

FORM 2 TERM 3 OPENER

ALL SUBJECTS

Dear Students, Attempt These Opener Exams!

For Marking Schemes Call 0705525657

FORM 2 TERM 3 OPENER

NAME.....ADM. NO.....CLASS.....

MATHEMATICS

TIME: 2½ HRS.

FOR EXAMINER'S USE ONLY:

SECTION I

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

| | | | | | | | | |
|----|----|----|----|----|----|----|----|-------|
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | TOTAL |
| | | | | | | | | L |

SECTION II

GRAND TOTAL

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Ensure that all the pages are printed and no question(s) are missing SECTION I (50 MARKS)

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

1. Evaluate

(3 Marks)

$$\frac{-12 \ 3 \times 4 - (-15)}{-5 \times 6 \ 2 + (-5)}$$

2. Evaluate without using a calculator.

(3 Marks)

$$\frac{(2\frac{3}{7} - 1\frac{5}{6}) \div \frac{5}{6}}{\frac{2}{3} \text{ of } 2\frac{1}{4} - 1\frac{1}{7}}$$

3. Use logarithms to evaluate.

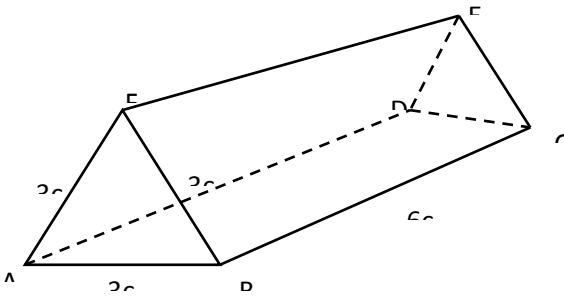
(4 Marks)

$$\sqrt[4]{\frac{43.52 \times 0.08792}{785.3}}$$

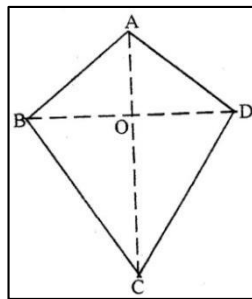
4. Find the equation of the L_1 in the form $y = mx + c$ which is perpendicular to the line $3y + 2x = 6$ and passes through the point $(-3, 4)$.
(3mks)

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5. The diagram below represents a prism of length 6cm whose cross-section is an equilateral triangle of sides 3cm. Draw a well labeled sketch of the net of the prism. (3 Marks)



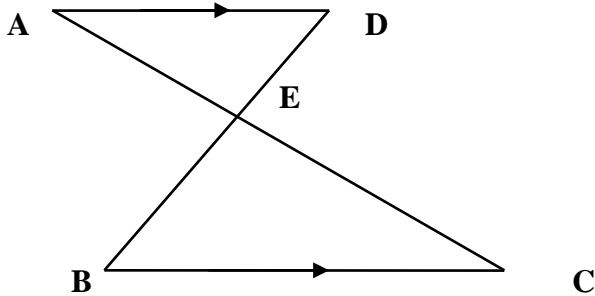
6. The figure below represents a kite ABCD, $AB = AD = 15$ cm. The diagonals BD and AC intersect at O. $AC = 30$ cm and $AO = 12$ cm. Find the area of the kite (3mks)



7. Mrs. Musyoka has Sh. 700 in Sh. 50 notes and Sh. 100 notes only. If she has a total of 11 notes find how many notes she has of each denomination. (3mks)

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8. In the figure below $AD \parallel BC$. AC and BD intersect at E . Given that $AE: EC = 1:5$ and $BD = 12$ cm, calculate the length of DE .



(3 marks)

9. Given that $(3x - 35) = \cos \cos (x + 20)$. Find $x + 10$ (3mks)

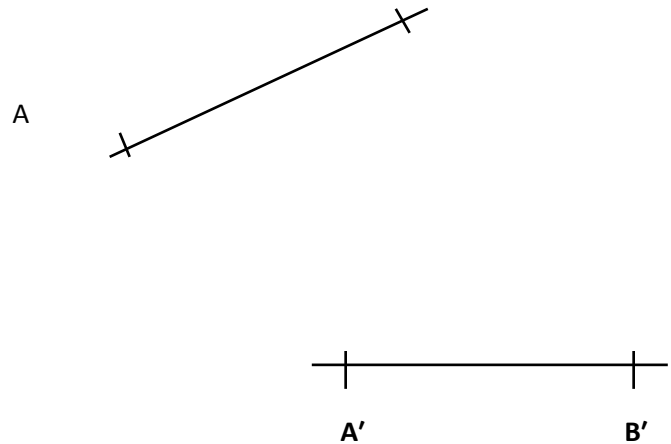
10. Without using a mathematical tables or a calculator evaluate $\sqrt{\frac{153 \times 0.18}{0.68 \times 0.32}}$. (3mks)

11. Three bells ring at intervals of 9 minutes, 15 minutes and 21 minutes. The bells will next ring together at 11.00pm. Find the time the bells had last rung together. (3 Marks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

12. The surface areas of two similar bottles are 12cm^2 and 108cm^2 respectively. If the bigger one has a volume of 810cm^3 . Find the volume of the smaller one. (3 Marks)

13. In the figure below $A'B'$ is the image of AB under rotation. By construction, find and label the centre O of the rotation. Hence, determine the angle of the rotation.(4mks)

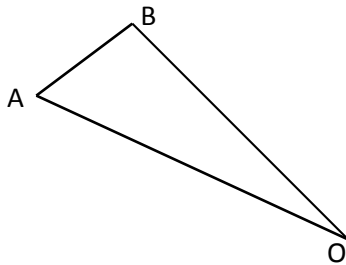


14. Mr. Ombogo the principal of Chiga secondary would wish to cover the floor of the new administration block using the square tiles. The floor is a rectangle of sides 12.8m by 8.4m . Find the area of each of the largest tiles which can be used to fit exactly without breaking (3mks)

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15. The size of an interior angle of a regular polygon is $(3x)^\circ$ while the exterior angle is $(x + 20)^\circ$. Find the number sides of the polygon (3 Marks)

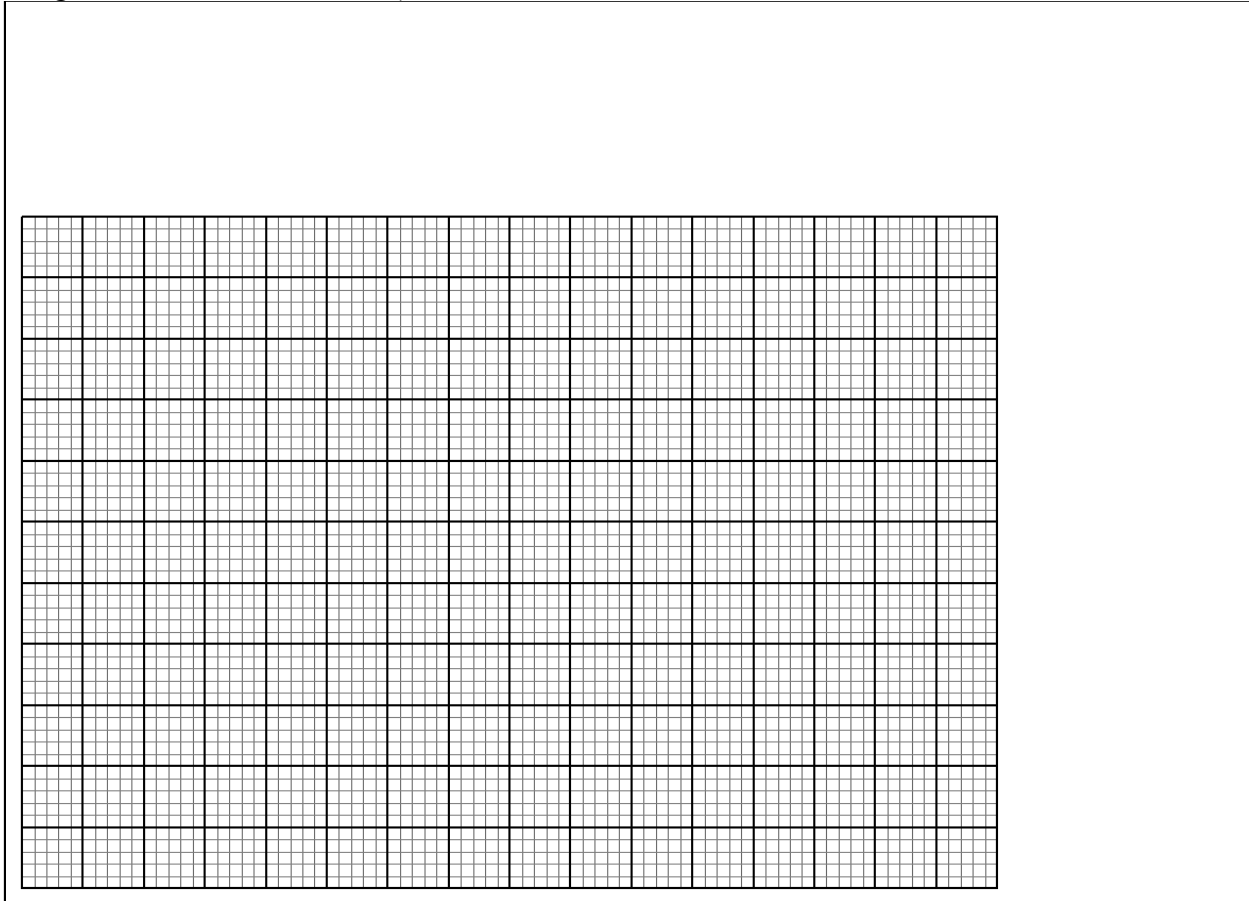
16. In the figure below triangle ABO represents a part of a school badge. The badge has as symmetry of order 4 about O. Complete the figure to show the badge. (3mks)



