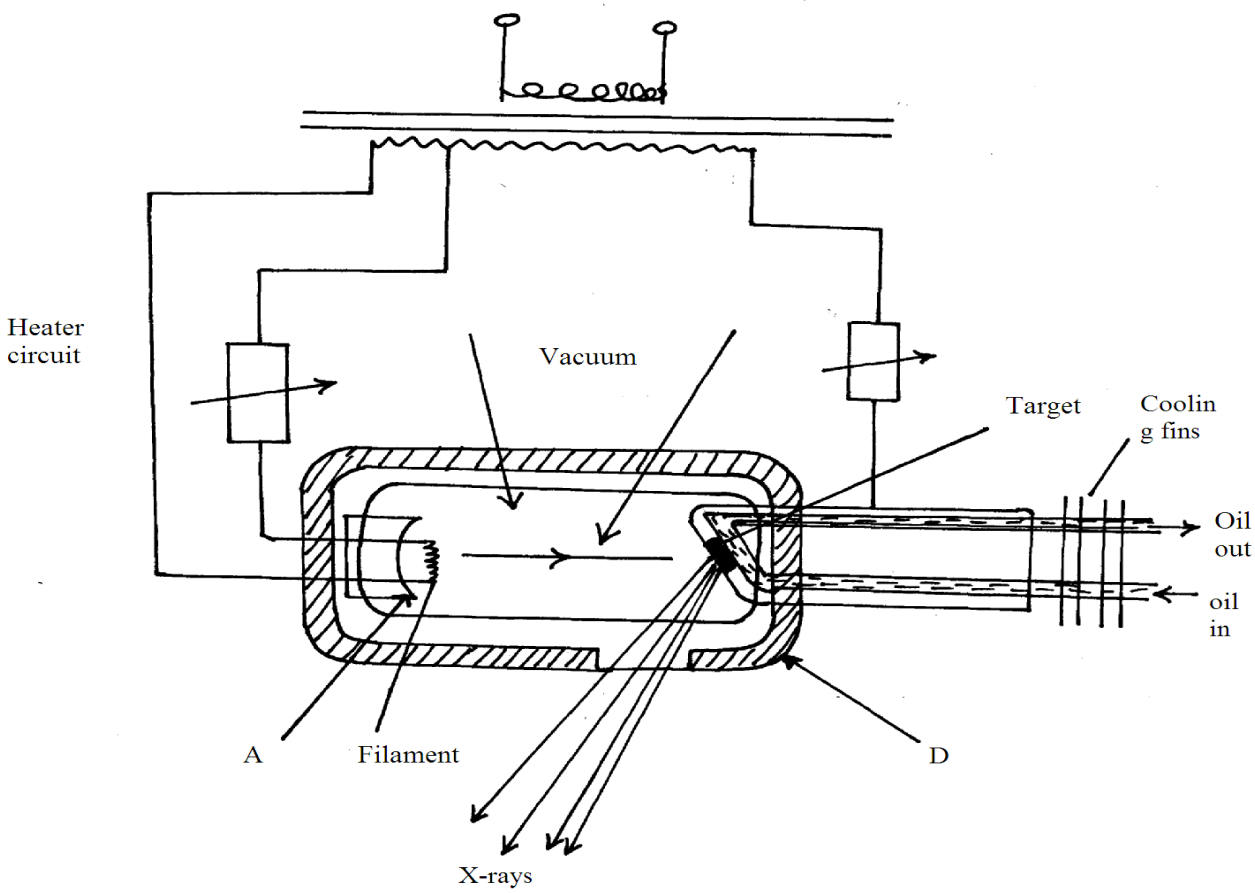
b) The figure below shows the feature of an X-ray tube.



i) Name the parts labelled A,B,C,D. (2marks)

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ii) Explain how X-rays are produced in the tube. (3marks)

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iii) During the operation of the tube, the target becomes very hot explain. (2marks)

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iv) Name one feature of the X-ray tube which makes it possible for heat to be conducted away safely without causing overheating. (1mark)

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v) Explain the use of X-ray in textile industries. (3marks)

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vi) The frequency of X-rays ranges from $3.0x10^{16}$Hz to $3.0x10^{19}$Hz. determine the range of wavelength . (take C =$3.0x10^{8}$m/s) (3marks)

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15. a) What is photoelectric effect? (1mark)

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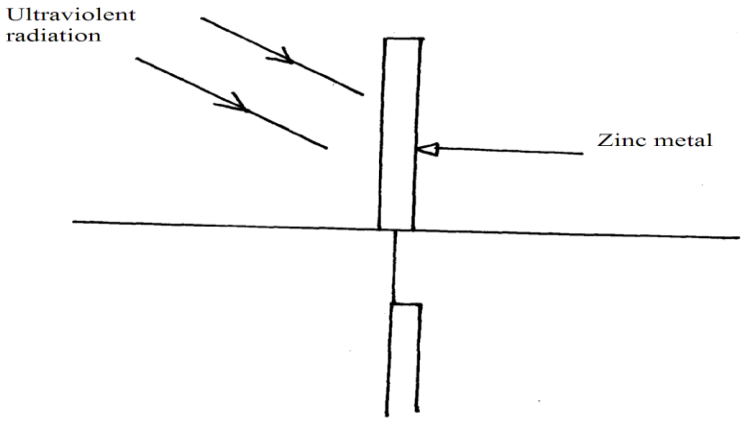
b) Some students used the following setup to show the effect of illuminating an uncharged electroscope with ultra violent radiation.



i) Before the students began the experiment, they cleaned the zinc metal. Why was this necessary? (1mark)

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ii) Explain briefly what the students observed (3marks)

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c) i) Draw a sketch graph of stopping potential against frequency of incident radiation (2marks)

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ii) On the same graph label the threshold frequency (1mark)

iii) Explain what is meant by stopping potential(Vs) (1mark)

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d) When electromagnet radiation of wavelength $4.0x10^{-7}$ is incident on a metal surface, a stopping potential of 0.75V is just sufficient to prevent the emission photoelectrons. determine the maximum kinetic energy of the emitted electrons when the stopping potential is zero (3marks)

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16. a) State the first law of refraction (1mark)

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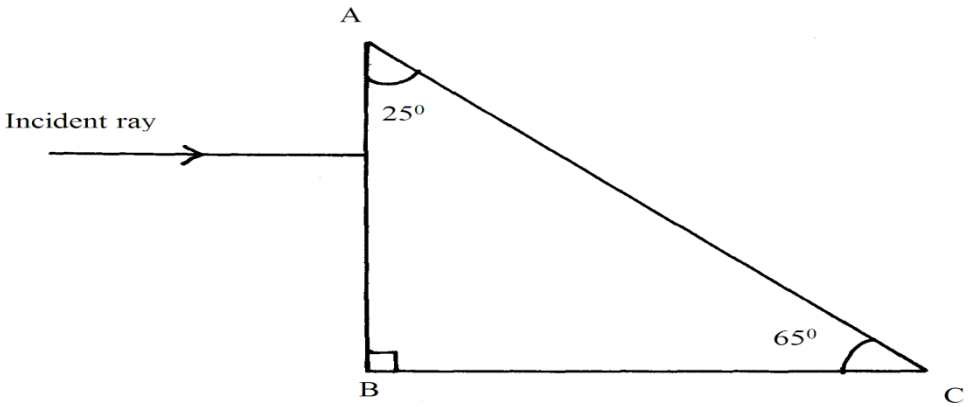
b) The diagram below shows a glass prism and an incident ray striking the face marked AB



i) Indicate on the diagram the path of the emergent ray. (2marks)

ii) Calculate the angle of refraction(r) of the resultant ray given the refractive index of glass is 1.5 (3marks)

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c) Find the angle through which the ray is deviated. (2marks)

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d) Explain why the ray is not totally internally reflected (1mark)

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17. a) Sketch a graph of displacement against time for a transverse wave of frequency of 50Hz of at least two cycles with amplitude 2cm. (4marks)

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b) Distinguish electromagnetic waves and mechanical waves (2marks)

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c) A pulse-echo sounder is used by fishing boat to locate a shoal of fish in water. The sounder sends sound of frequency 21KHz and wavelength of 7.5cm. if the echo is received after 0.4seconds, determine how far the shoal of fish is from the base of the boat. (4marks)

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18. a) The figure below shows how two magnets are stored in pairs with keepers at the ends.

Explain how the keeper keeps the magnets from demagnetisation. (2marks)

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b) Explain magnetic saturation using domain theory. (2 marks)

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c) The figure below is that of an electric horn.

(Diagram)

i) Explain how it works. (3marks)

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ii) Explain how performance of the horn can be improved without changing its material make –up (2marks)

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NAME: …….. INDEX NO: ……...

SCHOOL: ……. CANDIDATE SIGN: …….

DATE: ……...

232/3
PHYSICS
(PRACTICAL)
PAPER 3
TIME: 2 HOURS

Kenya Certificate of Secondary Education (KCSE)

232/3
PHYSICS
(PRACTICAL)
PAPER 3
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Answer all the questions in the spaces provided
2. Mathematical tables and electronic calculators may be used.
3. All workings MUST be clearly shown necessary.

For examiners use only

QUESTIONS	MAX.SCORE	CANDIDATE SCORE
1	21	
2	19	
Total score	40	

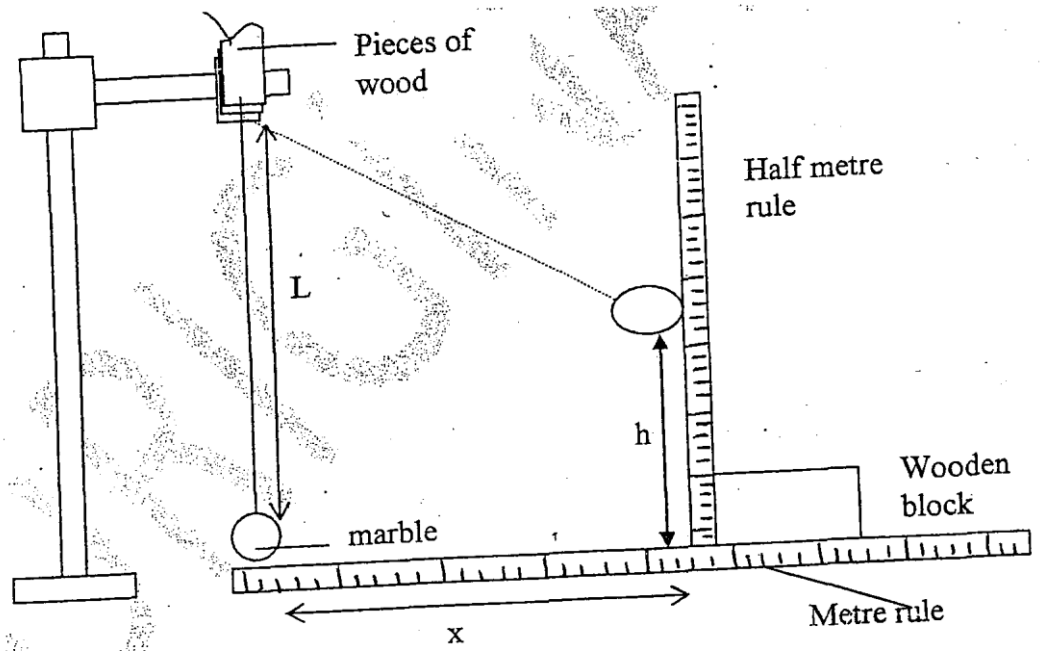
This paper consists of 6 printed pages.
Candidates should check the question paper to
Ensure that all the pages are printed as indicated and no questions are missing.

1. You are provided with;
   (a) A Marble with a piece of the thread attached.
   (b) Two wooden blocks.
   (c) Clamp, stand + boss
   (d) Metre rule.
   (e) ½ metre rule supported on a wooden block.
   (f) 2 pieces of cellotape.
   (g) Stop watch.

Procedure:

(I) Fix the thread between the wooden blocks and fasten in the clamp. Adjust the thread so that the length, L, shown in the figure below is 50cm.

(II) Fix the metre rule horizontally to the bench using the cello tape provided.



(III) Adjust the clamp so that the marble is next to the end of the metre rule as shown above.

(IV) Displace the marble by a horizontal distance X20cm and measure the corresponding vertical displacement h=_____ cm. (1mark)

(V) Repeat the experiment to find h for each of the following values of X and complete the table.

X cm	h(cm)	X^2cm^2	X^2/h cm
20			
25			
30			
35			
40			
45			

(6mks)

(VI) plot a graph X^2/h against h.
(give the grid/draw grid)

(VII) Determine the slope of the graph. (2mks)

(VIII) From the graph find the value of $X^{2/}h$ when h=0 (2mks)

(IX) With the metre rule and half-metre removed — Displace the marble through a horizontal distance of about 10cm and let it to swing freely, Time 20 oscillations.

Time for 20 oscillations _____ (lmk)

(X) Determine periodic time , T

Periodic time, T=_____ (1 mk)

(XI) Calculate the value of P from the following equations. (4mks)

$T=2\pi\sqrt{p/g}$ g= 10m/s

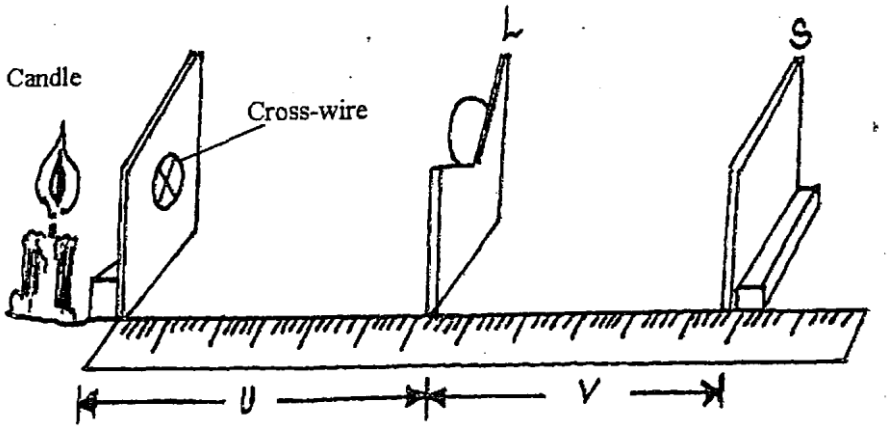
2. You are provided with the following apparatus
- A metre rule
- A log of plasticine
- Bi convex lens
- A candle
- A lens holder
- Across wire mounted on a cardboard
- A white screen

(a) Determine the focal length of the lens using a distance object.

F=…….. (lmk)

(b) Briefly explain the method you have used above. (2mks)

c) Set up the apparatus as shown



(d) Starting with u=30cm, vary the position of the screen S until a sharp image of the cross wire is observed on the screen. Measure and record the value o the image distance v.

(e) Repeat the experiment above for other values of u35cm, 40cm, 50cm, and 55cm

U (cm)	30	35	40	45	50	55
V (cm)						
$M = \frac{v}{u}$						

(f) Plot a graph of M against v (5marks)

(g) Determine the slope of the graph (2mks)

(h) The equation of the graph is given by $M = \frac{v}{f} - 1$

Use the graph to obtain the value of f (2mks)

NAME:..... **INDEX NO:**.....

SCHOOL:..... **CANDIDATES SIGNATURE:**.....

DATE:.....

443/1
AGRICULTURE
PAPER 1
TIME: 2 HOURS

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

443/1
AGRICULTURE
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

(a) Write your name and index number in the spaces provided at the top of this page
(b) Sign and write the date of this examination in the spaces provided above.
(c) This paper consists of ***three*** sections: ***A, B*** *and* ***C***
(d) Answer ***ALL*** the questions in ***section A*** and **B**
(e) Answer any **two** questions from section C
(f) All questions should be written in the spaces provided on this question paper.
(g) Answer all questions in English

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAX. SCORE	CANDIDATE'S SCORE
A	1-14	30	
B	15-19	20	
C	20	20	
	21	20	
	22	20	
TOTAL		**90**	

This paper consists of 12 printed pages.
Candidates must check to ascertain that all pages are printed as indicated and that no question(s) is/are missing.

SECTION A (30 MARKS)

Answer all questions in the spaces provided

1. (a) Give the meaning of the following terms.

   (i) Plantation farming (1mk)

   ……..

   ……..

   (ii) Large scale farming (1mk)

   ……..

   ……..

   (b) Give two reason why ranching is important in the arid and semi- arid areas of Kenya. (1mk)

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2. (a) State one reason why farmers should carefully consider the following factors before selecting a tool or implement for land preparation.

   (i) Type of tilth (1mk)

   ……..

   ……..

   (ii) Cost of the tool or implement. (1mk)

   ……..

   ……..