SECTION II (50MKS)

Answer 5 questions only in this section

17. The vertices of quadrilateral OPQR are O (0, 0), P (2, 0), Q (4, 2) and R (0, 3). The vertices of its image under a rotation are O' (1, -1), P'(1, -3) Q'(3, -5) and R'(4, -1).



- (a) (i) On the grid provided, draw OPQR and its image O'P'Q'R' (2marks)
- (b) (ii) By construction, determine the centre and angle of rotation. (3marks)
- (c) On the same grid as (a) (i) above, draw O''P''Q''R'', the image of O'P'Q'R' under a reflection in the line $y = x$ (3marks)
- (d) From the quadrilaterals drawn, state the pairs that are:
 - (i) Directly congruent; (2marks)
 - (ii) Oppositely congruent (2marks)

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18. A slaughter house bought a number of goats at Sh. 2000 each and a number of bulls at Sh. 15000 each. They paid a total of Sh. 190,000. If they bought twice as many goats and three bulls less, they would have saved Sh. 5000.

(a) If the number of goats and bulls bought were x and y respectively, write down two simplified equations involving the above information. (2mks)

(b) Solve the two equations above and hence find the number of each type of animals bought.(4mks)

(c) The slaughter house sold all the animals at a profit of 25% per goat and 30% per bull. Determine the total profit they made. (4 Marks)

19. a) In a safari rally drivers are to follow route ABCDA. B is 250km from A on a bearing of 075° from A. C is on a bearing of 110° from A and 280km from B. The bearing of C from D is 040° and a distance of 300km. By scale drawing show the position of the point A, B, C and D. (4mks)

b) Determine

(i) The distance of A from C. (2mks)

(ii) The bearing of B from C. (1mk)

(iii) The bearing of A from D. (1mks)

(iii) The distance A from D (2mks)

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20. A saleswoman is paid a commission of 20% on goods sold worth over Ksh 100,000. She is also paid a monthly salary of Ksh 12,000. In a certain month, she sold 360 handbags at Ksh 500 each.

(i) Calculate the saleswoman's earnings that month. (3 mks)

(ii) The following month, the saleswoman's monthly salary was increased by 10%. Her total earnings that month were Ksh 17,600. Calculate the total amount of money received from the sales of handbags that month. (5 mks)

(ii) The number of handbags sold that month. (2 mks)

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21. Using a ruler and a pair of compasses only, draw a parallelogram ABCD, such that angle DAB = 75° .
Length AB = 6.0cm and BC = 4.0cm.
From point D, drop a perpendicular to meet line AB at N. (7 Marks)

(i) Measure length DN. (1 Mark)

(ii) Find the area of the parallelogram. (2 Marks)

22. Two cubes of length 5cm and 7cm are melted and cast into a single cube.

Determine the:

i. Volume of the new cube (3mks)

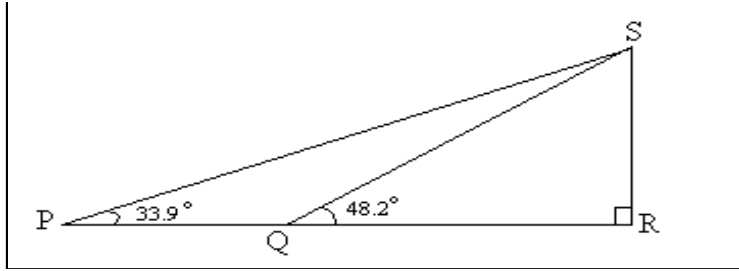
ii. Length of the new cube correct to 1 decimal place(2mks)

iii. Surface area of the new cube (2mks)

b. Suppose that it was instead cast into a cylinder of radius 3.5 cm. what would the height be to the nearest cm? Take $\pi = \frac{22}{7}$, (3 mks)

23. The diagram below shows vertical telephone pole RS supported by wires SP and SQ pegged at points P and Q respectively on a level ground. Points P and Q are on the same straight line from the base R of the pole. The angles of elevation of S from P and Q are 33.9° and 48.2° respectively. Given that PR = 5 m, calculate:

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(a) The distance QR

(4 marks)

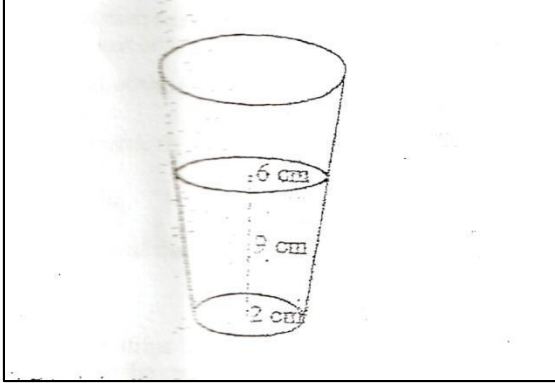
(b) The length of the wires SP and SQ

(4 marks)

(c) If the cost of the pole and labour is sh. 1600 and the cost of 1 meter of the wire is sh. 233. Find the total cost of the installation. (2 marks)

24. A glass in the form of a frustum of a cone, is represented by the diagram below. The glass contains water to a height of 9 cm. The bottom of the glass is a circle of radius 2 cm while the surface of the water is a circle of radius 6 cm.

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657



(a) Calculate the volume of the water in the glass. (3Mks)

(b) When a special marble is submerged into the water in the glass, the water level rises by 1 cm.

Calculate :

(i) the volume of the marble (4 marks)

(ii) the radius of the marble (3 marks)

SECTION B: COMPREHENSION (20MKS)

Read the following passage carefully and answer the questions that follows:

The breeze on the third mainland bridge would have made anybody sleepy at that time of the morning. It was 2 a.m, the traffic on the bridge had practically ceased. The morning night was approaching the hour when only the police and thieves would be on road unless, of course, there was anybody foolhardy enough to share the hours with them.

This was Lagos and the armed robbers were laying siege to the city. For the three policemen on check-point duty, it was a time to find somewhere to sit down, hidden well away from the lights. They would check a few more cars and that would be all. After standing all day they were tired. The sergeant in charge of the check point was the first to put his bolt- action rifle down. He sat down and lit himself a cigarette. The cigarette glowed in the darkness.

“Check a few more cars then come and rest,” said the sergeant. “After all it’s not our father’s work. Besides, how much are they paying us?”

The others smiled at him, their smiles hardly visible in the dark. No, it wasn’t their father’s work and the pay was **paltry**. The sergeant was right. It stood to reason. If it wasn’t for the money they collected on check-point duty, things would be very bad indeed.

“How much have we made today?” asked the sergeant. Constable Dilibu put his hand in to his pocket and brought out the notes he had stuffed in there. The sergeant’s torch **illuminated** the area while he counted them. Constable Dilibu was barely two months out of the police college, Ikeja. He was just nineteen, but he was learning fast. Although he made at least five naira extra per night, he didn’t really like check-point duty. He was too scared of the armed robbers. Those boys played much too rough- if you could call it a game.

“Twenty – nine naira, “fifty kobo,” constable Dilibu answered at last.

“Good,’ said the sergeant. He calculated that the two naira, fifty kobo extra would be his own. He liked it when he made more than the boys. It showed who was the boss.

At first the lights in the distance were like two small illuminated dots floating in the air. The car was travelling very fast. May be another party-goer, they thought. The two constables braced themselves. This could be their chance to make more money for the night.

The sergeant took another puff at his cigarette. He was well satisfied with the night’s take. The boys could take care of the oncoming car by themselves.

Dilibu flashed his torch, moving it up and down in the manner “slow down and stop.”

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

The car decelerated and came to a stop right in front of the policemen. The driver was no ordinary motorist. He knew how to handle the car. Dilibu shone the torch inside.

“Coming from a party?” He enquired. The five men in the car did not answer. “Come and open your boot,” Dilibu ordered. The driver took the key out of the ignition.

“Take the key and check it yourself,” he said. The constable took the key and walked round to the boot. He opened it, **peered** in, closed it again and walked back to the driver. The boot was empty. These men were definitely up to something, Dilibu thought. He could feel it, somehow. They made him nervous.

The sergeant strolled over. He knew, too. They were men of the underworld all right. The quiet types were always the most dangerous.

The man sitting in the owner’s corner spoke. “Listen, my brother. What’s your concern? What’s your problem? Why get yourself killed for this country? What will you gain – level five?”

The reference to the sergeant’s salary touched a sore point. The driver held out his hand for the key. The man in the owner’s corner spoke again. “Take this,” he said, holding out his hand to the sergeant.

The sergeant instinctively put out his hand and took what the man was **proffering**. The feel of the wad of money told him there must be at least fifty naira there.

“All the big men are enjoying themselves while we are here suffering,” the man added. There was no real sympathy in his voice.

“That’s true, my brother,” the sergeant agreed. He did not need convincing. They were outnumbered. He was sure the men were better armed too, even if the guns were not visible.

QUESTIONS

- a) Why had the traffic on the bridge ceased? (2mks)

- b) According to the passage, what was the main problem in the city. (2mks)

- c) Give two reasons why the sergeant said that they should check a few cars and then rest. (2mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

d) Identify one sentence from the passage that best explains how the officers make their end meet. (2mks)

e) For how long had constable Dilibu worked? (1mk)

f) Rewrite the sentences adding a question tag. (2mks)

i) He was too scared of the armed robbers.

ii) The boys could take care of the oncoming car by themselves.

g) "Come and open your boot," Dilibu ordered. (rewrite in reported speech) (1mk)

h) In about 40 words, summarize constable Dilibu's actions to answer the question: "How much have we made today?" (4mks)

i) Explain the meaning of the following words as used in the passage. (4mks)

i) Paltry-

ii) Peered-

iii) Proffering-

iv) Illuminated-

SECTION C CLOZE TEST (10MKS)

Fill in the blank spaces with the most appropriate word

Excessive consumption (1)_____ alcohol is a big problem in our society today. Unfortunately, many people are not (2)_____ of its many negative effects. It can adversely affect us physically, socially (3) _____ economically.

Let us consider what alcohol (4)_____ to your health. Although alcohol has a high level of calories, it does not contain nutrients.

Actually, (5)_____ interferes with absorption of nutrients in the body system. (6)_____ you consume alcohol, there is the likelihood (7)_____ being malnourished. Moreover, it has been established that alcohol encourages the development of cancer of the pancreas and the stomach.

In addition, consuming alcohol, even if lightly, in pregnancy, can (8)_____ physical and mental retardation of the unborn child. Alcohol also causes a fatal damage of the liver called cirrhosis. Since the liver is a main (9)_____ organ, damages to it disrupts (10)_____ body processes.

SECTION D ORAL SKILLS (15MKS)

A. Complete the following telephone conversation between the principal of Utawala Academy and Mrs. Wanjau, who is a parent to Jack, one of the students.

(7mks)

Principal: _____ (1mk)

Mrs. Wanjau: Speaking. May I help you?

Principal: This is the principal of Utawala Academy.

Mrs. Wanjau: Hi! How is Jack? Is he alright?

Principal: _____ (2mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

Mrs. Wanaju: A whole week! Why didn't you call me?

Principal: _____
_____ (2mks)

Mrs Wanjau: Yes, I will be there very early in the morning. I hope that all the medical records are available.

Principal: _____
_____ (1mk)

Mrs. Wanjau: I will be grateful. Thanks a lot. I'll see you tomorrow.

Principal: _____
_____ (1mk)

A) For each of the following words write a word pronounced the same. (4mks)

- i) Would-
- ii) Sales
- iii) Doe-
- iv) Sent-

B) Underline the silent letter in the following words (4mks)

- i) Sachet
- ii) Debris
- iii) Gnaw
- iv) Mortgage

SECTION E: POETRY (15MKS)

Read the song below and answer the questions that follow

Daughter of Lekamoi
Oh, mother
Behold the daughter of Lekamoi
Who has just grown up
Young woman, when will she return 5
When does my love come back?
Daughter of the bull?
Woman come, let me see you?
Listen;
Daughter of Lekamoi
Leader of the girls 10
When does my own arrive?
Ah! Abul, chief of women
Her neck resembles a snake

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| | |
|---|--|
| Coming out of a vase Behold, Daughter of Lekamoi Her teeth are like ash Oh, when does my love come back? Daughter of the bull Abul, come and dance before me Listen | 15 20 |
| Daughter of Lekamoi Who has just shot up, All men want her Ah, Abul, chief of women My girl appears on the path from Anaka Behold the daughter of Lekamoi Tall and graceful With whose daughter can you Compare her? My companion, when will She return? Daughter of the bull Woman come, I will take You from your husband, listen | 25 35 |
| Daughter of Lekamoi, Leader of the girls Yes, all the men want her Abul, chief of women. | 30 |

QUESTIONS

i) What type of song is this? Give reasons for your answer. (2mks)

ii) Who is the singer (2mks)

iii) To whom is the song sung? (1mk)

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iv) Describe the singers attitude towards the person being sung to (3mks)

v) Where is Abul at the time of the singing? (1mk)

vi) Identify and illustrate any **two** stylistic devices that are found in the above song. (4mks)

vii) Explain the meaning of the following line (2mks)
“With whose daughter can you compare her?”

SECTION F GRAMMAR (20MKS)

a) Use the correct form of the word in brackets to fill in the blank spaces (5mks)

- i) I bought this shirt last year. It _____ five hundred shillings. (cost)
ii) Who has been _____ through my files? (go)
iii) Moses and Brian _____ the class yesterday. (sweep)
iv) My son _____ to school everyday and he says he enjoys it. (walk)
v) Last night, the farmer _____ the nappier grass in to bundles ready for selling (bind)

b) Arrange the adjectives in the brackets and use them to fill in the blank spaces. (3mks)

- i) She bought a _____ bed. (huge, wooden, old, Japanese)

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- ii) Jane killed the _____ cock. (black, big, old)
- iii) President Uhuru Kenyatta flew in a _____ plane.
(spacious, new, multicoloured)

c) Fill in the blank spaces with the correct pronoun from the words given in brackets. (4mks)

- i) The teacher gave my friends and _____ presents. (me/ I)
- ii) Peter and _____ went to visit their friend. (he/ him)
- iii) _____ are you referring to. (Who/ whom)
- iv) You seem taller than _____. (she/ her)

d) Re-write the following sentences correctly (3mks)

- i) An orange fell on Jack while he was sitting under the shade of the mango tree.

- ii) Take care you do not loose your purse.

- iii) “My names are Joseph Mwangi,” said the young man.

e) Re-write the following sentences in to passive voice. (2mks)

- i) People say Kelvin works 18 hours a day.
(Begin: It.....)

- ii) My mother takes me to school everyday.

f) Fill in the blank spaces using the correct phrasal quantifiers (3mks)

- i) The secretary has ordered for a _____ of foolscaps.
- ii) A whole loaf has several _____ of bread.
- iii) The news _____ excited me.

FORM 2 TERM 3 OPENER

JINANAMBARIDARASA.....

OPENER EXAMINATION

KIDATO CHA PILI

MUDA: SAA 2 ½

MAAGIZO

- (a) Andika jina lako na nambari yako ya mtihani katika nafasi ulizoachiwa hapo juu.
- (b) Jibu maswali yote.
- (c) Majibu yote yaandikwe katika nafasi ulizoachiwa katika kijitabu hiki cha maswali.
- (d) Majibu yote lazima yaandikwe kwa lugha ya Kiswahili.
- (e) Watahiniwa lazima wahakikishe kwamba kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.

Kwa matumizi ya mtahini pekee.

| SWALI | UPEO | ALAMA |
|-----------------------------|------|-------|
| INSHA | 20 | |
| UFAHAMU | 15 | |
| SARUFI NA MATUMIZI YA LUGHA | 35 | |
| ISIMU – JAMII | 10 | |
| FASIHI – SIMULIZI | 20 | |
| JUMLA | 100 | |

A. INSHA

Wewe ni mwenyekiti wa kamati ya usalama wilayani mwenu. Andaa hotuba utakayoitoa katika kikao kinachoshughulikia usalama huku ukizingatia chanzo cha tatizo hili na hatua zinazofaa kuchukuliwa kulitatua.

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B. UFAHAMU(alama 15)

Soma taarifa ifuatayo kisha ujibu maswali yafuatayo.