   (b) List two tertiary operations carried out during land preparation. (1mk)

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3. Name two climatic factors which influence the rate of soil formation. (1mk)

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4. Outline two ways through which rough soil texture influence crop production. (1mk)

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5. State one role of humus in the soil. (1mk)

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6. Name two processes through which carbon is returned to the atmosphere in the carbon cycle. (1mk)

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7. Name two methods of layering. (1mk)

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8. State one difference between Topping and Top-dressing. (1mk)

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9. State two factors which would lead to the occurance of blossom-end disease in tomatoes. (1mk)

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10. (a) State two objectives of land redistribution in Kenya. (1mk)

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(b) State four functions of a manager on the farm. (2mks)

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11. Name two pests which attack stems of crops. (1mk)

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12. Give four cultural crop disease control measures. (2mks)

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13. Name four financial documents which can be kept in an Agricultural farm. (2mks)

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14. Name any two post harvest practices. (2mks)

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15. List four environmental factors that affect the effectiveness of herbicides. (2mks)

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16. Mention four ways of improving land as a factor of production. (2mks)

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17. Give four ways of improving labour in the farm. (2mks)

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18. Name two methods of harvesting agro forestry trees. (1mk)

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SECTION B (20 MARKS)

Answer all questions in this section

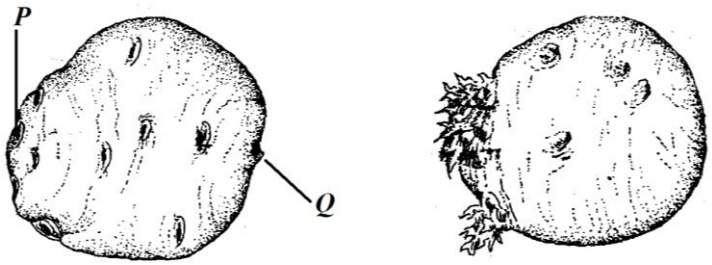
19. The table below shows a relationship between marginal revenue and marginal cost, for the maize crop produced at the DAP fertilizer cost of Ksh 300 per 10kg bags.
The crop was harvested and sold at Ksh 200 per 20kg bag.

DAP Fertilizer in (10kg bag)	Maize yield in (20kg bag)	Total revenue (Ksh)	Total cost (Ksh)	Marginal Revenue (Ksh)	Marginal cost (Ksh)
0	10.5				
1	20.5				
2	42.5				
3	58.5				
4	60.0				
5	60.5				
6	58.5				
7	56.0				

(a) Calculate the total revenue when 3 bags and 4 bags of DAP fertilizer were applied.
(1mk)

(b) Calculate the marginal revenue at the level 2 and 3 of DAP fertilizer application. (2mks)

20. Below is a figure showing a planting material which has been fully prepared for planting. Study it carefully and use it to answer the questions that follow;



(a) Name the method that was used to prepare the material drawn above. (1mk)

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……

(b) Name the parts of the diagram labeled

P ……..

Q……..

(c) State one advantage the farmers realized after using the above planting material. (1mk)

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21. A farmer applied two sets of fertilizer during planting and top-dressing. When planting he applied NPK (25:20:15) and Urea (46:5:0)

(a) Explain briefly the meaning of figures NPK (25:20:15) (3mks)

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(b) Giving a reason classify the two types of fertilizer the farmer applied on his farm. (4mks

Fertilizer	Class	Reason
NPK (25:20:15)		
Urea (46:5:0)		

22. Use the figure below to answer the questions that follow.

(a) Identify the pest illustrated in the figure above. (1mk)

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(b) State one symptom of damage shown on the crop that helped you to identify the pest. (1mk)

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(c) State the most effective method that can be used to control the pest. (1mk)

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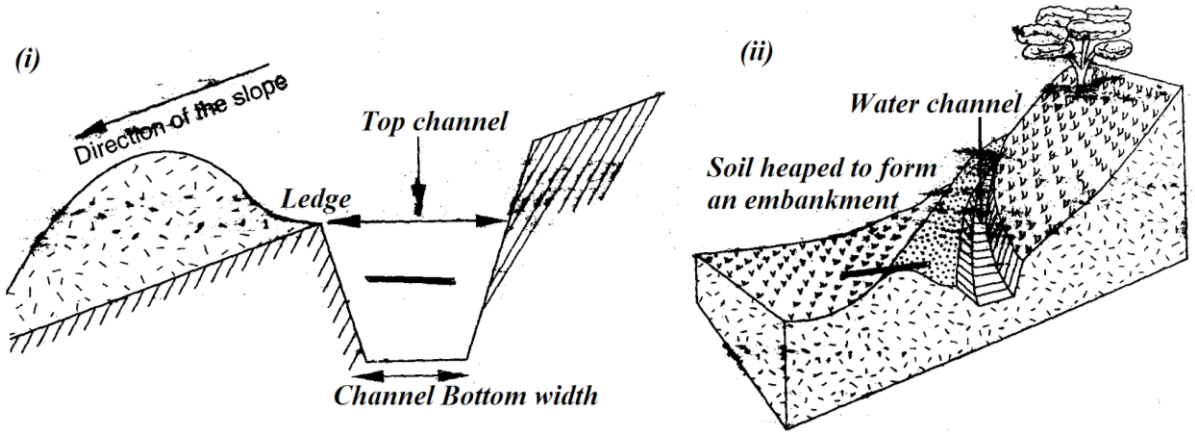
23. The diagrams below shows two different types of terraces used to control soil erosion. Study them carefully and answer the questions that follow;



(a) Identify terrace;

(i) ……

……

(ii) ……

……

(b) Give the width of

(i) Top channel =

(ii) Bottom channel = (1mk)

SECTION C

Answer any two questions in the spaces provided after question 22.

24. (a) Explain five reasons for controlling weeds. (10mks)

(b) Outline the four steps followed in hay making. (4mks)

(c) Explain the importance of Agro forestry trees. (6mks)

25. (a) Describe the production of millet under the following sub headings.

(i) Land preparation (3mks)

(ii) Planting (4mks)

(iii) Harvesting (3mks)

(b) Describe the following economic laws and principles of agricultural economics

(i) The law of Diminishing Returns (2mks)

(ii) The principle of profit maximization. (2mks)

(iv) The law of substitution. (2mks)

(c) Explain briefly how the following factors influence agriculture;

(i) Biotic factors. (2mks)

(ii) Government policy. (2mks)

26. (a) Explain why the following places should be considered during soil sampling.

(i) Cattle bomas. (2mks)

(ii) Water ways (2mks)

(b) Outline four factors considered when selecting a good nursery site. (4mks)

(c) Describe the soil sampling procedure (6mks)

(d) Explain six reasons why farmers need to keep good farm records. (6mks)

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End

NAME:..... **INDEX NO:**.....

SCHOOL:..... **CANDIDATES SIGNATURE:**.....

DATE:.....

443/2
AGRICULTURE
PAPER 2
TIME: 2 HOURS

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

443/2
AGRICULTURE
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

(a) Write your name and index number in the spaces provided at the top of this page
(b) Sign and write the date of examination in the spaces provided above.
(c) This paper consists of ***three*** sections: ***A, B*** *and* ***C***
(d) Answer ***ALL*** the questions in ***section A*** and **B**
(e) Answer any **two** questions from section C
(f) All answers should be written in the spaces provided on this question paper.

FOR EXAMINER'S USE ONLY

SECTION	QUESTION	MAX. SCORE	CANDIDATE'S SCORE
A	1-18	30	
B	19-23	20	
C	24	20	
	25	20	
	26	20	
TOTAL		**90**	

This paper consists of 12 printed pages.
Candidates must check to ascertain that all pages are printed as indicated and that no question(s) is/are missing.

SECTION A (30 MARKS)

Answer all questions in the spaces provided

1. List four routes through which pathogens can enter the body of a newly – born calf. (2mk)

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2. List four duties of a worker bee in a colony. (2mks)

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3. Identify the following breeds of livestock (2mks)

(i) A pig breed with dashed face, erect ears and white in colour

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(ii) A beef breed cream white in colour usually very heavy its males weighing upto 200kg.

……..

……..

(iii) A white breed of goat usually with long hair.

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(iv) A wool sheep with long curl wool usually cover its face

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4. Outline four signs of heat in sows. (2mks)

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5. Name two tools used to trim hooves. (1mk)

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6. List three precautions taken when seasoning timber by air for construction. (1½ mks)

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7. Give two reasons for raddling in sheep management. (1½ mks)

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8. Name three methods that are used in selecting of breeding stock in livestock production. (1½ mks)

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9. Outline four factors that influence the stocking rate in a fish pond. (2mks)

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10. Outline four factors that influence the stocking rate in a fish pond. (2mks)

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11. State four factors that would contribute to the depreciation of a farm equipment. (2mks)

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13. State two desirable qualities of a livestock ration. (1mk)

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14. Name four livestock diseases caused by Mruses. (2mks)

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15. (a) Differentiate between a roughage and a concentrate feed in animal nutrition. (1mk)

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(b) State two analities of a creep feed that makes it suitable for piglets. (1mk)

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16. Outline four daily maintenance services carried out on a tractor. (2mks)

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17. State two preventive measures for bloat. (1mk)

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18. State four livestock management practices carried out in a crush. (2mks)

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SECTION B (20 mks)

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

19. The diagram below illustrates a livestock deficiency disease. Study the diagram and answer the questions that follow:-

(a) Identify the disease (½ mk)

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(b) Identify the deficient nutrient. (½ mk)

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(c) Apart from the head refraction, state two other symptoms of the deficiency disease in (a) above. (2mks)

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(d) State one role of the nutrient named in (b) above. (1mk)

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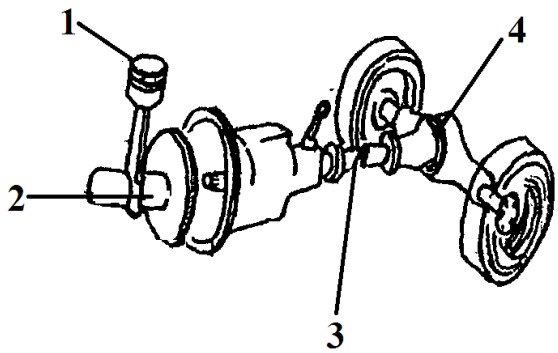
20. Study the diagram below that shows the power transmission system in a tractor engine.



(i) Label the parts 1 – 4 . (2mks)

1……

2……

3……

4……

(ii) What technical term is used to refer to attaching an implement to a tractor. (1mk)

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(iii) Name two types of linkage on a tractor. (1mk)

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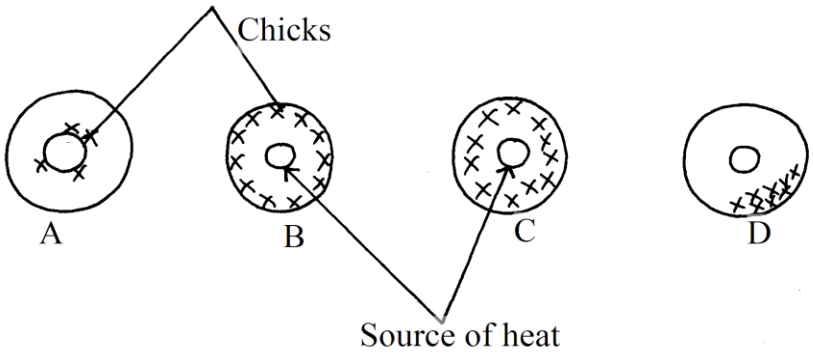
21. The following illustrations show the behavior of chicks at different temperatures in a brooder.



(a) Explain the temperature conditions in each of the four diagrams A, B, C and D. (2mks)

A……

B……

C……

D……

(b) State any four requirements of a good brooder. (2mks)

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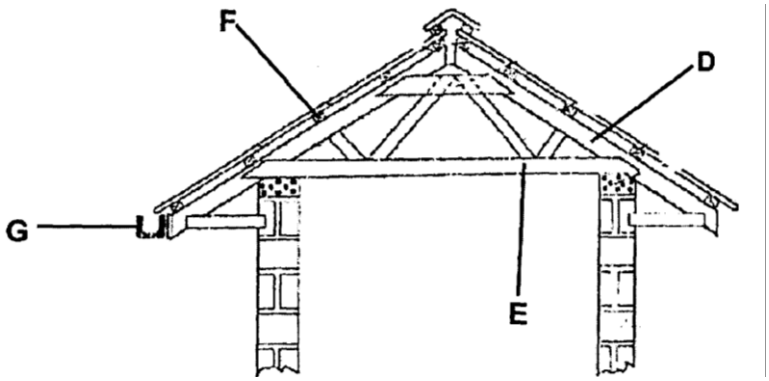
22. Study the illustration below and answer the questions that follow.



(a) Identify the parts D, E, F and G

D……

E……

F……

G……

(b) State two uses of the part F. (1mk)

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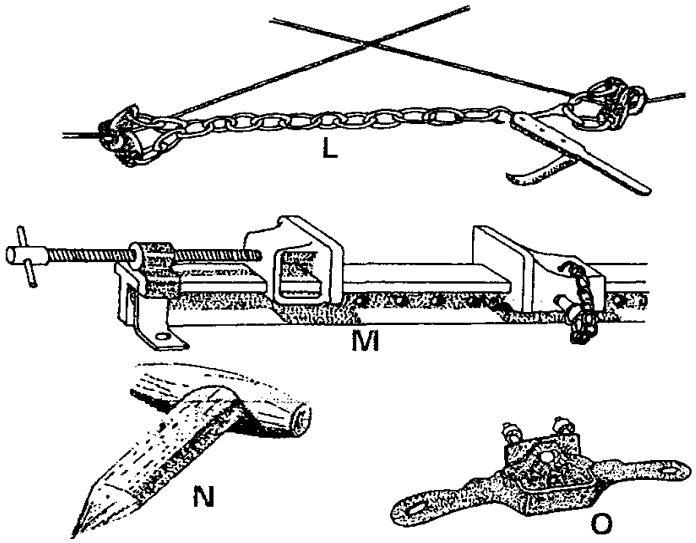
23. L, M, N and O are diagrams of farm tools. Study them and answer the questions that follow.



(i) Identify the farm tools L, M, N and O (2mks)

L……

M……

N……

O……

(ii) State the use of each of the tools L, M, N and O. (2mks)

L……

M……

N……

O……

SECTION C (40 Marks)

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

24. (a) Explain the importance of keeping livestock healthy. (7mks)

(b) Give five effects of internal parasites in livestock. (5mks)

(c) Describe the functions of the various types of pens in a piggery unit. (8mks)

25. (a) Explain the procedure of harvesting honey. (5mks)

(b) Explain the factors considered when culling breeding boar. (5mks)

(c) Describe poultry management under the following subheadings.

(i) Causes of stress (5mks)

(ii) Control measures for cannibalism. (5mks)

26. (a) Describe the procedure of constructing a barbed wire fence. (10mks)

(b) Describe the management of piglets from birth to weaning. (10mks)

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End

NAME:.....INDEX NO.:.....

SCHOOL:.....CANDIDAES SIGNATURE:.....

DATE:.....

231/1
BIOLOGY
PAPER 1.
THEORY
TIME:

Kenya certificate of secondary education (K.C.S.E)

231/1
BIOLOGY
PAPER 1.
THEORY
TIME:

Instructions to candidates.

a) Write your name and index number in the spaces provided above.
b) Sign and write the examination date .
c) Answer all the questions in the spaces provided in the question paper.

This paper consists12 of printed pages
Candidates should check to ascertain that all pages are printed as indicated and that no question is missing.

1. State ways by which synaptic transmission can be stopped. (2mks)

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2. State two advantages which the endothermic (homoethermic) have over those that are exothermic (poikilothermic). (2mks)

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3. a) State one function of red blood cells. (1mk)

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.....

b) Give two structural difference between red blood cells and white blood cells. (2mks)

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4. Hairs and leaves of sundew, an insectivorous plant curl around and trap insects when they land on the plant.

a) Identify the response shown sundew plants (1mk)

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b) Explain the biological importance of the response in (a) above. (2mks)

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c) Name any one type of neurons. (1mk)

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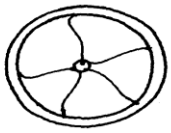
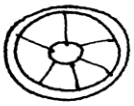
5. The diagram below gives an external view of the structure of the human eye observed outdoor at midday and midnight.



K



L

a) Which diagram represents the eye as observed during the day? (1mk)

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

.....

.....

6. A student viewed and drew a plant cell of a diameter 4mm using a light microscope whose eye piece lens was marked x1 and objective lens marked x5. How many cells were linearly arranged along the microscope's field of view whose diameter was 8mm .

(show your working) (3mks)

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7. Identify the nucleic and whose base sequence is shown below.

G-A-C-U-A-G-A-C-G

i) Identify the type of nucleic acid as shown below (1mk)

.....

.....

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

.....

.....

iii) Write the base sequence of the DNA strand shown above (1mk)

.....

.....

8. State the function of the following parts of a microscope (3mks)

i) Nose piece.

.....

ii) Condenser.

.....

iii) Diaphragm.

.....

9. Identify the mode of feeding of the animal whose dental formula is given below.

$i\frac{0}{3}, C\frac{0}{1}, Pm\frac{3}{3}, M\frac{3}{3} = 32.$

a) Mode of feeding (1mk)

.....