Wiki iliyopita nilikuwa napanga foleni kuingia kwenye benki nilipopigwa na butwaa.Kilichonistaajabisha ni kuwa dada mmoja alikuwa aking’ang’ania kujibanza mbele pasipo kupanga foleni,bila kuwajali wateja waliokuwa mbele yake.Jambo hilo lilinikera kwani mwanamke hakuwa na wakati wa kuomba radhi kwa waliokuwa mbele yake.

Baada ya kutafakari kwa muda niliamua sitakereka wala kumlaumu kwani ni tabia iliyokita mizizi miongoni mwa wanawake humu nchini.Ni mara ngapi umewaona wanawake wakichukulia wanaume wana muda wote wa kupoteza na kuwakaripia kuwa hawawapi nafasi kwa mujibu wa msemo “ladies first”?Ni wangapi ambao huwanunia na kuwatukana wanaume kwa kuwa hawakutambuliwa wala kuwapa nafasi ya kwanza licha ya kuwa haikuwa haki yao?Ni wangapi

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

huwaaibisha waume wao kwa kukosekana kwa hiki na kile nyumbani licha kuwa wenyewe wana uwezo wa kifedha?

Katika mahusiano wanaume wanapaswa kutambua ishara kama hizi mapema ambazo zitakutahadharisha kuingia katika uhusiano na dada ambaye katika siku zijazo hatakuthamini; ambaye kila kizuri kitakuwa chake. Bila shaka wanaume wengi watakubaliana nami kuwa sio rahisi kubaini tabia hizi miongoni mwa akina dada, kabla ya uhusiano kunoga. Halikadahlika, iwapo katika siku za kwanza za uhusiano utagundua kuwa dada ana mazoea ya kununa kwa sababu umeshindwa kutekeleza jambo fulani na kutupa matusi makali bila kuogopa, funganya virago kwani hii ni ishara atakukosea heshima siku za usoni.

Wanaume wengi hawaelewi kuwa uhusiano wa kudumu ni uwili, kila mmoja akijitahidi kumfurahisha mwenzake. Wanajitwika jukumu la kuleta raha katika uhusiano kwa jua kwa mvua. Wamejitwika madeni ya ufukara pasi kukidhi kiu cha mwenziwe kikuacho kila uchao. Mwaunaume aingiapo matatani hutupiliwa mbali kwa madharau. Haya yanatikumbusha bwana mmoja aliyepoa na kuishi na mkewe mjini. Alimtumikia kwa kila njia alipokuwa mwenye mshahara mnono. Alipofutwa kazi na mali kufifia kwa mahitaji yasiyoisha ya mkewe, mkewe alimwaibisha kwa kumfuata kila mwanaume aliyekuwa nacho na hatimaye kumtoroka kwa madai mwanamke ni kama gari.

Wanaume watakubaliana nami kuwa ni wengi wanaoishi maisha ya kunyanyaswa na wake wao bila kulalamika. Kimefika kiwango cha kupigwa, kuuawa, kutusiwa na kutishwa kupitia makundi haramu. Wengine wameendewa kwa wachawi kulainishwa wakaishia kupoteza akili zao razini.

Licha ya kishidikizo wanaume kunyenyekea na kufuatia haki za wanawake wanastahili.

Maswali

- a. Eleza kilichomkera mwandishi na kwa nini? AI 2

- b. Kutokana na taarifa hii ni ishara gani zinaashiria kuwa tabia kama hizi zimekita mizizi miongoni mwa wanawake. AI 3

c. Eleza sababu mbili zinazofaa kumfanya mwanaume kuvunja uhusiano mapema kulingana na mwandishi. AI 2

d. Eleza maana ya vifungu vifuatavyo kama vilivyotumika katika taarifa hii. AI 3

i. Kwa jua kwa mvua

ii. Mwanamke ni kama gari

iii. Akili zao razini

e. Wanaume wanakumbana na changamoto gani katika ndoa? AI 3

f. Andika neno lingine lenye maana sawa na yafuatayo kulingana na taarifa. AI 2
Kunoga

Pasi

A. MATUMIZI YA LUGHA

1. Bainisha maneno katika senensi zifuatazo

i. Mama anapika ugali al 3

ii. Alifika kabla ya wote

2. Bainisha viambishi vya neno lifuatalo. Al 2

Ilinyesha

3. Sahihisha sentensi hizi al 2

i. Nilimpea mkebe hizi jana.

ii. Hizi ni zikombe za kukunywa chai.

4. Unda vitenzi kutokana na nomino hizi. Al 2

i. Mtukufu

ii. Mchumba

5. Andika sentensi zifuatazo katika hali ya kutendwa al 2

i. Mzee alimwadhibu mwana kwa sababu ya utundu.

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ii. Huyu paka ndiye aliyeyanywa maziwa yote.

6. Kanusha sentensi zifuatazo al 2

i. Vidozo alikula wali jana akashiba.

ii. Wavulana walicheka juzi.

7. Eleza maana ya vitate hivi. Al 4

i. Tua

ii. Dua

8. Yakinisha al 2

Wasingalisoma kwa bidii wasingalipita mtihani huo.

9. Bainisha aina za viwakilishi katika sentensi hizi. Al 3

i. Yeye mwenyewe ni mwanafunzi.

ii. Ambao ulipotea umepatikana.

iii. Wangapi watafika?

10. Fafanua sauti hizi./p/ na /b/ al 2

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11. Eleza maana ya: al 2

a. Kiimbo

b. Shadda

12. Andika sentensi zifuatazo kulingana na maagizo

a. Kuku alitaga yai.(hali timilifu) al 2

13. Onyesha aina ya vitenzi katika sentensi ifuatyo

Leon alikuwa akicheza uwanjani. Al 2

14. Maneno yafutayo yamo katika ngeli gani? Al 2

i. Ugwe

ii. Limau

15. Tunga sentensi yenye muundo ufuatao. Al 2

W+V+T+E

16. Andika katika kinyume:

Msichana mzuri alifunga mlango. Al 1

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B. ISIMU JAMII (ala 10)

Soma mazungumzo yafuatayo kisha ujibu maswali yanayofuata

Mhudumu: Mnakaribishwa. Menyu hii hapa. Mtakula nini?

Mteja 1: Naomba unilettee mix na ugali. Fanya haraka

Mhudumu: Sawa mzee, Nafurahi kukuhudumia.

Mteja 2: Mhudumu, hebu leta mboga na madodo na chemsha mbili. Pia uletee maji ya machungwa.

Mhudumu: Sawa. Baada ya dakika moja utapata yote uliyoagiza.

Mteja 1: (Akila). Wewe! please bring me drinking water. Yawe baridi tafadhali.

Mhudumu: Ndiyo haya hapa mezani. Glasi nayo hii pia, karibu.

Mteja 2: Nina haraka mzee. Wapi toothpick?

Mhudumu: Hizo hapo mezani na maji.

Mteja 1: (Akila) Mhudumu, naomba unilettee ugali saucer tafadhali.

Mhudumu: Naam.

Mteja 2: (Akisimama) Nimeshiba. Hizi pesa. Nilitee change haraka niondoke.

Maswali

1. Ni sajili gani inayohusishwa katika mazungumzo haya? Al 2

2. Taja sifa zozote nane za sajili hii. Al 8

C. FASIHI SIMULIZI

i. Andika sifa mne za visasili.

Al 4

ii. (a) Hadithi ni nini?

Al 2

(b) Kwa nini hadithi hutambwa wakati wa jioni.

Al 4

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iii. Andika tofauti tano kati ya fasihi andishi na fasihi simulizi.

AI 10

FORM 2 TERM 3 OPENER

OPENER EXAMINATION

FORM II HISTORY

NAME: ADM NO: CLASS:

SECTION A (25MKS)

ANSWER ALL THE QUESTIONS IN THIS SECTION.

1. Name two sources of history of the Kenyan communities during the pre-colonial period. (2 Marks)
2. State two disadvantages of relying on oral traditions as a source of history. (2 Marks)
3. Name two pre-historic sites in Kenya. (2 Marks)
4. State two advantages of the discovery of fire by early man. (2 Marks)
5. Name the dispersal area of the Eastern Bantu. (1 Mark)
6. Identify one-age grade for elders among the Akamba. (1 Mark)
7. State the first settlement area of the Luo during their migration from Sudan. (1 Mark)
8. Identify the two main items of trade from the interior of Kenya during the long distance trade. (2 Marks)

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9. Give two reasons why Seyyid Said moved his capital from Muscat to Zanzibar. (2 Marks)
10. State three economic benefits of the Oman rule along the Kenyan Coast during the nineteenth century. (3 Marks)
11. State two ways through which mission stations promoted the spread of Christianity in Kenya. (2 Marks)
12. Identify three peaceful ways of resolving conflicts. (3 Marks)
13. Identify two continents that took part in the triangular trade in the 17th Century. (2 Marks)
14. State two roles played by Tuaregs during the trans-Saharan trade. (2 Marks)
15. State the advantages of wood as a source of energy. (3 Marks)

SECTION B

ANSWER ALL THE QUESTIONS IN THIS SECTION.

16. (a) State three disadvantages of hunting as an economic activity of the early man. (3 Marks)

(b) Explain six benefits of settling in villages during the late Stone Age period. (12 marks)

17. (a) Give three ways in which the invention of wheel revolutionized transport in Europe before the 19th century.(3mks

(b) Discuss the disadvantages of using air transport. (12 Marks)

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18. (a) Give three uses of wind as a source of energy in the ancient times. (3 Marks)

(b) Explain six effects of iron working technology on African Communities before the 19th Century.
(12 Marks)

SECTION C
ANSWER ALL THE QUESTIONS IN THIS SECTION.

19. (a) Identify any three circumstances when the right to life is limited. (3 Marks)

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(b) Explain six responsibilities of a Kenyan citizen. (12 Marks)

20. Explain five factors that limit national unity. (10 Marks)

FORM 2 TERM 3 OPENER

FORM 2 C.R.E.

NAME: ADM.NO:CLASS:.....

Instructions to candidates:

- Answer all the questions in the spaces provided.
- All answers should be written in English.

1. a) Give six reasons why the Bible is referred to as a library (6mks)

b) Explain four differences in the two creation accounts (8mks)

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c) Outline seven ways in which Christians care for God's creation (7mks)

2. a) Give six reasons that made the Israelites to break the covenant while at Mt. Sinai.
(Exodus 32:1-35) (6mks)

b) Explain the Israelites new understanding about the nature of God during the
Exodus (7mks)

c) How does Decalogue apply to Christian life today (7mks)

3. a) Explain six reasons why Jesus taught in parables (6mks)

b) Describe the healing of the Gerasene demoniac (Luke 8:26-39) (8mks)

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c) What lesson can Christians learn from the healing of the Gerasene demoniac.
(6mks)

4. a) Give reasons why Jesus performed miracles. (5mks)

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b) Describe the feeding of five thousand people as found in Luke 9:10-17 (8mks)

c) In what ways can Christians today demonstrate their concern to the needy (7mks)

5. a) Explain seven roles of traditional kinship system in African communities. (7mks)

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b) Give 6 factors that have weakened kinship in traditional African Society. (6mks)

c) State seven duties of healers in traditional African Communities. (7mks)

FORM 2 TERM 3 OPENER

NAME:ADM NO.....

GEOGRAPHY

INSTRUCTIONS TO STUDENTS:

1. Write your name, admission number and class in the spaces provided.
2. Answer all the questions in this paper.
3. All answer must be written in the spaces provided.
4. Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

1. Define the term 'habitat'. 2mks

2. Give two types of environment. 2mks

3. State the relationships between:
i. Geography and Mathematics. 2mks

ii. Geography and History. 2mks

4. a) Describe the origin of the earth as proposed by the passing star theory. 3mks
b) State two weakness of the passing star theory. 2mks

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5. Differentiate between asteroids and comets. (2mks)

6. Name two instruments that are kept in Stevenson Screen. 2mks

7. List two factors that influence atmospheric pressure. 2mks

8. State three characteristics of Inter Tropical Convergence Zone (ITCZ). 3mks

9. Identify three methods of collecting statistical data. (3mks)

10. Given the following set of data:

26,30,25,34,18,19

Calculate the median.

2mks

11. a) What is marginal information? 2mks

b) Mention three common marginal information in a map sheet. 3mks

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12. a) Define hypothesis. 2mks

b) Name and explain two main types of hypothesis. 4mks

c) Identify two possible problems likely to be encountered during field work. 4mks

13. a) Differentiate between a mineral and a rock. 2mks

b) Explain two ways in which metamorphic rocks are formed. 4mks

14. a) Give two ways in which minerals occur. 2mks

b) Explain two negative effects of open –cast mining. 4mks

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c) Explain two factors influencing exploitation of trona in L.Magadi. 4mks

15. a) Define the term 'earth movement'. 2mks

b) Identify two types of earth movement. 2mks

c) Explain the continental drift theory. 4mks

16. The diagram below represents parts of the earth's crust which has been subjected to tensional force. Use the diagram to answer questions that follow.

a. Identify the type of fault. 1mk



b. State two other types of faults apart from the one mentioned in (a) above. 2mks

c. Name the angle L. 1mk

d. Name the distance m. 1mk

e. Mention two features resulting from faulting. 2mks

17. Differentiate between:

a. Magnitude and intensity of earthquakes. 2mks

b. Seismic and aseismic zones. 2mks

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

c. What are the effects of earthquakes? 4mks

18. a) Define the term 'bearing' as used in Geography. 2mks

b) Explain the following methods of representing relief on topographical maps.

i. Pictorial representation. 2mks

ii. Hachures. 2mks

19. Identify the three types of ground photographs. 3mks

20. The table below represents sugar cane production in five major factories in Kenya. Use it to answer the following questions:

| Factory | Production in '000' tones |
|----------------|----------------------------------|
| Sony | 50 |
| Nzoia | 100 |
| Chemilil | 200 |
| Muhoroni | 250 |
| Mumias | 400 |

a. Using the data above, draw a divided rectangle 15cm length. 5mks

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- b. Give the difference in tonnage between sugar produced in Muhoroni and Nzoia factory.
(1mk)

21. a) Define the term climate

2mks

b) What is climate change?

2mks

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FORM 2 TERM 3 OPENER

NAME.....ADMISSION NUMBER.....

BUSINESS STUDIES

TIME:2 HOURS

INSTRUCTIONS TO CANDIDATES.

- Write your name and admission number in the spaces provided.
- Answer all questions in the spaces provided.
- Answer all questions in Section A and three in Section B
- Answers must be written in English.
- Avoid one word answers

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FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

Section A: Attempt all questions in this section

1. Give any **four** reasons why a person may engage in business. (4 Mks)
 - a.
 - b.
 - c.
 - d.

2. Outline **four** reasons why a person may find it better to buy goods from a kiosk instead of a supermarket. (4 Mks)
 - a.
 - b.
 - c.
 - d.

3. Highlight **four** methods used by the government to regulate business activities in Kenya. (4 Mks)
 - a.
 - b.
 - c.
 - d.

4. Outlinethreeclauses found in the memorandum of association. (3 Mks)
 - a.
 - b.
 - c.

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5. Highlight **three** benefits of warehousing to the consumer. (3 Mks)

- a.
- b.
- c.

6. Give **four** characteristics of human wants. (4 Mks)

- a.
- b.
- c.
- d.

7. Highlight **four** benefits of a business plan to an entrepreneur. (4 Mks)

- a.
- b.
- c.
- d.

8. State **four** ways in which a good filing system may facilitate the operations of an office. (4 Mks)

- a.
- b.
- c.
- d.

9. State **three** reasons for privatising public corporations. (3 Mks)

- a.

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- b.
- c.
- d.

10. Outline **four** services offered by wholesalers to retailers. (4 Mks)

- a.
- b.
- c.
- d.

11. In the table below, outline **three** distinctions between Direct and Indirect production. (3 Mks)

| Direct Production | Indirect Production |
|-------------------|---------------------|
| | |
| | |

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| | |

12. Outline **four** reasons why a trader may prefer to transport his goods by train. (4 Mks)

- a.
- b.
- c.
- d.

13. State **four** benefits of running a sole proprietorship business. (4 Mks)\

- a.
- b.
- c.
- d.
- ...

14. Highlight **four** factors that a trader may consider when determining the appropriate means of transport. (4 Mks)

- a.
- b.

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c.

d.

15. State **four** advantages of written communication. (4 Mks)

a.

b.

c.

d.

16. Give **four** malpractices against which consumers may need protection. (4Mks)

a.

b.

c.

d.

17. State **three** circumstances under which cash terms may be used. (3 Mks)

a.

b.

c.

d.

18. Highlight **three** duties of commercial attaches in trade promotion. (3Mks)

a.

b.

c.

19. Highlight **three** circumstances when one can convey verbal communication. (3Mks)

a.

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21. Explain **five** factors that may promote entrepreneurship in Kenya. (10 Mks)

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FORM 2 TERM 3 OPENER

Name ADM NUMBER.....

AGRICULTURE FORM 2 Time 2 Hours

FOR EXAMINER'S USE ONLY

| Section | Question | Max Score | Candidates Score |
|---------|----------|-----------|------------------|
| A | 1-18 | 30 | |
| B | 19-21 | 20 | |
| C | 22 | 20 | |
| | 23 | 20 | |
| | 24 | 20 | |
| | Total | 90 | |

SECTION A(Answer all the questions)

1. Define the term Agriculture. 1mk

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2. Give the meaning of the following terms as used in Agricultural Production. 1½mks

i. Olericulture.....