.....

b) Give a reason for your answer in (a) above. (2mks)

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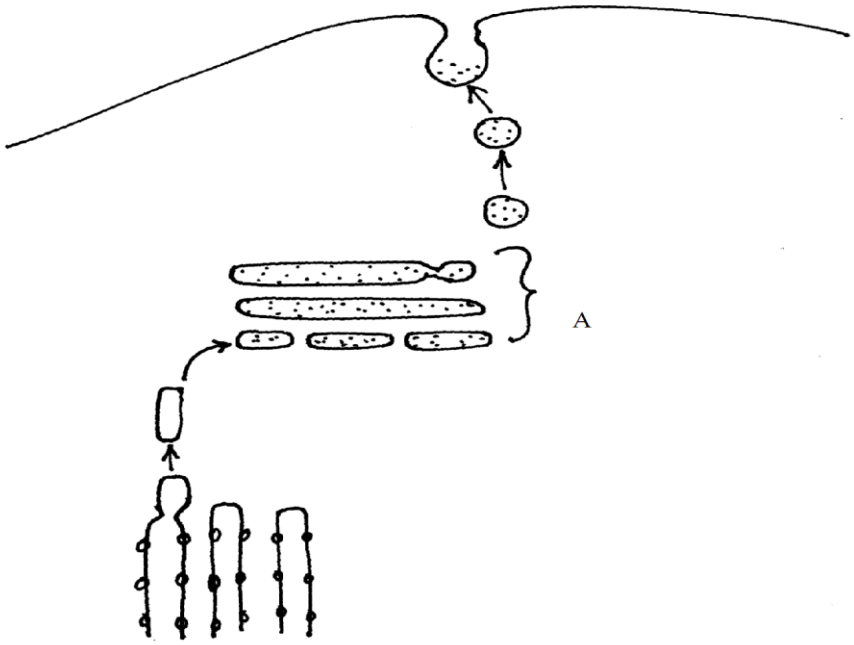
.....

10. Study the diagram below and use it to answer the questions.



a) Identify the organelle marked A. (1mk)

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b) Give three functions of the organelle named in (a) above (3mks)

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11. It was found that during germination of pea seeds 9.3cm^3 of carbon (iv) oxide was produced while 9.1cm^3 of oxygen was used up.

a) Calculate the respiratory quotient (RQ) of the reaction taking place. (2mks)

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b) Identify the type of food substance being metabolized. (1mk)

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12. Explain why Lamarck's theory of evolution is not accepted by biologists today. (2mks)

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13. Give three reasons why plants lack complex excretory organs like those of animals. (3mks)

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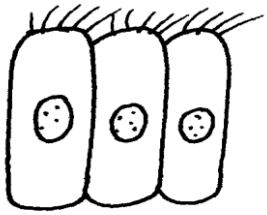
14. The diagram below shows a type of epithelial tissue.



i) What is the name of the hair-like process? (1mk)

.....

.....

ii) What is the function of the hair-like process. (1mk)

.....

.....

b) Name one part in the human body where the hair-like process are found. (1mk)

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15. In an attempt to estimate the number of weaver birds in a small woodland 435 were captured , marked and released. Three days later , 620 were captured 75 of which were marked.

a) What is the name of the sampling method described above. (1mk)

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b) Calculate the approximate size of the weaver bird population in the woodland. (2mks)

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c) Give one disadvantage of this method. (1mk)

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16. Give an example of ball and socket joint. (1mk)

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17. Name two types of strengthening tissues in plants. (2mks)

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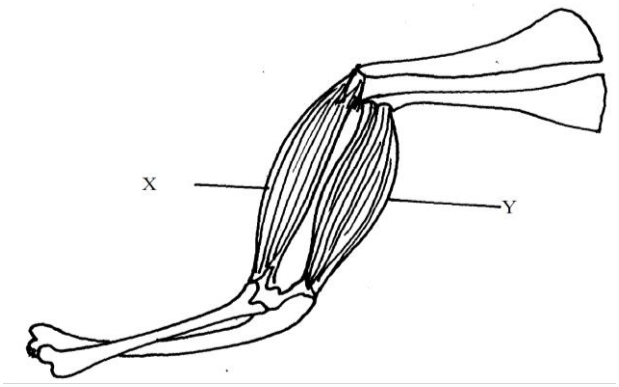
18. Study the diagram below, and answer the questions below.



a) Name the muscles labelled X and Y. (2mks)

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b) What happens to each muscle as the arm is straightened? (2mks)

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19. Nocturnal animals such as a leopard are capable of seeing fairly well at night. What two retinal adaptations have made this possible? (2mks)

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20. The table below shows stomata distribution on leaves A and B and their surface area. Use the information to answer the questions that follow.

	Leaf A	B
Number of stomata	Upper surface 25	5
	Lower surface 0	20
Surface area.	$30cm^3$	$19cm^3$

b) Identify with reasons the habitats of the plant from which the leaves were obtained (4mks)

Leaf A Habitat.....

Reasons.....

.....

.....

Leaf B Habitat.....

Reasons.....

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21. A tall bean plant crossed with a dwarf one produces offspring of which about half are tall and other are dwarf . what are the genotypes of parents? Show your working (3mks)

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22. Describe what happens during the dark stage of photosynthesis. (3mks)

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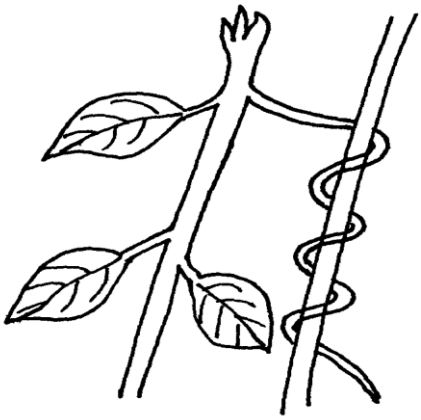
23. The response exhibited by a certain plant tendril is illustrated below.



i) Name the type of response. (1mk)

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ii) Explain how the response named in (i) above occurs . (2mks)

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24. State three adaptations of respiratory surfaces. (3mks)

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25. State the parts of the ear involved in:

a) Amplification of sound vibration (1mk)

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b) balance and posture. (1mk)

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26. Explain why the digestion of starch stops after food enters the stomach. (2mks)

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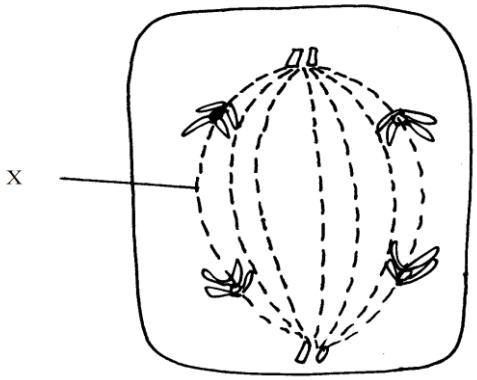
27. The diagram below represents a stage during cell division.



i) Identify the stage of cell division. (1mk)

.....

.....

ii) Give two reasons for your answer (a)i) above (2mks)

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iii) Name the structure labelled M. (1mk)

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28. Bivalent synapsis, crossing over are terminologies used in cell division.

a) Name the stage of meiosis in which the process takes place. (1mk)

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b) Distinguish between synapsis and crossing over. (2mks)

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NAME .....INDEX NO.....
SCHOOL.....DATES.....
CANDIDATES' SIGN.....

231/2
BIOLOGY
PAPER 2
(THEORY)
Time: 2 Hours

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

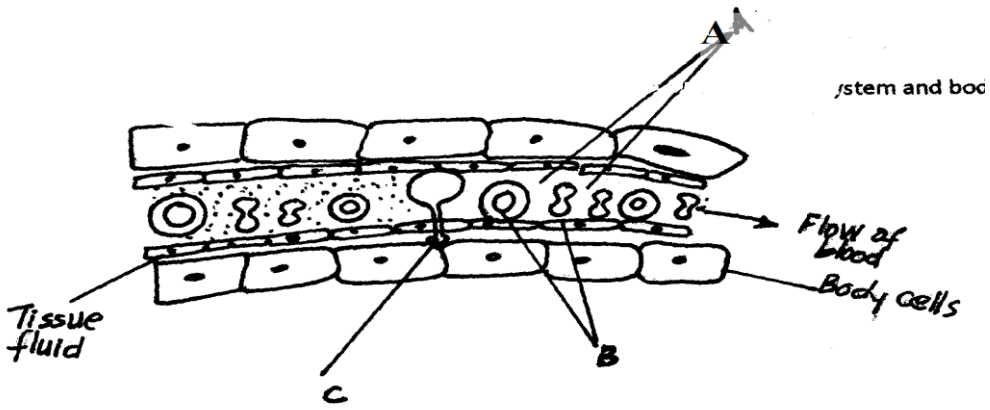
INSTRUCTIONS TO CANDIDATES

a) Write your name and index number in spaces provided above
b) This paper consists of two sections **A** and **B**.
c) Answer **ALL** the questions In section A in the space provided.
d) In section B answer question **6 (compulsory)** and either question 7 or 8 in the spaces provided after question 8.

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

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

1. The diagram below shows the exchange site between circulatory system and body cells.



a) State **two** adaptations of the capillaries. (2mks)

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b) (i) Name the blood cells labeled B. (1mk)

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(ii) State the gas that diffuses from B to the tissue cells. (1mk)

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c) State **two** functions of the part labeled A. (2mks)

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d) Name the blood vessel with the highest concentration of;

Oxygen. (1mk)

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Urea. (1mk)

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2. The table below gives information about an aquarium community which is ecologically balanced.

Type of organism	
Insect	500grms
Fishes	1200grms
Water plants	5000grms
bacteria	10grms

a) What do you understand by the term ecological balance? (1mk)

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a) What do you understand by the term ecological balance? (1mk)

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b) Calculate the total biomass of the aquarium. (2mks)

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c) Which organism in the table is? (2mks)

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i) Primary producer (2mks)

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ii) Secondary consumer

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d) Construct a food web of the aquarium. (3mks)

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3. In human beings, a downward pointed frontal hairline ("windows peak") is a heritable trait. A person with windows peak always has at least one parent who has his trait; whereas persons with frontal hairline may occur in families in which one or even both parents have windows peak. Using B and b to symbolize genes for this trait.

a) Determination the f1 generation if a homozygous windows peak male parent is married to a Homozygous frontal hairline female parent. (4mks)

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b) State two causes of variations. 2mk)

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c) Name two examples of discontinuous variation. (2mks)

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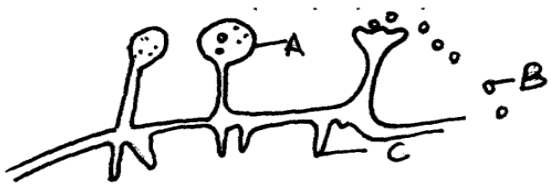
3. The drawing below represents a mature bread mould (rhizopus).Study it and answer the questions which follow.



a) Name the structures labeled A, B and B. (3mks)

A.....

C.....

b) Identify the type of asexual reproduction represented in the diagram (1mk)

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c) Give one function of structure C. (1mk)

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d) Define the term fertilization. (1mk)

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i) Compare an ovum cell and a zygote. (2mks)

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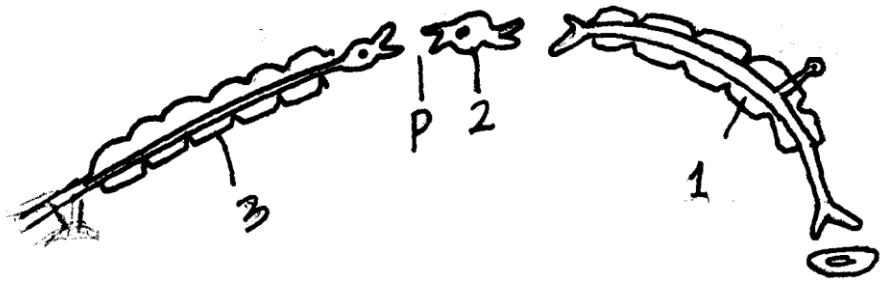
5. The diagram below shows three different types of neurons along a reflex.



a) Identify the neuron labeled 1, 2 and 3 (3mks)

1.....

2.....

3.....

b) Using arrow show the direction of impulse transmission on the diagram. (1mks)

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c) Name the part of the spinal cord where the cell bodies of neuron 2 and 3 are located. (1mk)

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d) Describe the transmission impulses across the part labeled P. (3mks)

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6. Answer QUESTION 6(COMPULSARY) AND EITHER 7 OR 8 IN THE SPACES PROVIDED.

A man carried out an experiment to find out the effect of water and 0.9% salt solution on urine production.on the first day he drunk one liter of water(X).on the second day he repeated the experiment but instead of water,he drunk one litre of 0.9% salt solution(Y).

The experimental results are shown in the table below.

Time (hours)		0.0	1.0	1.5	2.5	4.5	5.5	6.5	7.5
Amount of urine produced in cm^3 per hour	X	80	60	360	520	60	100	40	60
	Y	40	40	40	45	100	60	80	100

a) Using a suitable scale draw graphs of urine produced in cm^3 per hour against time. (8mks)
Draw graph.

b) From the graph determine the:
(i) Amount of urine produced in the second hour when the man had drunk. (1mk)
(ii) The rate of urine production between the first and second hour after the man had drunk one liters of water. Show your working.

c) What does the shape of the curve representing column X tell us about the rate of urine production?

d) Explain the differences between the rate of production in graph X and Y. (2mks)

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e) Why do you think drinking one liter of (0.9%) sodium chloride solution made little difference to the output? (2mks)

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f. What does the comparisons of the results of the experiment indicate about the effect of the Kidneys on the osmotic pressure of the blood plasma? (2mks)

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g. What does the results of the experiment indicate about the effect of the kidneys on the volume of blood plasma? (2mks)

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7. a) Describe how you will estimate the growth rate of a seedling? (6mk)

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b) Explain the process of secondary thickening in flowering plants? (14mks)

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8. Describe the following stages of photosynthesis. (14mks)

a. Light stage (10mks)

b. Dark stage (10mks)

NAME:…….. INDEX NO…….
SCHOOL:…….. CANDIDATE'S SIGN ……..
DATE ……..

231/3
BIOLOGY
Paper 3
PRACTICAL
Time: 1 ¾ Hours

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

231/3
BIOLOGY
Paper 3
PRACTICAL
Time: 1 ¾ Hours

INSTRUCTIONS TO CANDIDATES

(a) Write your name and Admission number in the spaces provided above.
(b) Answer ALL the questions in the spaces provided.

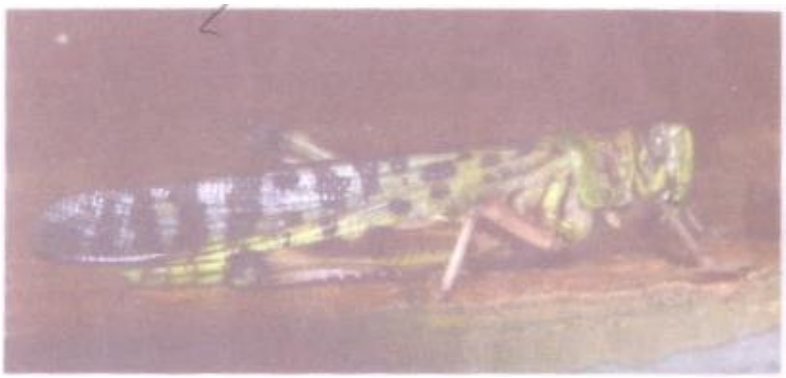
For Examiners use only

Question	Max Score	Candidates Score
1		
2		
3		
Total	40	

This paper consists of 8 printed pages.
Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

1. Using the provided photographs; answer the following questions.

1. Photographs;



a) With reasons, state the kingdom to which specimen F and J belongs.

F…… (1mk)

J…….. (1mk)

Reasons

F……

……

……

(1mk)

J……

……

(1mk)

b) Using observable features only; state the;

i) Phylum to which specimens J and F belong

……

ii) Class to which specimens J and F belong.

J…….. (1mk)

F……. (1mk)

iii) Give reasons for your answer in

(ii) Class for J above. (3mks)

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c) (i) Name the division from which specimen K and L were obtained from. (2mks)

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ii) Give two observable differences between members from which specimen K and L were obtained from. (2mks)

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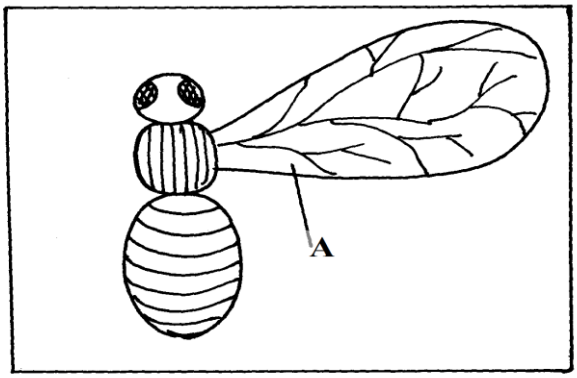
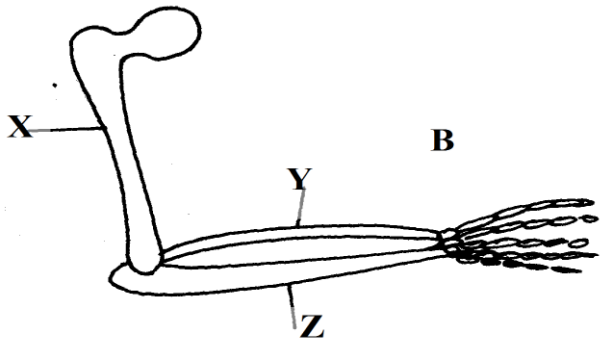
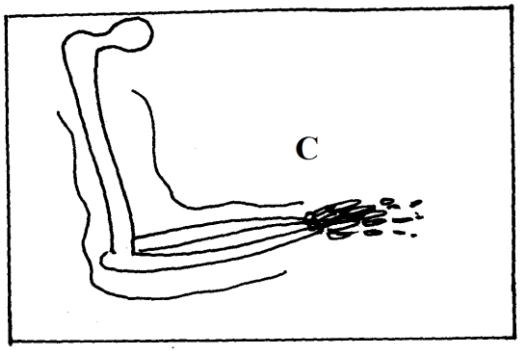
d) You are provided with photographs A, B and C, use them to answer questions that follow.