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ii. Pomoculture.....

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iii. Floriculture.....

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3. State **four** advantages of mixed farming. 2mks

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4. State **four** importance of Agriculture. 2mks

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5. Give **four** ways in which Health influence Agricultural production. 2mks

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6. State **three** negative effects of wind in crop production. 1½mks

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7. State **four** aspects of rainfall that influence agricultural production. 2mks

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8. a)Name two dual purpose cattle breed reared in Kenya (1mk)

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b)Outline four general characteristics of indigenous cattle breed (2mks)

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9. Give **two** reasons why burning is discouraged as a method of clearing land .(1mk)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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10. State **three** tertiary operations that are carried out in the farm. 1½mks

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11. Give **three** importance of carrying out minimum tillage 1½mks

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12. State **four** importance of drainage in Agriculture 2mks

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13. Give **three** reasons as to why green manure is not commonly used. 1½mks

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14. State **three** basic concept of economics. 1½mks

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15. State **four** roles of Nitrogen plants. 2mks

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16. Outline **three** characteristics of Nitrogenous fertilizers. 1½mks

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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17. State **three** impotances of testing soil. 1½mks

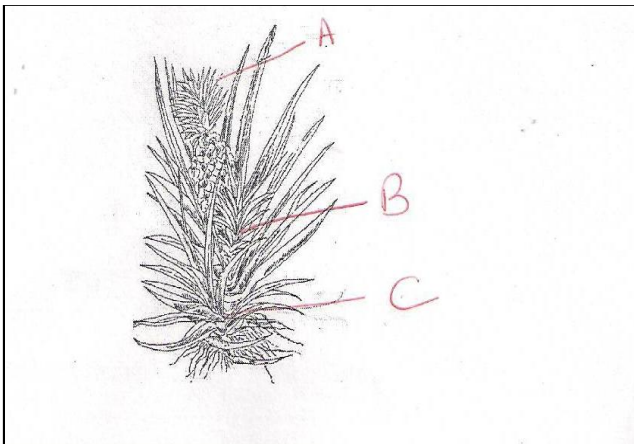
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18. Give **two** areas to be avoided when carrying out soil sampling. 1mk

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SECTION B(Answer all the questions in this section)

19. The following is a diagram of a certain crop. Study it carefully and answer the questions that follow.



- I. Identify the crop 1mk
- II. Label the parts labeled A ,B and C. 1½mks
 - A.....
 - B.....
 - C.....
- III. State **four** factors to be considered when selecting materials for planting. 2mks

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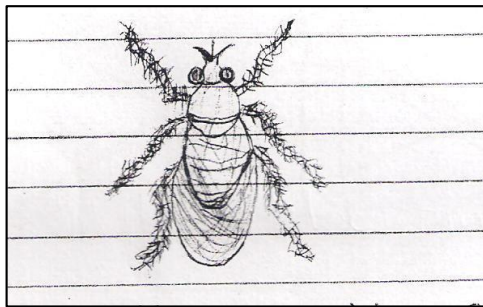
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21. Study the diagram below and then answer the questions that follows:-



a) Identify the parasite shown above (1mk)

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b) Name the livestock species attacked by the parasite above (1½mks)

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c) How does the above parasite obtain it's food from the host? (1mk)

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d) What are the harmful effects of the parasite you have mentioned in (a) above?(2mks)

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e) How would a farmer control the above parasite (2mks)

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SECTION C.

(Answer any TWO questions in this section.)

22a) State five reasons for keeping animals healthy 5mks

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b) State 5 predisposing factors to livestock diseases. 5mks

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c) Discuss FIVE importances of crop rotation in crop production. 10mks.

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23 (a) State and explain FIVE nursery management practices. 10mks

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(b) Describe 6 factors influencing spacing of crops.. 6mks

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(c) state FOUR methods of preparing planting materials 4mks

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24. a) Describe importance of Drainage as a land Reclamation method. 6mks.

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b. Discuss 6 characteristics of fertile soil.

6mks.

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c. Explain any 4 factors to consider in choosing seedrates.

8mks.

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FORM 2 TERM 3 OPENER

NAME _____ ADM/NO. _____ CLASS _____

OPENER EXAMINATION

TIME: 2HRS

INSTRUCTION TO CANDIDATES

- Write your **name, admission number** and **class** in the spaces provided above
- This paper consists of **TWO** Sections; Section **A** and Section **B**.
- Answer **ALL** the questions in both Section **A** and **B** in the spaces provided.
- ALL** working **MUST** be clearly shown.
- Candidates should check the question paper to ascertain that all the 8 pages are printed as indicated and that no questions are missing.
- Candidates should answer the questions in English

Where necessary, take

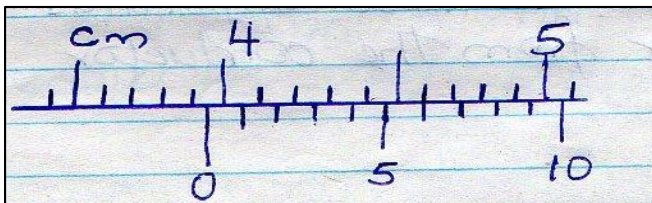
$$G = 10\text{N/kg}$$

$$\text{Density of water} = 1000\text{kg/m}^3$$

SECTION A (25 MARKS)

Answer all questions in the spaces provided

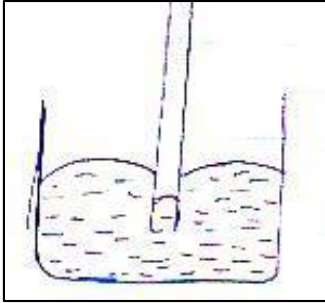
- The figure below shows a scale which is part of vernier calipers. What is the reading indicated by the scale? (2mks)



- Two mirrored walls stand at an angle to each other. A student standing in the room counts nine images of himself in the mirrors. Determine the angle between the walls (3mks)

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3. The diagram below shows the behavior of mercury in a capillary tube. Explain this observation (2mks)

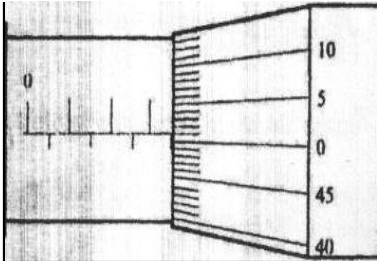


4. A body weighs 600N on the surface of the earth and 450N on the surface of another planet. Calculate the value of g in that planet (g on the earth = 10N/Kg) (3mks)

1

5. A steel needle when placed carefully on water can be made to float. When a detergent is added to the water it sinks. Explain this observation (2mks)
- 6.
7. 200 coulombs of charge passes through a point in a circuit for 0.6 minutes. What is the magnitude of the current flowing? (3mks)
8. When marking the fixed points on a thermometer it is observed that at 0°C , the mercury thread is of length 1cm and 6cm at 100°C . What temperature would correspond to a length of 4cm? (3mks)
9. The micrometer screw gauge below has a zero error of -0.19mm .

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Determine the actual thickness of the object.

(2mks)

10. Distinguish between hard magnetic material and a soft magnetic material

(2mks)

11. In the smoke cell experiment, bright specks are observed to move in a continuous random manner. Explain this motion.

(2mks)

12. State the reason why a steel sphere resting on a horizontal surface is said to be in neutral equilibrium

(1mk)

SECTION B (55 MARKS)

13. (a) State Hooke's law

(1mk)