2. (a) Identify the parts labeled X,Y and Z. (3mks)

X……

Y……

Z……..

(b) What common name is given to structure ref?

(i) A and C…… (1mk)

(ii) B and C…… (1mk)

(c) Give a reason for your answer in b (i) and (ii) above. (2mks)

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d) State the type of evolution that leads to emergence of structures named in 2 b (i) and (ii) above. (2mks)

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e) Identify two differences between structures A and C. (2mks)

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f) What is a vestigial structure? (1mk)

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3. You are provided with solution W.Using the provided reagents; carryout possible food tests to identify food substances present in solution. W

Food substance	Procedure	observation	Conclusion

NAME: …….. INDEX NO……...

CANDIDATE SIGN: …….....DATE.....

SCHOOL RANDOM NO. : ……

565/1

BUSINESS STUDIES
PAPER 1
TIME: 2 HOURS

Kenya Certificate of Secondary Education (KCSE)

565/1

BUSINESS STUDIES
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER ALL QUESTIONS IN THE SPACES PROVIDED IN THEQUESTION PAPERS.
EXAMINER'S USE

1	2	3	4	5	6	7	8	9	10

11	12	13	14	15	16	17	18	18	20

21	22	23	24	25

GRAND SCORE	

1. State four reasons why one may start a business. (4 mks)

   a)

   b)

   c)

   d)

2. State four features of goods. (4 mks)

   a)

   b)

   c)

   d)

3. In the table below indicate the of utility described. (4 marks)

Description	Type of utility
a) Collecting firewood	
b) Storage of maize	
c) Selling clothes	
d) Manufacturing goods	

4. State four factors that discourage entrepreneurial development in an economy. (4 mks)

   a)

   b)

   c)

   d)

5. Outline four qualities that Nyakundi should posses in order to work effectively in an office. (4 mks)

   a)

   b)

   c)

   d)

6. Highlight for characteristics of road side traders

   a)

   b)

c)

d)

7. Momanyi a form four school leaver wants start a business sole. State four advantages he will get by doing the business jointly with another person.

a)

b)

c)

d)

8. Highlight the role of consumer organizations in consumer protection. (4 mks)

a)

b)

c)

d)

9. Highlight four circumstances under which containerization may be suitable in the transportation of goods. (4 mks)

a)

b)

c)

d)

10. List four services that facilitate communication. (4 mks)

a)

b)

c)

d)

11. State four importance of aware housing to a trader. (4 mks)

a)

b)

c)

d)

12. Matoke insured his car for Kshs 400,000 against motor accident. The value of the car was Kshs 300,000. After one week the car was involved in an accident and los was valued at kshs 200'000. Calculate compensation that Matoke received. (4 mks)

13. State three after sale services a computer firm may offer its customers. (4 mks)

a)

b)

c)

d)

14. Give three reasons why demand curve of good usually slopes downwards from the left to the right (3 mks)

a)

b)

c)

d)

15. State four reasons why small scale firms are more popular in Kenya than large scale firms.

a)

b)

c)

d)

16. State four sources of oligopoly power

a)

b)

c)

d)

17. Complete the table below. (4 mks)

Assets	Liabilities	capital
a) 180560	----------	97200
b) ----------	99300	106000
c) 350200	167300	----------
d) 650700	----------	137200

18. State four problems associated with income approach method of measuring national income. (4 mks)

a)

b)

c)

d)

19. State four measures that can be taken by the government to solve unemployment problem in Kenya (4 mks)

a)

b)

c)

d)

20. For each of the following transactions indicate the account to be debited an account to be credited. (4 mks)

Transaction	Account to Debit	Account to credit
a) Started business with cash money		
b) Bought stock on credit from Mwangaza traders		
c) Bought motor vehicle on credit from Kwanza motors		
d) Paid Mwangaza traders by cash		

21. Record the following transactions of Kenyanya traders in the trial balances provided for the month ended 31st Aug, 2007.

Cash Ksh. 100,000

Loan Ksh. 430,500

Motor vehicle Ksh. 700,000

Premises Ksh. 1,200,000

Creditors	Ksh.	70,000
Capital	Ksh.	1,500,000

Name of account		

22. State four uses of a trading account (4 mks)

a)

b)

c)

d)

23. State four methods of credit control used by the central bank of Kenya. (4 mks)

a)

b)

c)

d)

24. State four uses of public finance. (4 mks)

a)

b)

c)

d)

25. From the following transactions identify the journal entry. (5 mks)

Transactions	Journal entry
1) Bought a business bicycle on credit	
2) Returned 10 cartons of milk to Makanyango previously bought on credit	
3) Receive one tray of eggs from lilian for sale and did not pay.	
4) Sold goods to Habiba on credit	
5) Bought goods from Karitu and paid on spot	

NAME: …….. INDEX NO……...

CANDIDATE SIGN: …….....DATE.....

SCHOOL RANDOM NO. : ……

565/1

BUSINESS STUDIES
PAPER 2
TIME: 2 HOURS

Kenya Certificate of Secondary Education (KCSE)

565/1

BUSINESS STUDIES
PAPER 2
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

ANSWER ANY FIVE QUESTIONS IN THE SPACES PROVIDED IN THEQUESTION PAPERS.
EXAMINER'S USE

1a	1b	2a	2b	3a	3b	4a	4b	5a	5b

6a	6b

TOTALGRAND SCORE MARK	

1. a) Explain five advantages of automatic verding machines (ATM) to a trader. (10 mks)

   b) Explain five differences between monopoly and perfect completion market. (10 mks)

2. a) Explain five roles of stock exchange in the Kenyan economy.

   b) Explain five causes of a deficit in the balance of payment.

3. a) Explain five structural changes that a country may experience when undergoing development

   b) Umoja had the following balances as at 31st Dec, 2009.

Building	560,000
Debtors	96,900
Bank loan	452,500
Creditors	247,000
Furniture	408,170
Gross Profit	520,600
Motor vehicle	900,000
Discount allowed	142,000
Lighting	25,200
Interest on loan	1,200
Closing stock	72,500
Rent received	120,000
Repairs on buildings	60,000
Repairs on furniture	72,030
Repairs on motor vehicle	300,000
General expenses	102,100
Capital	1,400,000

Prepare Umoja's:

   a) Profit and loss for the year ended 31st Dec 2009. (5 ½ marks)

   b) Balance sheet as at 31st Dec 2009. (4 ½ marks)

4. a) Explain five advantages of M-Banking to an economy. (10 marks)

   b) Explain five ways in which commercial attaches may boast export trade. (10 mks)

5. a) Explain five causes of demand pull inflation. (10 mks)

   b) Explain the procedure for claiming compensation by the insured. (10 mks)

6. a) Explain six circumstances under which one may use telegram over telephone communication.

   b) The following details were extracted from the books of Bonga traders during the years ended 31st July 2001.

Sales Sh.	1,840,000
Opening Stock Sh.	360,000
Closing Stock Sh.	460,000
Expenses	16% of sales
Margin	20%

Calculate

i) Gross profit

ii) Cost of Sales

iii) Purchases

iv) Net profit

NAME:.....INDEX NO:.....

SCHOOL:.....CANDIDATES SIGNATURE:.....

DATE:.....

233/1
CHEMISTRY
PAPER 1
TIME: 2 HOURS

Kenya certificate of secondary education (K.C.S.E)

233/1
CHEMISTRY
PAPER 1
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name and Index number in the spaces provided.
2. Answer ALL the questions.
3. Answers must be written in the spaces provided in the question paper.
4. Additional pages must not be inserted.
5. Candidates should check the question paper to ascertain that all the pages are printed.
6. This paper consists of 12 printed pages

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 - 29	80	

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

1. In a motoring magazine, a journalist wrote "On a busy road the proportion of carbon (II) oxide has varied from 6 parts per million to 180 parts per million."

a) Explain why the proportion of carbon (II) oxide varies as above. (1mk)

.....

.....

b) By what reaction is carbon (II) oxide above formed. (1mk)

.....

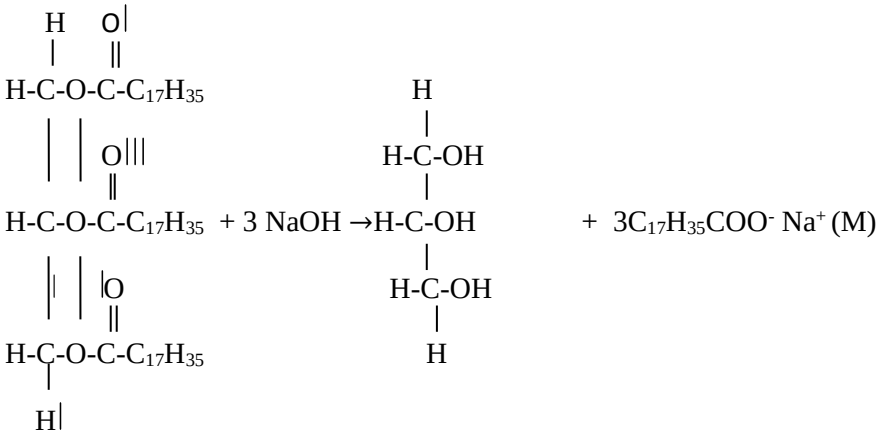
.....

c) What is the effect of carbon (II) oxide on blood and why does it make the gas poisonous. (1mk)

.....

.....

2. Compound K reacts with sodium hydroxide as shown.



a) What type of reaction is represented by the equation. (1mk)

.....

.....

b) To what class of organic compounds does K belong. (1mk)

.....

.....

c) How is M separated from aqueous mixture of L and M. (1mk)

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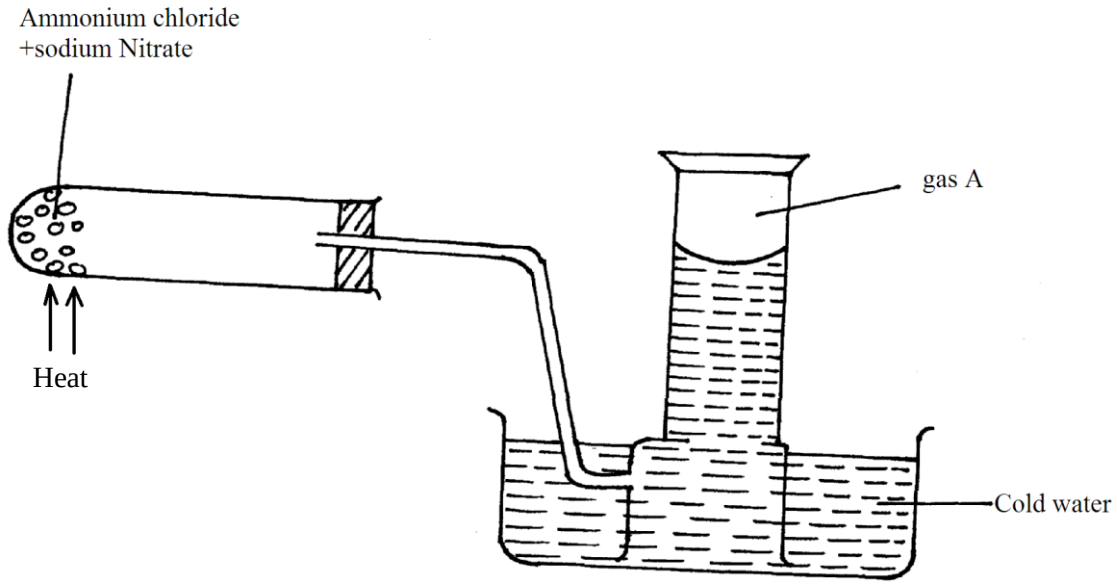
3. A mixture of ammonium chloride and sodium nitrite was heated as shown in the set up below.



a) Identify gas A. (1mk)

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b) State and explain the precaution that should be taken before heating is stopped. (2mks)

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4. Study the reaction below and answer the questions that follow.

Reaction	Equation
J	$Ba_{(aq)}^{2+} + SO_{3(aq)}^{2-} \longrightarrow BaSO_{3(s)}$
K	$Br_{2(g)} + 2I_{(aq)}^{-} \longrightarrow 2Br_{(aq)}^{-} + I_{2(g)}$
L	$2Fe^{2+}_{(aq)} + Br_{2(g)} \longrightarrow 2Fe_{(aq)}^{3+} + 2Br_{(aq)}^{-}$
M	$HSO^{-}_{4(aq)} + OH_{(aq)}^{-} \longrightarrow SO^{2-}_{4(aq)} + H_2O$
N	$Fe_{(s)} + S_{(s)} \xrightarrow{heat} FeS_{(s)}$

a) Which of these reactions indicate;

i) A precipitate reaction (1mk)

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ii) Displacement noction (1mk)

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iii) Neutralisation reaction (1mk)

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5. Given the following half cells

$Pb^{2+}_{(aq)} / Pb_{(s)}$ $E^{\theta} = -0.13v$

$Cu^{2+}_{(aq)} / Cu_{(s)}$ $E^{\theta} = +0.34v$

a) Write the ionic equations for the half-cell that undergoes (2mks)

i) Oxidation

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ii) Reduction

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b) Calculate the e.m.f of the resulting electrochemical cell. (1mk)

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6. The formation of carbon (II) oxide and hydrogen from methane and steam at $750^{0}C$, is represented by the equation below.

$CH_{4(g)} + H_2O \rightleftharpoons CO_{(g)} + 3H_{2(g)}$ $\Delta H = 206kJ$

a) Calculate the mass of methane that reacts to produce 556kJ of heat. (C=12 O=16 H=1) (2mks)

b) What effect does increase in pressure have on the yield of carbon (II) oxide gas? (1mk)

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7. 5.34g of a salt of formula M_2SO_4 was dissolved in water. The sulphate was precipitated by adding excess banum chloride solution. The mass of the precipitate formed was 4.66g.

(Ba = 56, S = 32, O = 16)

a) Determine the moles of sulphate ion present. (1mk)

b) Calculate the relative atomic mass of M in M_2SO_4 (2mks)

8. Study the information in the table below and answer the questions that follow. A mixture contains three solids; aluminium sulphate sugar, and camphor. The solubility of these solids in different liquids is shown in the table below.

Liquid / Solid	Water	Alcohol	Ether
$Al_2(SO_4)_3$	Soluble	Insoluble	Insoluble
Sugar	Soluble	Soluble	Insoluble
Camphor	Insoluble	Soluble	Very soluble

Explain how you would obtain a solid sample of sugar from the mixture. (3mks)

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9. The equation below represents changes in physical states of iron metal.

$Fe_{(s)} \longrightarrow Fe_{(s)}$ $\Delta H = +15.4kJ/mol$

$Fe_{(l)} \longrightarrow Fe_{(g)}$ $\Delta H = +354\ kJ/mol$

Calculate the amount of heat required to change 11.2g of solid iron to gaseous iron. (Fe = 56.0) (2mks)

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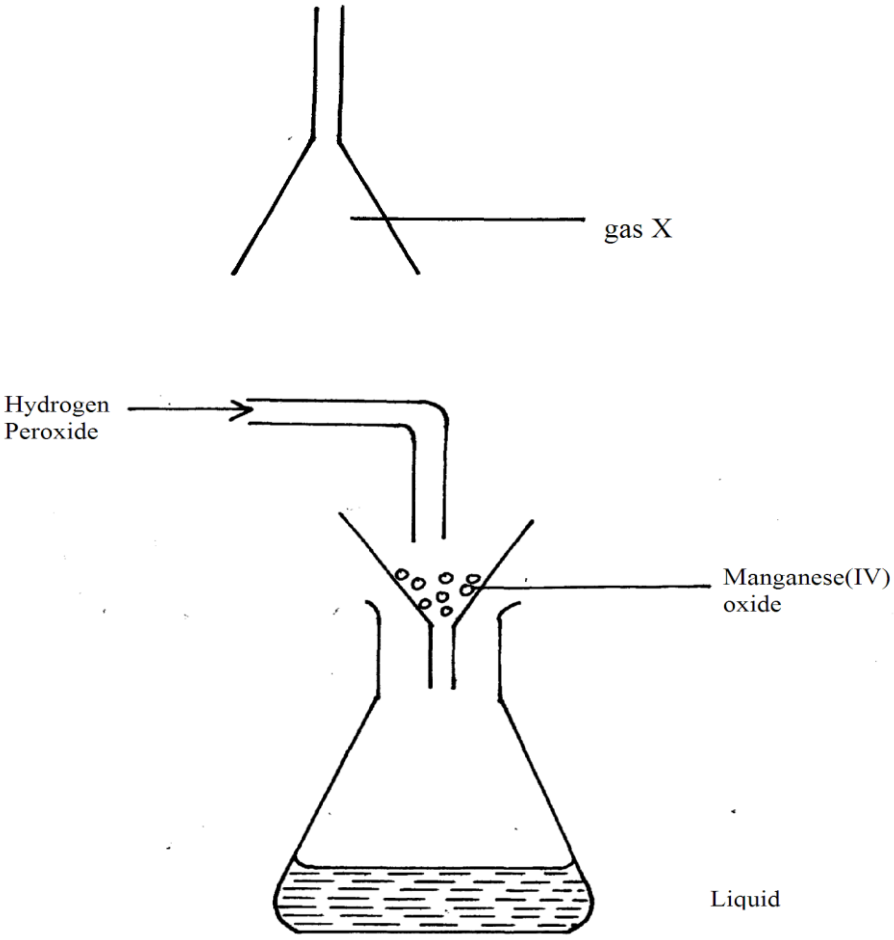
10. The set up below was used to prepare a gas X. study it and answer the question that follow.



Name;

i) Gas X (1mk)

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ii) Liquid P. (1mk)

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11. The following are standard electrode potential for some elements.

	E^{θ}(Volts)
$A^{2+}_{(aq)} + 2e^- \rightleftharpoons A_{(s)}$	-0.28
$B^{+}_{(aq)} + e^- \rightleftharpoons B_{(s)}$	+1.68
$C^{2+}_{(aq)} + 2e^- \rightleftharpoons C_{(s)}$	-0.40
$D^{2+}_{(aq)} + 2e^- \rightleftharpoons D_{(s)}$	+0.85
$E^{2+}_{(aq)} + 2e^- \rightleftharpoons E_{(s)}$	-2.38
$F^{+}_{(aq)} + e^- \rightleftharpoons F_{(s)}$	+0.80

a) An aqueous solution containing F^+ ions is placed in a container made of C. determine whether a reaction occurs or not, showing how you arrive at your answer. (2mks)

b) Identify two half-cells which if combined give the highest e.m.f. (1mk)

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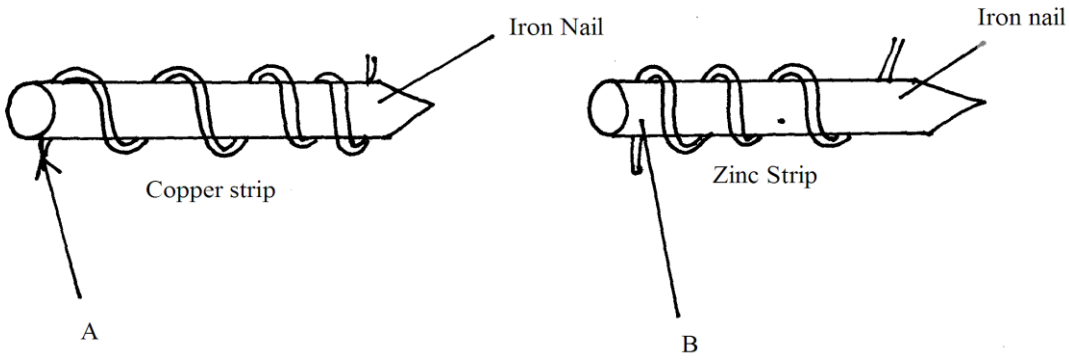
12. Complete the table to show how the factor given below affect the rate of reaction between acid and magnesium and give an explanation for each effect.

Factor	Effect on rate of reaction	Explanation
Using magnesium powder instead of ribbon	(1mk)	(2mks)

13. The diagram below represent two iron nails with some parts wrapped tightly with zinc and copper stripes respectively.



State the observations that would be made at the exposed points A and B if the wrapped nails are left in the open for several months. Explain (3mks)

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14. 5.04g of a mixture of anhydrous sodium carbonate and sodium hydrogen carbonate when heated to a costant mass, gare 4.11g of residue. Calculate the percentage of anhydrous sodium carbonate in the mixture. (Na=23 O=16 H=1) (3mks)

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15. State, giving reasons, the observations that would be made when concentrated sulphuric(VI) acid is added to powdered sulphur and the mixture heated. (3mks)

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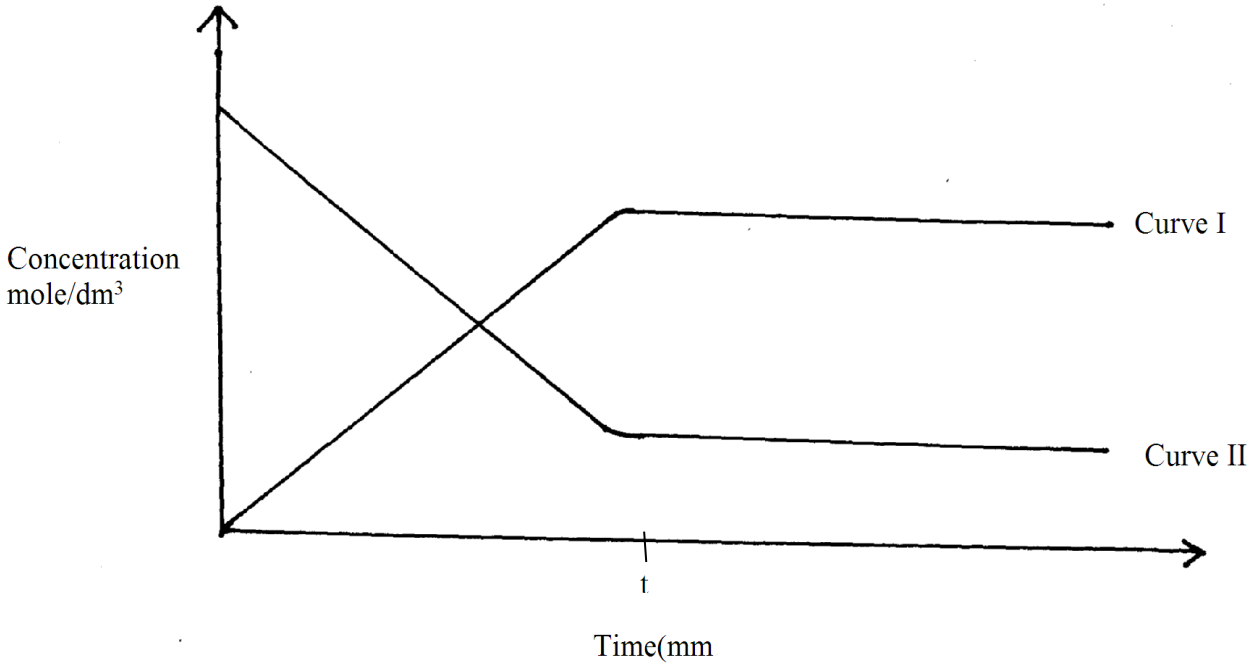
16. The curve below represent the changes in the concentrations of substance E and F with time in the reaction. $E_{(g)} \rightleftharpoons F_{(g)}$



a) Which curve represents the changes in the concentration of substance F? Give a reason (2mks)

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b) Give a reason for the shapes of the curves after time (t) minutes. (1mk)

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17. State and explain the change in mass that occur when the following substances are separately heated in open crumbles. (3mks)

i) Copper metal

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ii) Copper (II) Nitrate

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iii) Anhydrous copper (II) sulphate

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18. State Charles' law for gases and explain it using kinetic theory of matter. (3mks)

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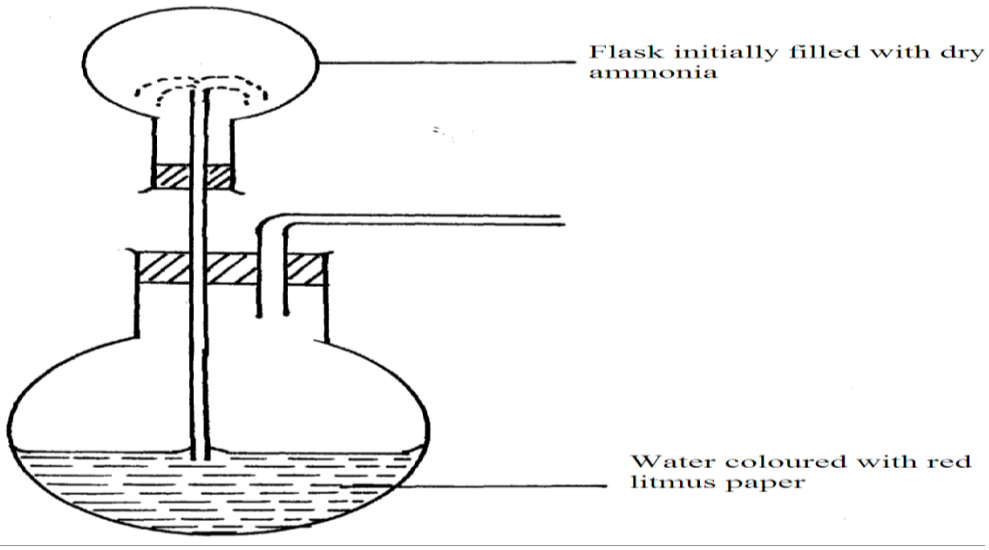
19. Below is a diagram for the 'fountain experiment' using ammonia gas.



Red coloured water begins to rise up the tube from lower flask to upper flask and a "fountain" is observed in the upper flask. Red colour changes to blue.

i) Why does the colour change to blue? (1mk)

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ii) Explain why the fountain effect occurs. (1mk)

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iii) Why is it necessary to have two tubes in the lower flask? (1mk)

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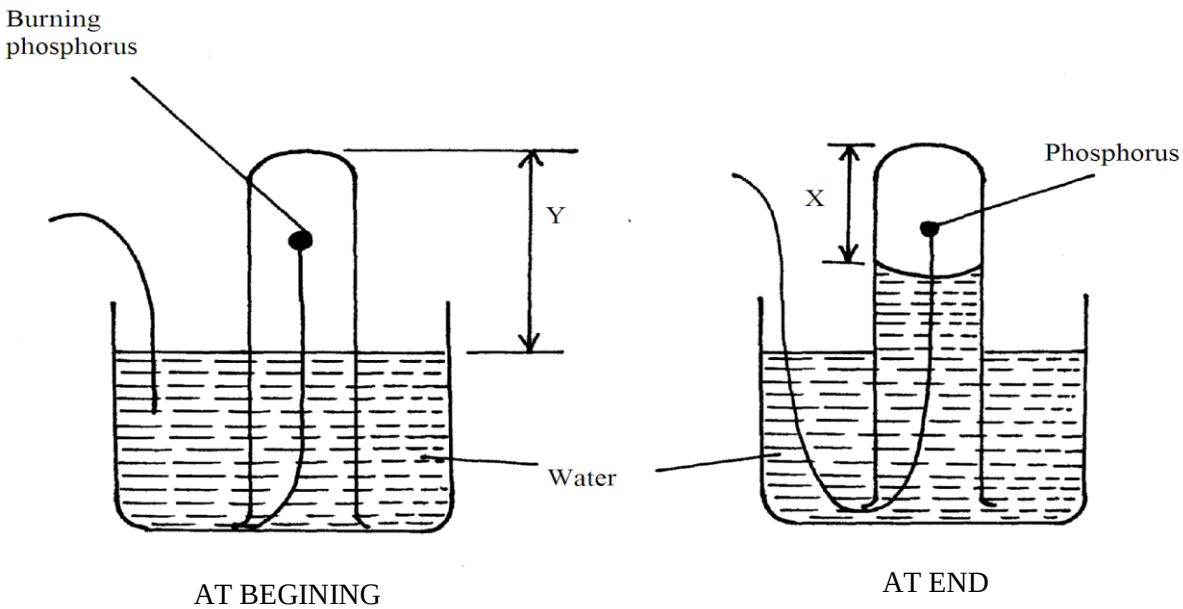
20. A student set-up the apparatus below in order to determine the percentage by volume of oxygen in air.



AT BEGINING AT END

a) Why did water rise when the reaction had stopped? (1mk)

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b) The student wrote the expression for the percentage by volume of oxygen in air as

$$\frac{y-x}{y} x100\%$$

Why was the volume of oxygen calculated using the above expression incorrect? (1mk)

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c) What should have been done after the reaction had stopped in order to get a correct volume. (1mk)

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21. The table below shows the two allotropes of sulphur. Using the guidelines given, state the differences between the two allotropes. (3mks)

Property	Rhombic	Monoclinic
Appearance		
Density		
Melting point (^{0}C)		

22. An element X, forms an ion ion X^{2-} with the electronic configuration 2.8.8

a) Write the electronic configuration of element X. (1mk)

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b) An element Y is found in the 4th group of the periodic table. Draw a dot (.) and (x) diagram to show bonding in compound formed when X and Y react. (1mk)

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23. State and explain two main factors considered in determining the position of an element in the periodic table. (2mks)

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24. Explain what would be the pH of the final solution obtained after mixing equal volumes of 2M Sodium hydroxide and 2M Ethanol acid. (2mks)

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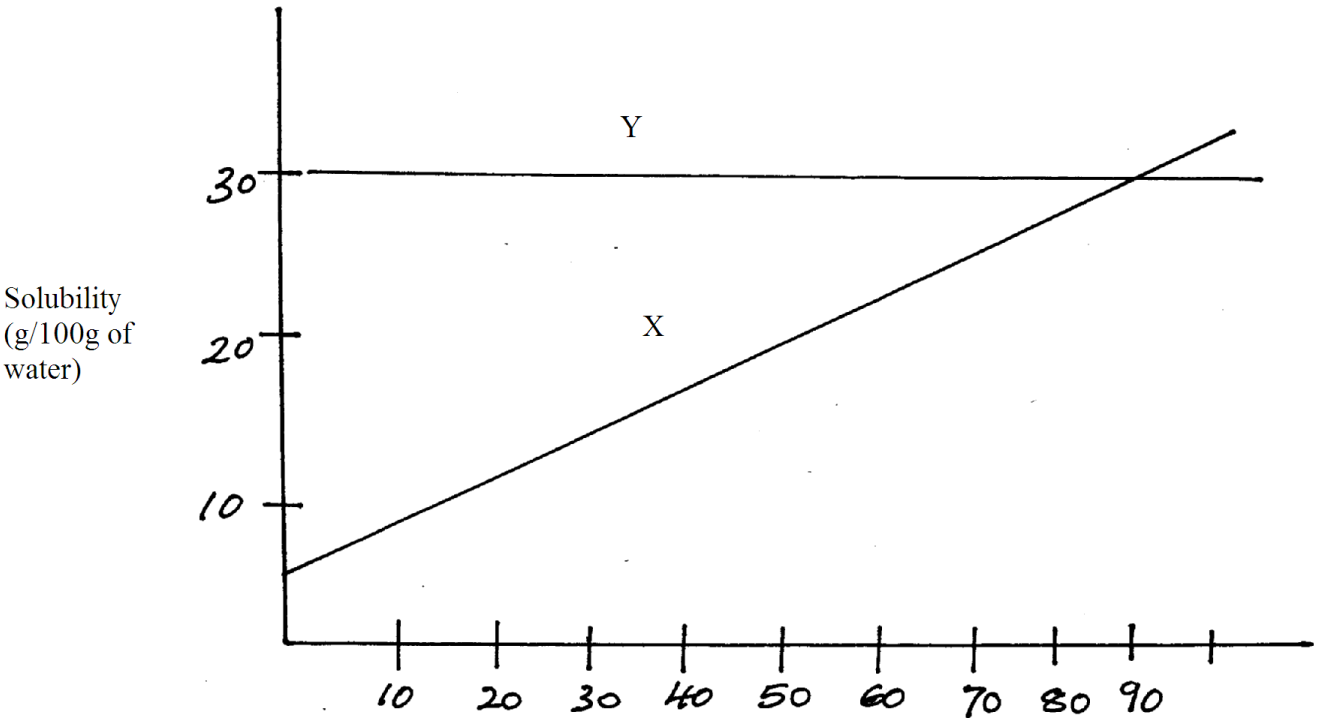
25. The graph below shows the solubility curves for salt X and Y.



a) Which of the two salts is more soluble in water? Explain (1mk)

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b) State and explain what happens when 100g of solution containing 20g of salt X and 20g of salt Y is cooled from 90^0C to 20^0C (2mks)

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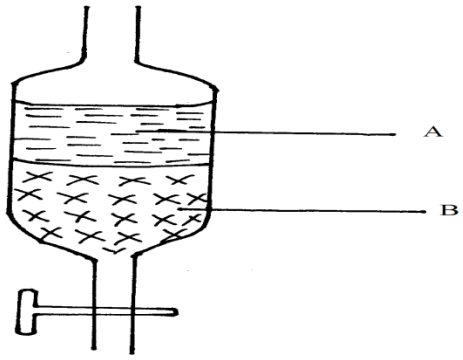
26. In an experiment to separate a mixture of two liquids A and B, a student set up the apparatus as shown below.



a) Name the apparatus (1mk)

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b) Which liquid is denser (1mk)

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c) Which other method can be used to separate the two liquids. (1mk)

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27. Study the information given below and use it to answer the questions that follow.