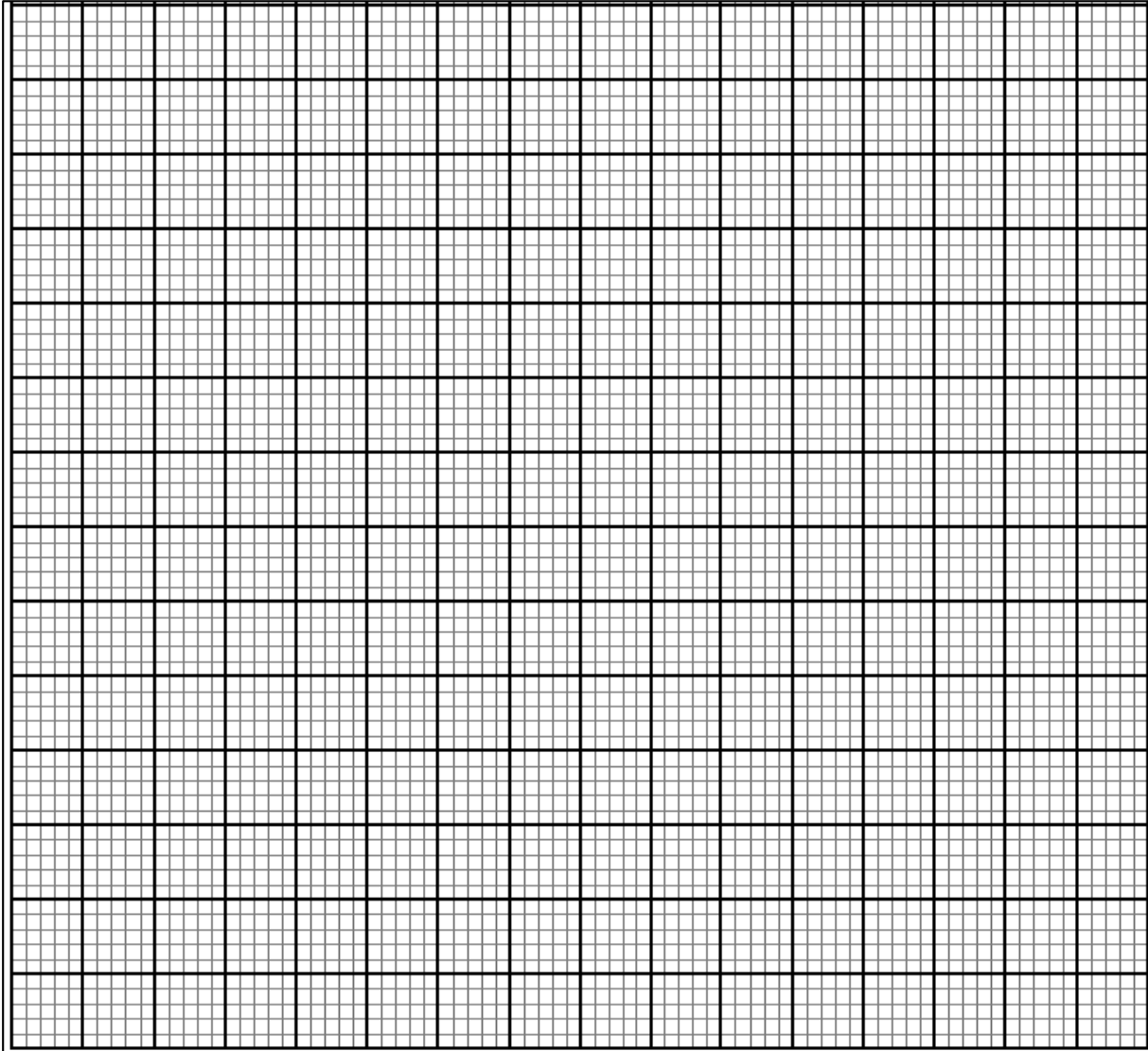
(b) In an experiment to verify Hooke's law, a piece of rubber was fixed to a rigid support and the other end pulled with a force of ranging magnitude. The values of force and the extension were recorded as in the table below:-

| | | | | | | | |
|---------------|---|------|------|------|------|------|------|
| Force (N) | 0 | 0.20 | 0.55 | 0.75 | 1.00 | 1.30 | 1.40 |
| Extension(cm) | 0 | 1.5 | 2.5 | 3.5 | 4.5 | 6.0 | 7.0 |

(i) Plot a graph of force (Y axis) against extension (X-axis) on the grid provided

(5mks)

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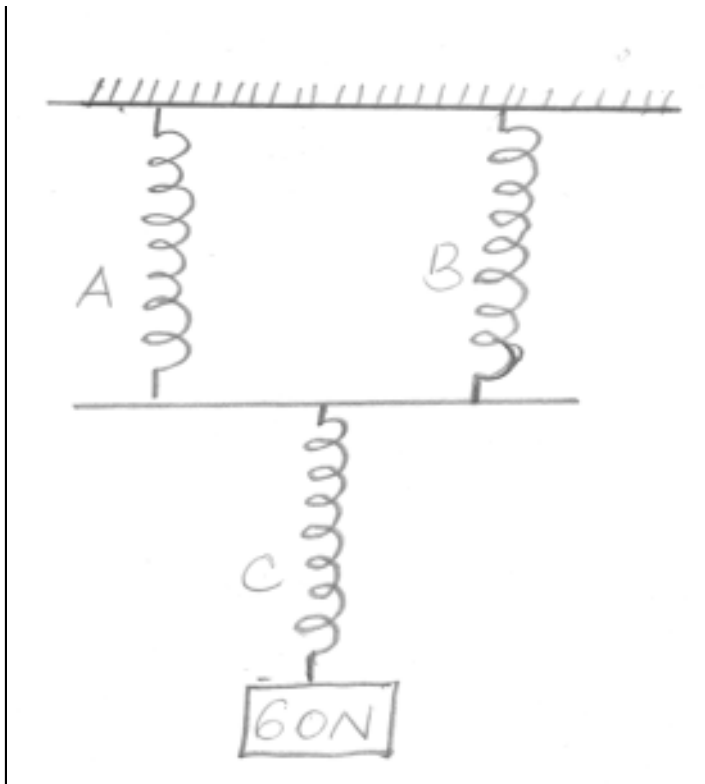


(i) From the graph, determine the spring constant of the rubber within elastic limit (3mks)

(ii) What is the size of force at the elastic limit (2mks)

(c) Three identical springs A, B and C of negligible weight are connected as shown below:

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The springs support a load of 60N. If the spring constant of each is 150N/m, determine the total extension of the springs (3mks)

14. (a) State the Pascal's principle (1mk)

(b) The height of a mercury barometer at a particular place is 70cm. given that the density of mercury is 13600kgm^{-3} , determine;

(i) The atmospheric pressure at the place. (3mks)

(ii) The height of a water barometer at the same place. (Density of water= 1g/cm^3) (2mks)

(iii) Give a reason why mercury is preferred as a barometric liquid. (1mks)

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(c) Calculate the minimum pressure a block of dimensions $3\text{cm} \times 10\text{cm} \times 15\text{cm}$ and mass 12kg could exert on a horizontal surface. (3mks)

15. (a) In an experiment to determine the diameter of an oil molecule, an oil drop of radius 0.02cm was placed in a tray of water in which lycopodium powder had been sprinkled. The oil drop spread to a circular patch of radius of 0.2cm

Determine

(i) The volume of the oil drop (2mks)

(ii) The area of the patch (2mks)

(iii) Diameter of the oil molecule (3mks)

(b) state two assumptions made in the experiment above. (2mks)

16. (a) What property of light is suggested by the formation of shadows? (1mk)

(b) A building standing 200m from a pinhole camera produces on the screen of the camera an image 2.5cm high 5.0cm behind the pinhole.

Determine the actual height of the building (3mks)

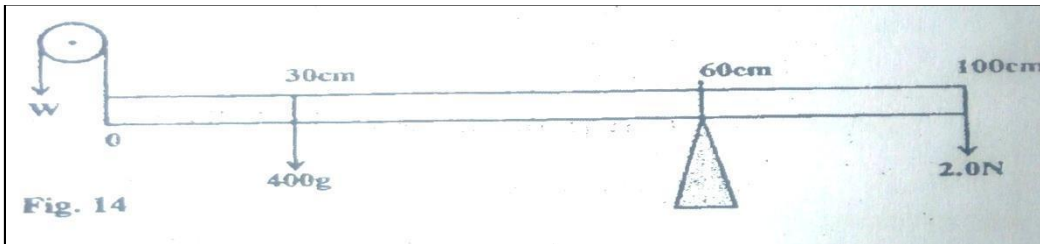
(c) An object of height 2.0cm is placed 5.0cm in front of a convex mirror of focal length 10.0cm

(i) On the grid provided, draw to scale a ray diagram to locate the position of the image. (4mks)

(ii) Calculate the magnification produced by the mirror. (2mks)

17. (a) State the principle of moments (1mk)

(b) The figure below shows a uniform metre rule of mass 300g acted upon by a number of forces.