Substance (oxide)	Reaction with acids	Melting point (^{0}C)
J	No reaction	-30
K	Reacts explosively	1190
L	No reaction	1728
M	Reacts readily	3075

Select

i) An oxide with giant atomic structure. (1mk)

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ii) An oxide which dissolves in water to form an acidic solution. (1mk)

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28. When 94.5g of hydrated barium hydroxide $Ba(OH)_2.nH_2O$ were heated to constant mass, 51.3g of anhydrous barium hydroxide were obtained. Determine empirical formula of the hydrated barium hydroxide. (Ba = 137 O = 16 H = 1) (3mks)

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29. Reagent bottles labelled H_2SO_4, K_2CO_3 and NaCl had labels accidentally removed. A packet of blue litmus paper is lying near a long with a rack of test-tubes, without using any other material explain how you would go about labeling the bottles correctly. (3mk)

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NAME: ……INDEX NO: ……..

SCHOOL: ……CANDIDATE SIGN: ……

DATE: ……

233/2
CHEMISTRY
THEORY
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

233/2
CHEMISTRY
THEORY
TIME: 2 ½ HOURS

INSTRUCTION

a) Write your name and index number in the spaces provided above.
b) Sign and write the date of the examination in the spaces provided above.
c) Answer all questions in the spaces provided.
d) Mathematical tables and electronic calculators may be used.
e) All working must be clearly shown where necessary.

FOR EXAMINER'S USE ONLY

Question	Maximum score	Candidate's score
1	13	
2	10	
3	13	
4	13	
5	13	
6	13	
7	8	
Total score	80	

This paper consist of 8 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

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

Element	Electronic configuration	Ionisation energy kj moi^{-1}
P	2.1	519
Q	2.8.1	494
R	2.8.8.1	418

i) What is the general name given to the group in which elements P, Q and R belong? (1 mk)

ii) What is meant by ionisation energy? (1 mk)

iii) Explain why element P has the highest ionisation energy. (1 mk)

iv) When a piece of element Q is placed on water, it melts and a hissing sound is produced as it moves on the surface of the water. Explain these observations. (3 mks)

v) Write an equation for the reaction between element Q and water. (1 mk)

b) Distinguish between a strong and a weak base. Give an example in each. (2 mks)

c) Neutralisation is one of the methods of preparing salts.

i) What is meant by neutralisation? (1 mk)

ii) Describe how you would prepare crystals of sodium nitrate starting with $200cm^3$ of 2M sodium hydroxide. (2 mks)

iii) Write an equation for the reaction that takes place when a solid sample of sodium nitrate is heated. (1 mk)

2. a) State two factors that should be considered when choosing fuel for cooking. (2 mks)

b) The diagram below represents a set up that was used to determine the molar heat of combustion of ethanol.

During the experiment, the data given below was recorded

Volume of water	$450cm^3$
Initial temperature of water	25℃
Find temperature of water	46.5℃
Mass of ethanol + lamp before burning	125.5 g

Mass of ethanol + lamp after burning 124.0 g

Calculate the:

i) Heat evolved during the experiment(Density of water = 1 g/cm3, specific heat capacity of water = $4.25g^{-1}k^{-1}$ (2 mks)

ii) Molar heat of combustion of ethanol(C=12.0, O=16.0,H= 1.0) (2 mks)

c) Write the equation for the complete combustion of ethanol (1 mk)

d) The value of the molar heat of combustion of ethanol obtained in (b) (ii) above is lower than the theoretical value. State one source of error in the experiment. (1 mk)

e) Draw an energy level diagram to show molar heat of combustion of ethanol. (2 mks)

3. The standard reduction potentials for five half cells are shown in the table below. Study it and answer the questions that follow. (The letter do not represent the actual symbols of the elements).

	Element					E^{θ} (volts)
i)	$A_{2\,(aq)}$	+	$2e^-$	$\longrightarrow$	$2A^-_{(aq)}$	+1.09
ii)	$Q^{2+}_{\,(aq)}$	+	$2e^-$	$\longrightarrow$	$Q_{(s)}$	-0.13
iii)	$R^{2+}_{\,(aq)}$	+	$2e^-$	$\longrightarrow$	$R_{(s)}$	-2.37
iv)	$Y^{2+}_{\,(aq)}$)	+	$2e^-$	$\longrightarrow$	$Y_{(s)}$	+0.34
v)	$2S^{+}_{\,(aq)}$	+	$2e^-$	$\longrightarrow$	$S_{2(s)}$	0.00

I. a) With a reason, identify the strongest reducing agent. (1 mk)

b) Which half cell is likely to be hydrogen? (1 mk)

c) Write an equation for the reaction between two half cells in (ii) and (iv) (1 mk)

d) Calculate the e.m.f of the cell in © above. (1 mk)

e) Explain why use should not use concentrated sulphuric(vi)acid in lead accumulators. (1 mk)

II. The diagram below represents a mercury cell that can be used in the industry manufacture of sodium hydroxide. Study it and answer the questions that follow.

a) Name:

i) Raw material introduced at 2. (1 mk)

ii) Another substance that can be used in the cell instead of graphite. (1 mk)

b) Identify the by product that comes out at I. (1 mk

c) Write an equation for the reaction:

i) That occurred at the anode. (1 mk)

ii) In which sodium hydroxide was produced. (1 mk)

d) Give one reason why mercury is recycled. (1 mk)

e) Draw a diagram to show how an aluminium spoon can be electroplated with pure copper. (2 mks)

4. a) In which homologous series do the following compounds belong? (2 mks)

i) CH_3CCH

ii) CH_3CH_2COOH

b) Raw rubber is heated with sulphur in the manufacture of natural rubber.

i) What name is given to the process? (1 mk)

ii) Why is the process necessary? (1 mk)

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

i) Write an equation for the reaction between propan-1-01 and potassium metal. (1 mk)

ii) Name process I and II. (2 mks)

iii) Identify the products A and B. (2 mks)

A _____

B_____

iv) Name one catalyst used in process II. (1 mk)

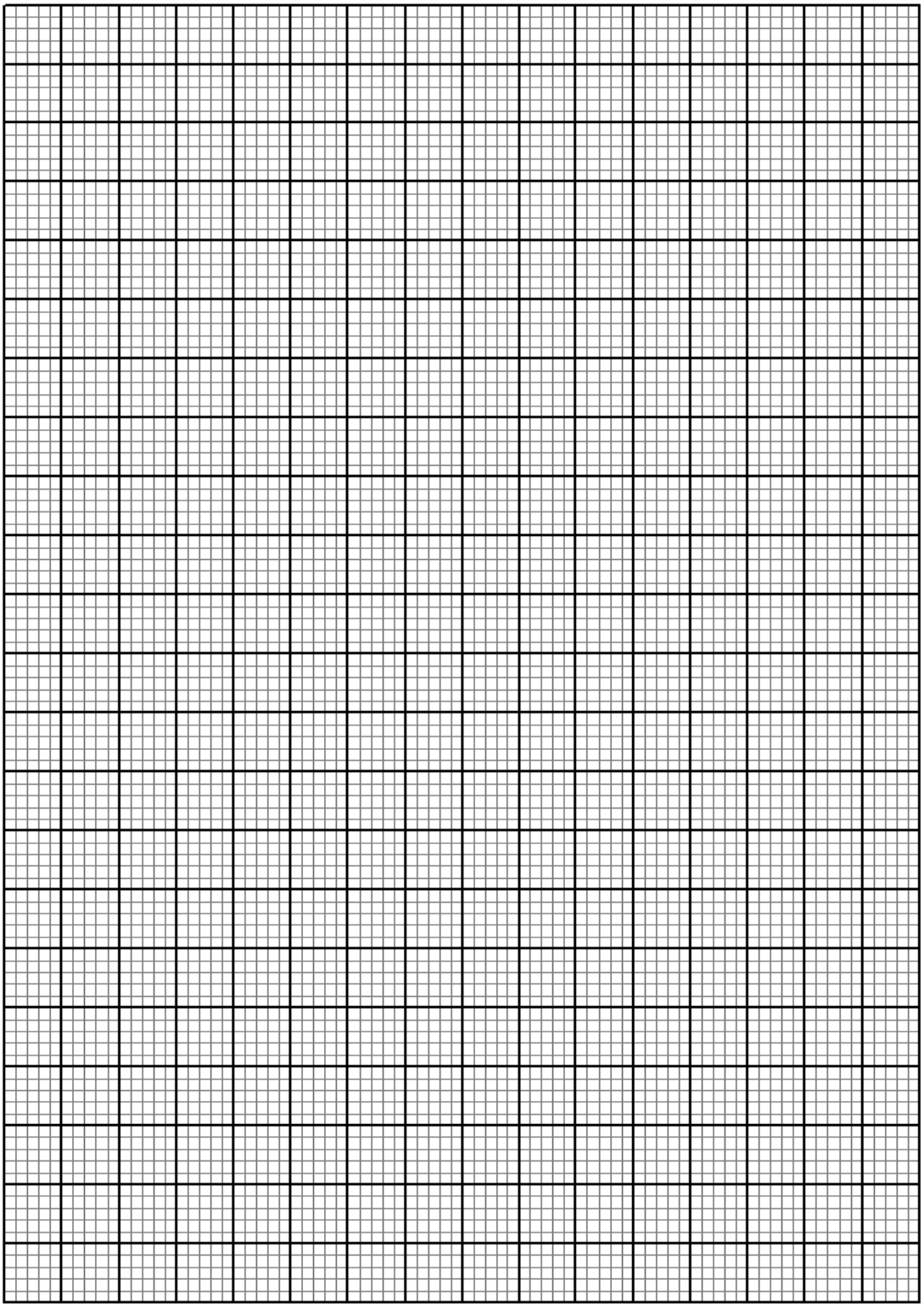
v) Draw the structure formula of the repeating unit in the polymer C. (1 mk)

d) State two industrial uses of methane. (2 mks)

5. a) Define the term solubility. (1 mk)

b) The table below shows the solubility of substances A and B against temperature.

Temperature	15	25	35	45	55	65	75
Solubility of A in 100g of H_2O	26	38	53	72	98	124	155
Solubility of B in 100g of H_2O	35.8	36.2	36.6	37	37.7	38	38



c) From the graph answer the following questions.

i) At what temperature are the solubilities of A and B the same? (1 mk)

ii) What mass of substance B is necessary to saturate 35g of water at 50℃

iii) By how many grams of solute does solubility of substance A exceed that of substance B at 50℃

d) Name the method of separating mixture which would be used to obtain pure sample of A from a mixture of A and B. (1 mk)

6. a) DIAGRAM

During the experiment the rubber band was removed and a hot glass rod put through the opening to ignite the phosphorous by touching. It was then immediately removed and the rubber band replaced as the phosphorous burnt producing thick white fumes.

i) How is phosphorous stored in the laboratory? Explain. (2 mks)

ii) State reasons why the level of water in the bell jar first went down as phosphorous burned then rose after it got extinguished. (2 mks)

iii) The white fumes formed in the bell jar slowly disappeared until the bell jar finally became clear. Explain. (1 mk)

iv) Given that the initial reading was 80cm3 and the final volume was 64cm3 determine the percentage by volume of oxygen in air. (2 mks)

v) Write a chemical equation for the reaction that took place in the bell far.(1 mk)

vi) Both red and blue litmus papers were placed in the resulting solution. State and explain the observations that were made. (2 mks)

b) Painting, oiling, galvanizing or tin plating are of preventing rust.

i) Give the general formula of rust. (1 mk)

ii) How are these methods similar in the way they prevent rusting. (1 mk)

iii) Explain why galvanised objects are better protected even when scratched. (1 mk)

7. The diagram below shows the process of manufacturing sodium carbonate during the solvacy process. Study it and use it to answer the question that follow.

a) Name gases A and B. (1 mk)

b) Name liquid C and solid D. (1 mk)

c) Write equations of the reactions in:

i) Tower P.

ii) Chamber R.

d) Name the product T formed at chamber R and give one of its uses. (2 mks)

e) Explain using ionic equations how sodium carbonate is used to soften temporary hard water. (2 mks)

NAME:…… **INDEX NO**……

SCHOOL:…….. **CANDIDATE'S SIGN** ……..

DATE ……

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

Kenya Certificate of Secondary Education (KCSE)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and Index number in the spaces provided.
2. Answer ALL the questions.
3. Answers must be written in the spaces provided in the question paper.
4. Additional pages must not be inserted.
5. Candidates should check the question paper to ascertain that all the pages are printed.
6. This paper consists of 12 printed pages

FOR EXAMINER'S USE ONLY

QUESTION		MAXIMUM SCORE	CANDIDATE'S SCORE

This paper consists of 8 printed pages.
Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing.

1. You are provided with the following:

   i) Solution M which is 0.2 M sodium hydrochloric acid.

   ii) Solution N which is a Hydrochloric acid

   iii) 1.0g solid X which is a carbonate F_2CO_3.

   You are required to:

   - Standardize solution N
   - Determine the RAM of F in F_2CO_3.

   Procedure

   - Fill the burrete with dilute Hydrochloric acid (Solution N)
   - Pippete 25cm^3 of sodium hydrotide solution M into a conical flask
   - To this solution and 2-3 drops of methyl orange indicator
   - Titrate this solution with solution with solution N and record your result in table I below. Repeat the procedure two more times to complete the table.

Table	1	2	3
Final burette readings(cm^3)			
Initial burette readings(cm^3)			
Volume of HCl used cm^3(solution N)			

(3 mks)

a) i) Determine the average volume of solution N used. (1 mk)

ii) How many moles of sodium Hydroxide are there in 25cm^3 of solution M used. (1 mk)

iii) Calculate the concentration of HCl (solution N) in moles per dm^3 (1 mk)

Procedure II

- Measure 100cm of Hydrochloric acid(solution N) into a clean beaker. Put all solid X in the beaker containing 100cm^3 of solution N. Leave the acid to react with solid X for 3 minutes.
- Label the resulting solution as L.
- Fill the burette with solution L.
- Titrate this solution with 25.0 cm^3 portions of sodium Hydroxide solution M.
- In the conical flask using methyl orange indicator. Repeat the procedure to complete the table II below.

Table II	1	2	3
Final burette readings(cm^3)			
Initial burette readings(cm^3)			
Volume of solution L used cm^3			

(3 mks)

b) i) Calculate the average volume of solution L used. (1 mk)

ii) Find the number of moles of solution L in the average volume. (1 mk)

iii) Find the number of moles of solution L in $100cm^3$. (1 mk)

iv) Number of moles of Hydrochloric acid in the original solution N. (1 mk)

v) Find the number of moles of HCl which reacted with solid X (F_2CO_3) (1 mk)

vi) Find the number of moles of solid X which reacted with acid. (1 mk)

vii) Find the reactive molecular mass of solid X and hence the relative atomic mass of F. (2 mks)

2. You are provided with the following:

i) Solution D, which is 2 M Hydrochloric acid

ii) Solution B, which is 0.1 M sodium Thiosulphate ($Na_2S_2O_3$)

You are required to find out the effect of change of temperature on the rate of reaction between Sodium thioslphate and hydrochloric acid.

NB: The end result of this reaction is the formation of a yellow/ white precipitate of colloidal sulphur.

Equation:

$Na_2S_2O_{3(aq)} + HCl_{(aq)} \longrightarrow S_{(s)} + SO_{2(g)} + 2NaCl_{(aq)} + H2O_{(l)}$

Procedure:

i) Measure 5 cm^3 of solution D into a clean 100cm3 glass beaker.

ii) Place it together with its contents on a white piece of paper with the word CHEM written on it in bold print.

iii) Measure the temperature of the solution D

iv) Record it as shown below in the Table

v) Measure 100cm3 of solution B

vi) Add this to the contents of the beaker in(i) above set off the stop watch or clock immediately.

vii) Record the time taken for the printed word CHEM to become invisible when viewed above the reaction mixture in the 100cm3 beaker

viii) Thoroughly wash the beaker used in (i) above

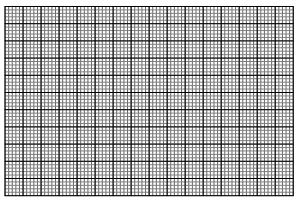
ix) Repeat the experiment using HCl solution D at the temperature indicated in the table.

Test No.	Volume of solution D(HCl) in cm^3	Volume of $Na_2S_2O_3$ solution B cm^3	Temperature ℃	Time in (s)	Reciprical of time 1/t s^{-1}
1	5	10	Room temperature		
2	5	10	30		
3	5	10	35		
4	5	10	40		
5	5	10	45		
6	5	10	50		
7	5	10	55		
8	5	10	60		

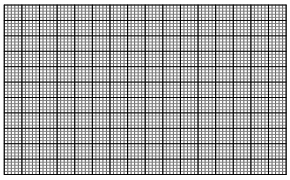
(6 mks)

On the grids provided plot a graph of:

i) Time (sec) on x axis against Temperature ℃ y axis



ii) Recipricoal of time 1/t s^{-1} x axis against Temperature ℃ (y axis) (3 mks)



b) Comment on the effect of change of temperature on the rate of the reaction between sodium thiosulphate and hydrochloric acid.

c) Use the graph of temperature against the recipricoal of time in a) (ii) above to estimate the time that the reaction would take at 58 ℃

d) Use the graph of time against temperature in a(i) bove to calculate the rate of reaction at 43℃

3. a) You are provided with solid L. Use it to carry out the tests below and record your results in the table provided.

TEST	OBSERVATION	INFERENCES
a) Transfer all solid L into a boiling tube. Add 10cm3 of 1M HNO3 and shake Dip a glass rod into calcium Hydroxide solution and place it at the mouth of the boiling tube.	1 mk	½ mk
b) To about 2 cm3 of the solution in a test tube add 3 drops of lead II Nitrate solution and warm	1 mk	½ mk
c) To about 2 cm3 of the solution in another test tube add 2M sodium Hydroxide solution drop wise till in excess	½ mk	½ mk
d) To about 2 cm3 of solution in		

another test tube dip a clean metallic spatula in the solution and place it on a burner flame.	½ mk	½ mk

b) You are provided with solid Q, you are required to:

i) Carry out the tests described below on solid Q

ii) Record your observations and inference accordingly

iii) Test any gases provided.

Procedure:

i) Place a spatula full of solid Q in a boiling tube

ii) Add about 15 cm3 of distilled water and shake

iii) Divide the resulting solution into four portions

iv) Use a universal indicator paper to test portion one of the solution

Observation	Inference
½ mk	½ mk

v) Add a spatula full of sodium carbonate to the second portion.

Observation	Inference
½ mk	½ mk

vi) Add three drops of acidified Potassium Manganate (vii) solution to the third portion.

Observation	Inference
½ mk	½ mk

vii) Place 4 cm3 of Ethanol in a test tube Add two drops of concentrated Sulphuric (vi) acid and then a spatula full of solid Q shakes well and warm the mixture carefully. Pour the warm mixture into the smell.

Observation	Inference
½ mk	½ mk

NAME: …….. INDEX NO: ……...

SCHOOL: …… CANDIDATE SIGN: ……

DATE: ……

451/1
COMPUTER STUDIES
PAPER 1
(Theory)
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

451/1
COMPUTER STUDIES
PAPER 1
(Theory)
TIME: 2 ½ HOURS

INSTRUCTIONS TO CANDIDATE:

- Write your **name**, **index number** and **school** in the spaces provided.
- This paper consist of **two** sections A and B.
- Answer **ALL** the questions in section **A.**
- Answer question **16** (compulsory) and any other **three** questions from section **B**.
- All answer MUST be written in the spaces provided in this question paper.

SECTION	QUESTION	ACTUAL SCORE
A	1 – 15	
B	16	
	17	
	18	
	19	
	20	
TOTAL SCORE		

1. a) Define a system unit. (1 mk)

   b) State two functions of the control unit. (2 mks)

2. a) Define a computer laboratories. (1 mk)

   b) State two functions of the ups. (2 mks)

3. Discuss the following types of computers. (2 mks)

   i) Dedicate purpose computers

   ii) Embedded computers

4. State two advantages of using biometric devices in voting. (2 mks)

5. Discuss one are computers can be used in science and research. (2 mks)

6. State two types of database models. (2 mks)

7. State two types of database models. (2 mks)

   b) By use of examples, differentate between a function and a formula in spread sheets. (2 mks)

8. With the of a diagram, explain amplitute and periodic time. (3 mks)

9. a) Explain industrial espioriage. (1 mk)

   b) Describe data encryption. (2 mks)

10. What are data terminal equipment? (1 mk)

11. a) Explain open learning. (1 mk)

    b) Computers are used to enhance marketing in a variety of ways, one of which is E-business. Explain how computers are used in E-business. (2 mks)

12. Discuss two computational errors giving example in each case. (4 mks)

13. Differentiate between warm and a virus. (2 mks)

14. Differentiate sequential file organization from indexed sequential file organization. (2 mks)

15. With the aid of a diagram, differentiate between analog and digital data signals. (2 mks)

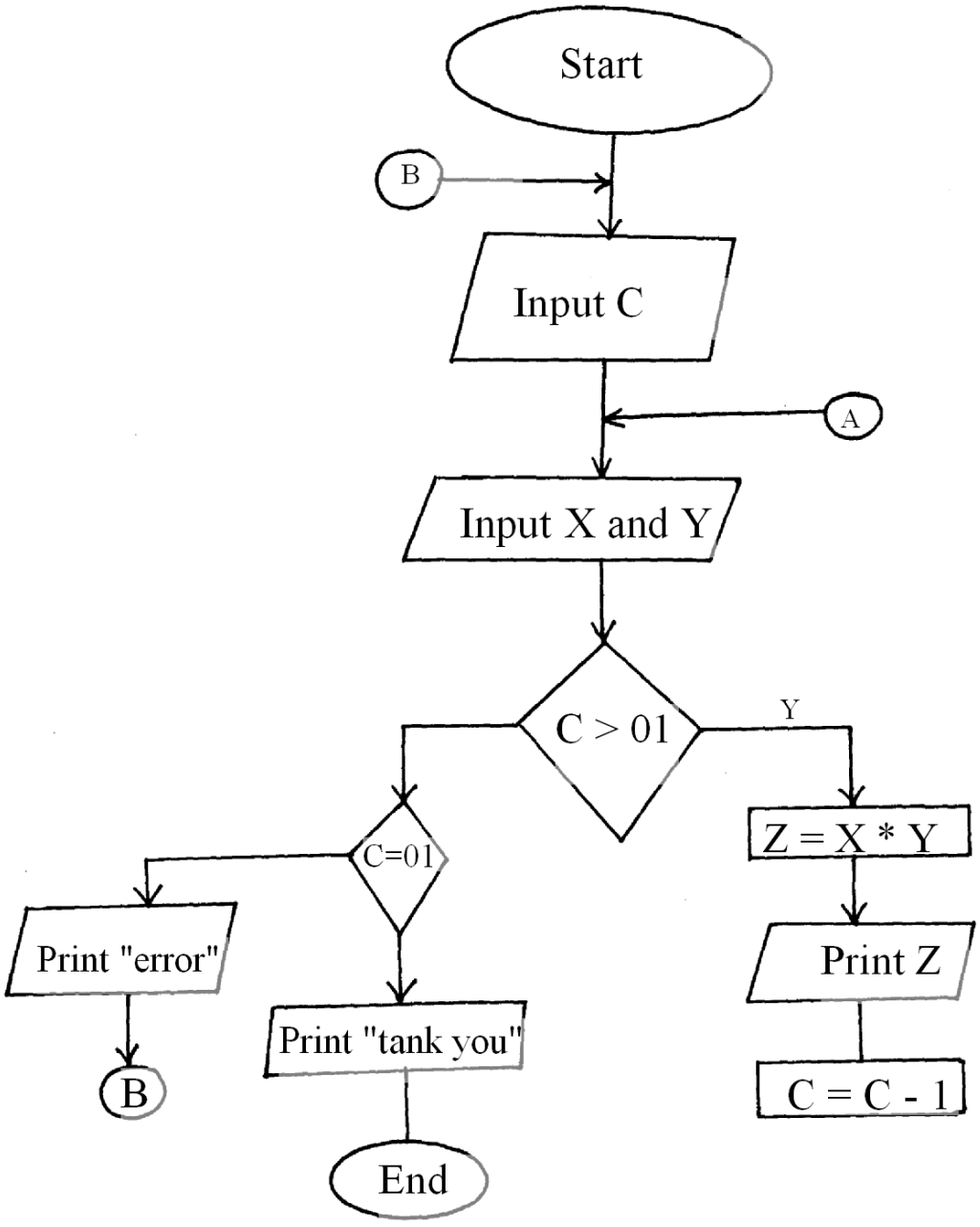
SECTION B

Answer question 16 and any other three questions in this section.

16. a) State two types of selection controls used in high level programming language. (2 mks)

b) Give two characteristics of a good program. (2 mks)

c) Use the flow chart below to answer the questions that follow:



i) Write a pseudocode for the above flow chart. (6 mks)

ii) Write the expected output if c = 2, x = 2 and y = 3

iii) Modify the flow chart so that the program does not accept any negative inputs. (3 mks)

17. a) State and explain two disadvantages that will come about if a network was to be installed in your school. (4 mks)

b) Discuss two disadvantages of wireless networks. (4 mks)

c) Write the following abbreviations in full. (4 mks)

i) F.T.P

ii) H.T.T.P

d) With the aid of a diagram, discuss Hybrid topology. (3 mks)

e) Discuss one advantage of a client/ server network. (2 mks)

18. a) Explain why a computer is able to display the correct time and date when it has just be switched on. (2 mks)

b) Discuss two types of special memories found I computer system. (4 mks)

c) i) Define a Bus with reference to a computer system. (1 mk)

ii) List to examples of buses. (2 mks)

d) Distinguish between a power cable and interface cable. (2 mks)

e) Differentiate between the different types of RAM. (4 mks)

19. a) i) Define a system. (1 mk)

ii) Explain system entropy. (1 mk)

b) State three circumstances that can lead to development of information systems. (3 mks)

c) Distinguish parallel changes over from straight change over as used in system implementation. (2 mks)

d) Discuss two fact finding methods. (4 mks)

e) Differentiate an open system from a closed system. (2 mks)

f) List two responsibilities of a system analyst. (2 mks)

20. a) State two ways of representing a signed number. (2 mks)

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

i) ASCII

ii) EBCDIC

c) Convert 110011.0110 to Decimal

d) Differentiate between absolute value and base value. (2 mks)

e) Outline two reasons for using binary system in computers. (2 mks)

f) Perform $111o11001000_2 - 11011011001_2$ using ones compliment convert your answer to Hexadecimal. (4 mks)

NAME:……..INDEX NO:……

SCHOOL:…….. CANDIDATE SIGN:…...…….

DATE...…….

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

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

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

Instructions to candidates.

a) Indicate your name and index number at the top right hand corner of each printout.
b) Write your name and index number on the CD provided.
c) Write the name and version of the software used for each question attempted.
d) Answer **all** questions.
e) All questions carry equal marks.
f) Passwords should not be used while saving.
g) Make a print out of the answers on the answer sheet.
h) Hand in all the print out and the CD.

This paper consist of 4 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

1. The table below shows the admission numbers and names of five students and their scores in six subjects in a mock examination.

ADM. NO.	Name	English	Maths	Biology	Chemistry	Physics	History
2020	Victor Mutiso	77	68	75	35	58	80
2032	Zablon Onyango	44	77	80	42	60	73
2037	Pauline Nafula	68	59	91	39	59	75
2040	Naom Cherop	55	80	89	48	38	66
2044	Jameleck Kioko	69	62	83	43	44	70

a) Enter the above data into a worksheet and save the file as 'mock results' (13mks)

b) Using a formula, calculate the; (4mks)

a) Total score for each students

b) Mean score for each student

c) Use a function to obtain the mean for each subject (3mks)

d) A student is awarded a 'pass' if their mean score is 60% or more. Use a function to determine the number of students who are awarded 'pass' (2mks)

e) Format the worksheet as follows

- Borders : single line
- Subject heading : align 90°
- Marge the cells above all the subjects headings so that the text 'SUBJECT' is above them.
- Mean score : One decimal place (4mks)

f) Copy the contents of the worksheet to a blank worksheet and insert a blank column after every subject.

Label the new columns as Eng B, math B, Bio B, Chem B, Phy B, and Hist B respectively. On the inserted columns, compute the grades using IF function based on the following criteria.

(10mks)

Mean score	Grade
score≥75	A
60 ≤ score <75	B
50 ≤score < 60	C
45 ≤score <50	D
Score < 45	E

g) Hide all the columns containing score values and save the worksheet as "Mock results 2"

(2mks)

i)Create a bar chart to compare students mean score and label the chart accordingly. (10mks)

j) Print the two worksheets and the bar chart (4mks)

2. The data in the table was extracted from a survey data on employment.

Table 1: EMPLOYEE TABLE

Name	Year of birth	Employee ID NO.	Employer ID	Job category
DAISY	1980	13144	01	GK4
DAVID	1970	11100	04	GK3
DOREEN	1984	14010	02	GK1
DAVIN	1976	12110	05	GK1
ALLAN	1973	11410	03	GK2
KATE	1968	10570	04	GK3
ZEDDY	1990	11040	05	GK3
PIUS	1998	15978	03	GK2
ZION	1992	17192	02	GK4
BOB	1993	18965	05	GK4

Table 2: EMPLOYMENT TYPE

Job Category	Job Description
GK1	Casual
GK2	Temporary
GK3	Contract
GK4	Permanent

Table 3: EMPLOYER TABLE

EMPLOYER ID	EMPLOYER NAME
01	ONYANGO
02	WAMBUA
03	OSHIRO
04	KATANA
05	AWINJA

a) i) Create a database named “STAFF” to store the above (14mks)

ii) Create relationships between the tables (4 ½ mks)

iii) Use forms to enter data into the tables (10 ½ mks)

b) i) Generate a report to display the name year of birth, age and employer’s name for the employees who will be over 30years old by the year 2015 (10mks)

ii) Compute the mean age of employees on the report you created in b(i) above. (2mks)

c) i) Create a query to display the employees and their jo description. Save the query as “STAFF TYPE” (3mks)

ii) Create a pie chart based on the query in c(i) above to display the proportion of employees in various job description.
Save the report as CHART

d) Print i) Three tables

ii) Two reports

iii) Output of query results for STAFF TYPE.

313/1
Christian Religious Education
PAPER 1
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

313/1
Christian Religious Education
PAPER 1
TIME: 2 ½ HOURS

INSTRUCTION

a. Write your name and index number in the spaces provided above.
b. Sign and write the date of the examination in the spaces provided
c. This paper has six questions
d. Answer any five questions in the booklet/writing sheets provided.
e. Attach the question paper on writing sheets.

FOR EXAMINER'S USE ONLY

Questions	1	2	3	4	5	6	Candidate score
Candidate score							

1.	a)	In which way did God demonstrate His love for Human being after the coming of sin into the world?	(6 mks)
	b)	give four differences between the 1st creation and 2nd creation accounts.(Genesis 1 and 2)	(8 mks)
	c)	With references to the Genesis stories of creation in chapters 1 and 2, outline the attributes of God.	(6 mks)
2.	a)	Give the main features of the call of Moses(Ex 3:1 – 22).	(6 mks)
	b)	Give four significance of the preparations for the Passover Ex 12 : 1-31)	(8 mks)
	c)	Give reasons why Christians find it difficult to worship God.	(6 mks)
3.	a)	Give reasons why the Isrealites demanded for a king.	(6 mks)
	b)	Give four ways that prophet Elijah used to fight idolatry in Isreal.	(8 mks)
	c)	Identify Six forms of corruption in the society today.	(6 mks)
4.	a)	What is the importance of prophets in the old Testament.	(6 mks)
	b)	Explain four visions of prophet Amos.	(8 mks)
	c)	How does the church prepare itself for the coming judgement?	(6 mks)
5.	a)	Give the issues addressed by prophet Jeremiah during the temple sermon.	(6 mks)
	b)	What is the content of Jeremiah's letter to the exiles.	(8 mks)
	c)	Give six forms of idol worship in the society.	(6 mks)
6.	a)	What is the Africa traditional view of marriage.	(6 mks)
	b)	Show how the traditional African society prepared for marriage.	(8 mks)
	c)	Give six reason for divorce in the African traditional society .	(6 mks)

313/1
Christian Religious Education
PAPER 2
TIME: 2 ½ HOURS

Kenya Certificate of Secondary Education (KCSE)

313/1
Christian Religious Education
PAPER 2
TIME: 2 ½ HOURS

INSTRUCTION

a. Answer any five questions in the booklet/writing sheets provided.

FOR EXAMINER'S USE ONLY

Questions	1	2	3	4	5	6	Candidate score
Candidate score							

1. a) Outline the prophecies of prophet Jeremiah concerning the Messiah. (7 mks)
   b) Describe the activities that took place during the dedication of Jesus in the temple Lk 2:22-40 (8 mks)
   c) Outline the relevance about Jesus by Simeon and Anna when he was presented in the temple. (5 mks)

2. a) Describe the incident when Jesus was rejected at Nazareth Lk 4: 16 – 30 (7 mks)
   b) Explain four reasons why Jesus faced opposition from the Pharisees in Galilee (8 mks)
   c) Give five ways in which church leaders can respond to those who oppose them in their work. (5 mks)

3. a) Narrate the testimony of the holy women regarding the resurrected Jesus Christ (Lk 24:1-10) (7 mks)
   b) Give six reasons why Jesus disciples responded to the news of his resurrection with fear and disbelief. (6 mks)
   c) Give seven reasons why violence against women is rampant in Kenya today. (7 mks)
4. a) Give five ways in which Christians discern the gifts of the holy spirit. (5 mks)
   b) What were the teachings of Jesus on the role of the holy spirit (8 mks)
   c) State seven ways in which the church promotes the unity of believers. (7 mks)
5. a) What are the features of a Traditional Africa family. (7 mks)
   b) Explain four reason why Christian families find it difficult to live in harmony. (5 mks)
   c) Outline the advantages of a prayer in a Christian family. (5 mks)
6. a) Explain the biblical teaching on law. (8 mks)
   b) Outline the duties of citizens in Kenya. (7mks)
   c) In what way is the church helping reduce tribalism in Kenya today. (5 mks)

NAME:……..INDEX NO:……

SCHOOL:…….. CANDIDATE SIGN:…...…….

DATE...…….

449/1
DRAWING AND DESIGN
PAPER 1
TIME: 2 ½ HOURS

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

449/1
DRAWING AND DESIGN
PAPER 1
TIME: 2 ½ HOURS

Instructions to candidates.

a) You should have the following for this examination;
   - Drawing instruments.
   - 3 sheets of drawing paper size A3.
   - Scale rule.
b) This paper consists of section A, B and C.
c) Answer all the questions in section A and B and any TWO questions from section C.
d) All the dimensions are in millimetes unless otherwise stated.

This paper consist of 12 printed pages.
Candidate should check the question paper to ascertain all pages are printed as indicated
And no questions are missing.

SECTION A (Answer all question in this section)

1. Define the following properties of materials. (4mks)

   i) Compressive strength

   ……

   ii) Toughness

   ……

   iii) Ductility

   ……

   iv) Malleability

   ……

2. a) Differentiate between thermoplastics and thermosetting plastics. (3mks)

   ……

   ……

   ……

   ……

   b) Draw an internal tangent to two unequal circles. (4mks)

3. With the aid of simple sketches show the following methods of conversion. (4mks)

   i) Plain sawing

   ii) Quarter sawing

4. State and explain the two methods of timber seasoning (4mks)

   ……

   ……

   ……

   ……

5. a) What is meant by; (3mks)

i) Ferrous metal

……

……

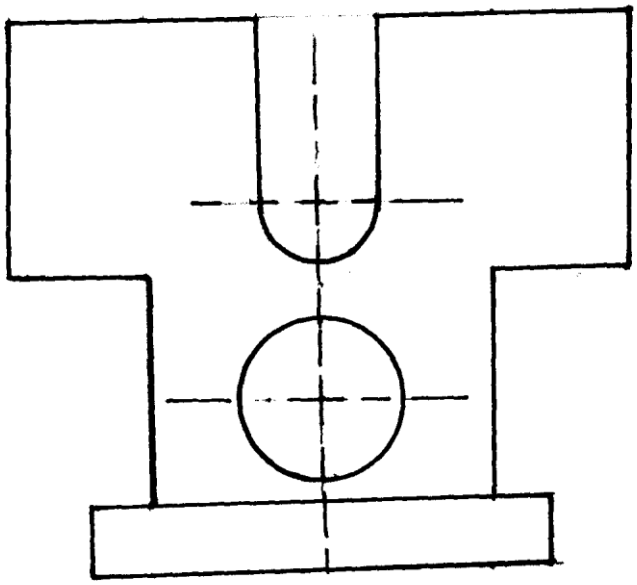
ii) Non-ferrous metal

……

……

b) With the aid simple sketches show oblique cavalier and cabinet. (4mks)

6. The template below is drawn to a scale of 1 : 3, measure and dimension the figure. (4mks)



7. Construct a regular hexagon whose distance across flats is 56mm. (4mks)

8. Construct a plain scale on which 4cm represent 1cm with the longest distance represented being 3cm and the shortest distance is 1mm. mark on the scale the following measurements. (5mks)

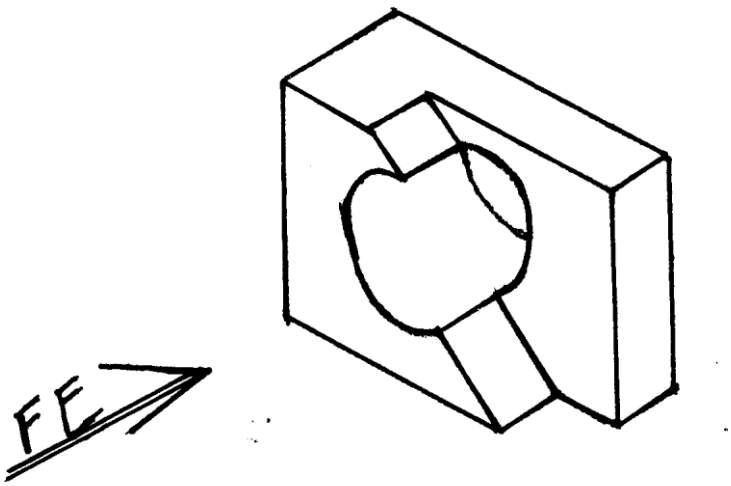
30mm

29mm

17mm

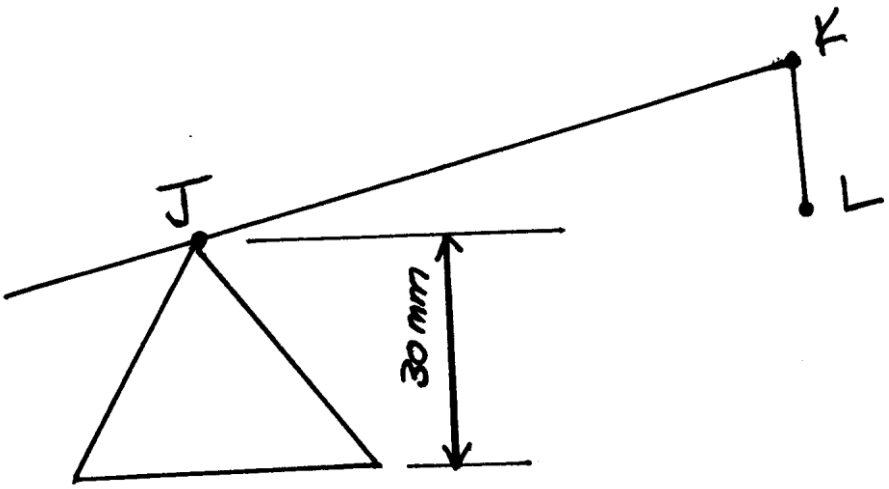
6mm

9. The figure below shows a pictorial view of a block. In good proposition sketch the block to third angle projection. (4mks)



10. The figure below shows a line diagram of a jib crane JKL. The jib JK swivels about centre J as it lifts the load L suspended at the end of chain KL. Plot the locus of the load L as the jib lifts from horizontal position to an angle of 85^0. (5mks)

JK= 90mm
KL = 30mm



SECTION B (20 marks)

This question is compulsory.

11. Figure 7 shows parts of a machined component drawn in first angle projection. Assemble the parts and draw the following: (20mks)

    a) Sectional front elevation through the cutting plane F-F.

    b) The plan

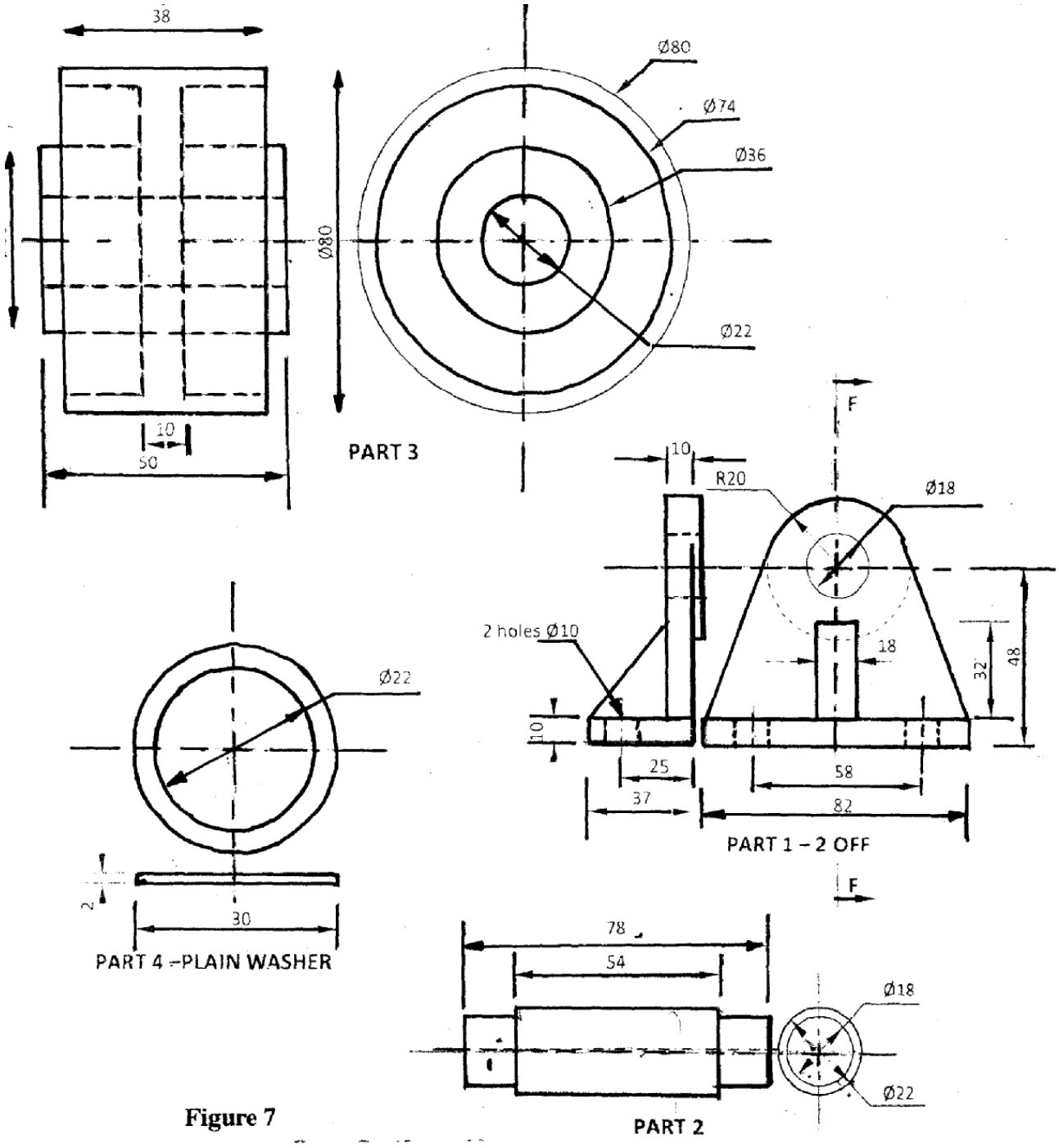
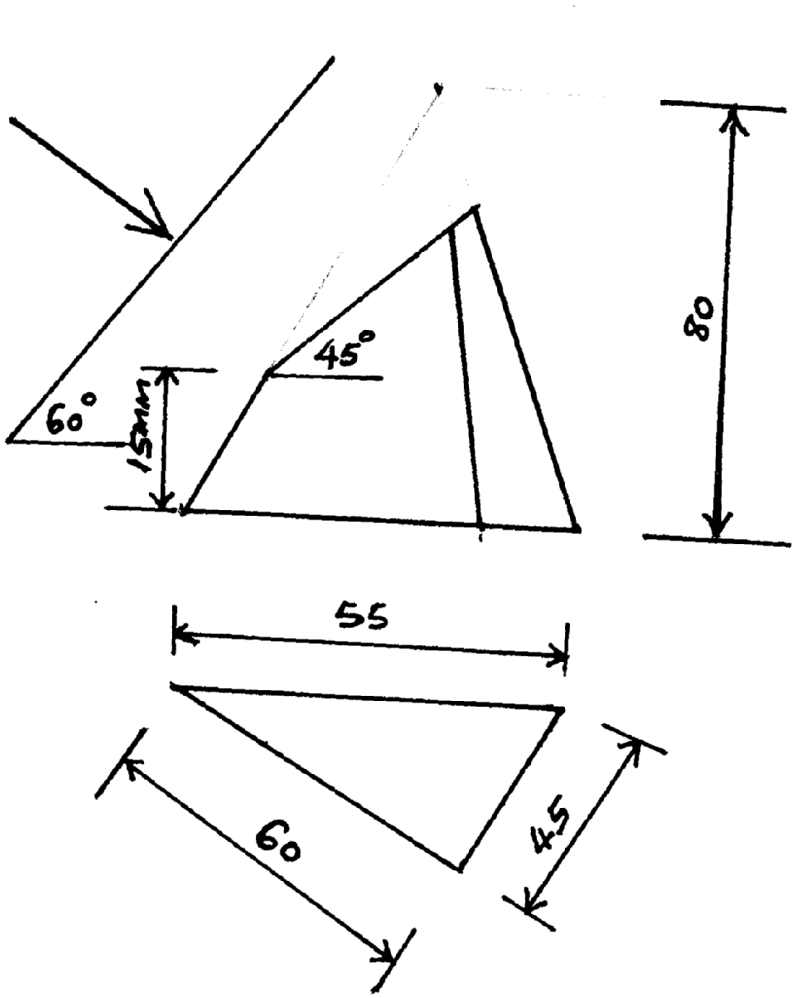


Figure 7

SECTION C (Answer any two questions)

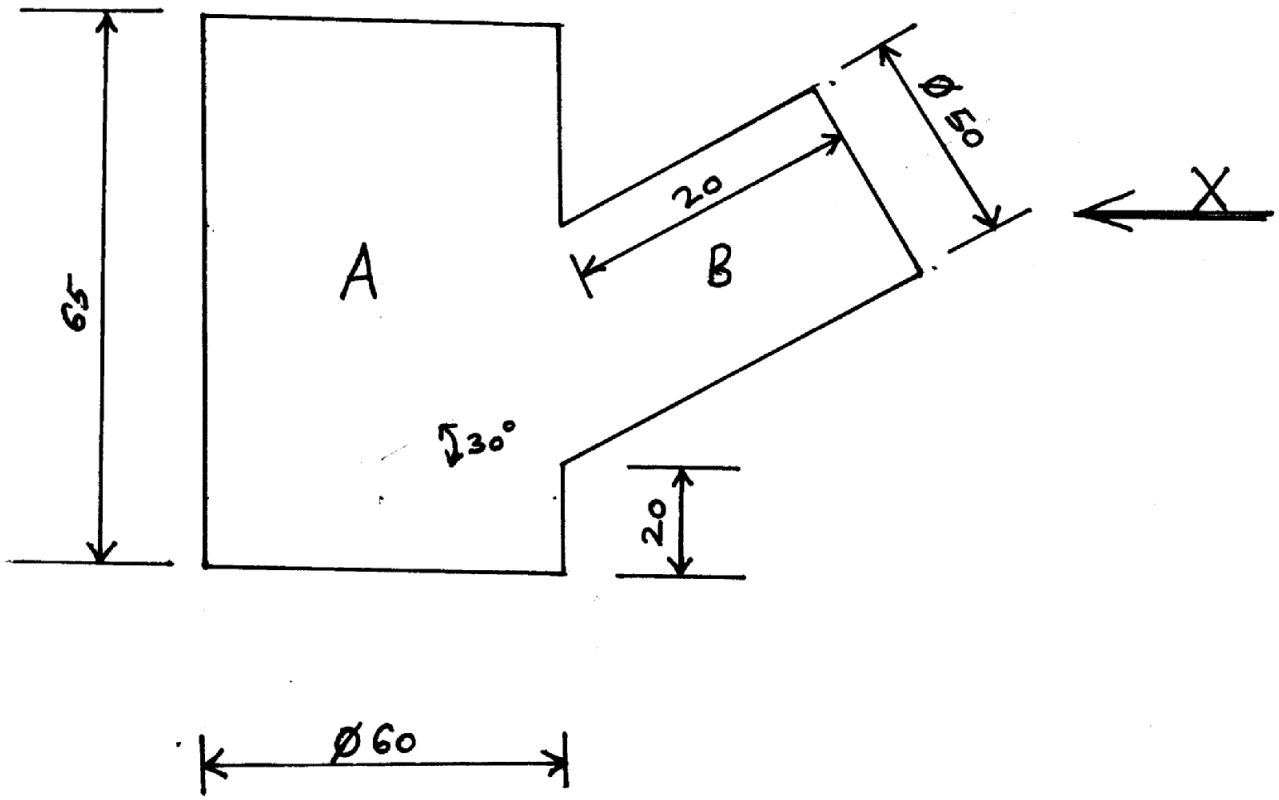
12. The figure below shows a front elevation and uncompleted plan of truncated triangular based right pyramid. (15mks)

Draw; i) Front elevation
ii) A complete plan
iii) End elevation in the direction of Z.
iv) True shape of cut
v) Auxiliary view on front elevation at 30^0



13. The figure below shows a front elevation of two pipes intersecting at an angle. (15mks)

Draw; a) The front elevation
b) Plan
c) End elevation in the direction of arrow X.
d) Curve of intersection.
e) Development of pipe B.



14. The figure below shows three orthographic views of a machined block drawn in first angle orthographic projection. Draw full size isometric view of the block taking X as the lowest corner. (15mks)