Determine;

(i) Sum of clockwise moments (leave your answer in terms of W) (2mks)

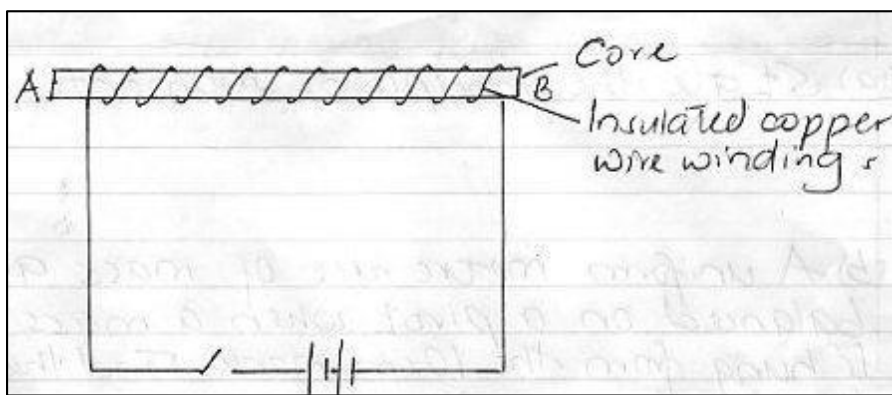
(ii) Sum of anticlockwise moments (2mks)

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(iii) The force W

(2mks)

18. The figure below shows an electromagnet



is made up of iron and not steel

(2mks)

(i) Explain why the cord

(ii) On the same diagram indicate the direction of the current flow when the switch is closed (1mk)

(iii) When current is allowed to flow, the electromagnet becomes magnetized. Identify the poles of the magnet (2mks)

A. _____

B. _____

(iv) State three factors that affect the strength of the electromagnet (3mks)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

FORM 2 TERM 3 OPENER

NAME.....CLASS.....ADM.....

FORM 2 BIOLOGY EXAM

OPENER EXAMINATION

INSTRUCTIONS:

Answer all the questions in the spaces provided.

For examiner use only

| QUESTIONS | TOTAL SCORE | STUDENT SCORE |
|-----------|-------------|---------------|
| 1 – 16 | 100 | |

1(a) Name the three main branches of biology. (3mks)

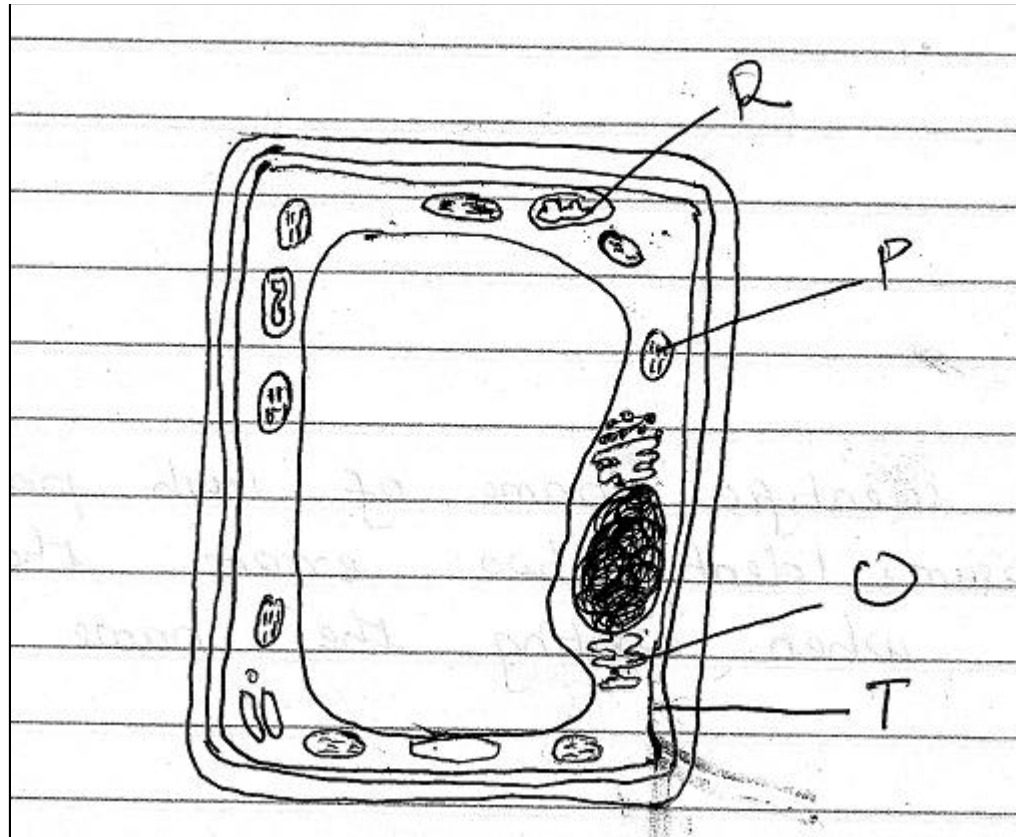
b) List two other branches of biology(sub-branches) and for each give a definition. (4mks)

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- 2 Biological knowledge can be used to solve environmental problems and enables one to pursue various careers.
- (a) list three environmental problems that can be solved using biological knowledge; (3mks)
- b) Which three careers require the knowledge of biology. (3mks)
- 3(a) The scientific name of irish potato is Solanum Tuberosum. Identify two errors that have been made when writing the name. (2mks)
- b) Which taxonomic group does the name solanum refer to? (2mks)
- 4 Which organelles performs the following functions:
- a) Transports proteins within the cells (1mk)
- b) Contains lytic enzymes (1mk)
- c) Processing and transportation of glycoprotein (1mk)
- d) Regulate the passage of materials into and out of a cell. (1mk)

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

5 The diagram below represents a cell as seen under the electron microscope.



a)(i) Based on the diagram state whether it represents an animal cell or a plant cell. (1mks)

(ii) Give two reasons for your answer in 5(a)(i) above. (2mks)

b) State the functions of the structure labeled P, Q and R. (3mks)

P –

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Q –

R –

C) State three properties of the structure labeled T. (3mks)

d) Name the part of the cell that is used in maintaining support in plant cells. (1mk)

6(a) State the function of the following parts of a light microscope.

(i) Mirror (1mk)

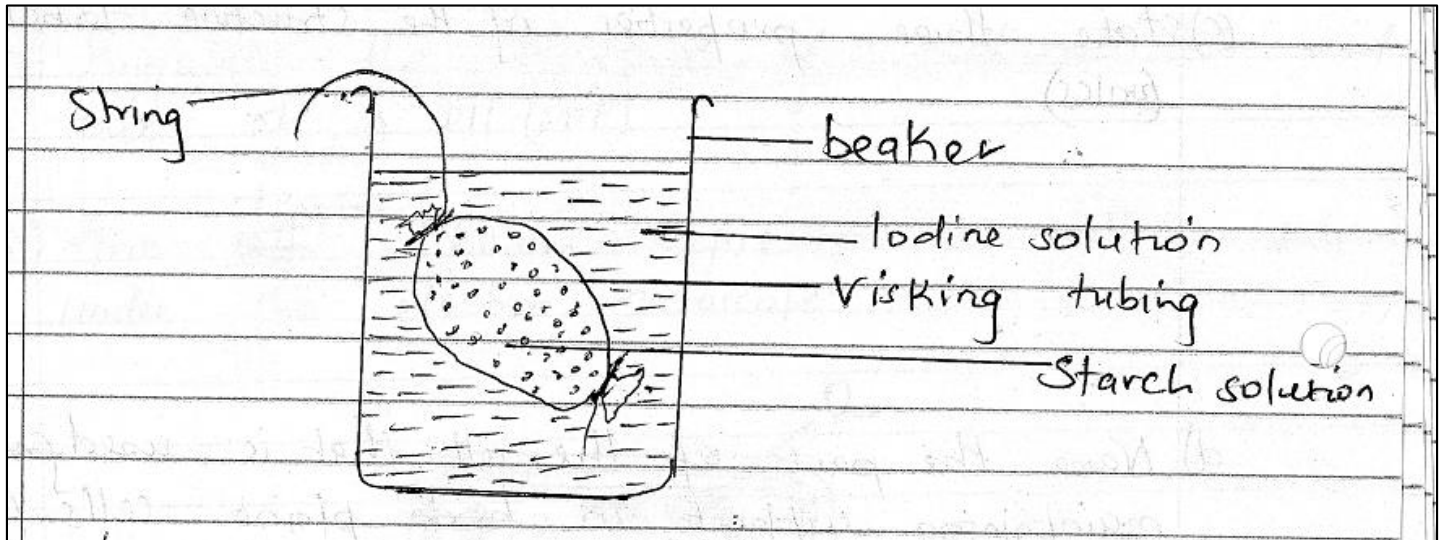
(ii) Condenser (1mk)

(iii) Eye piece (1mk)

(b) Which part of a microscope enable one to change from medium to high power objective lens. (1mk)

(c) Explain why it is not advisable to use the coarse adjustment knob when viewing objects with the high power objective lens. (2mks)

7 Study the diagram below and answer the questions below:



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

- (b) State two observations made after 30 minute. (2mks)

- (c) Give an explanation for the observation made in 7(b) above. (3mks)

- (d) State two factors that affect the process you named in 7(a) above. (2mks)

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8(a) Photosynthesis take place in two stages. Name the two stages and state where in the chloroplast each takes place. (4mks)

Stage I -

Stage II -

(b) State the role of light in the process of photosynthesis. (1mk)

(c) Which cells in a leaf that contains chloroplasts. (3mks)

(d) List two raw materials necessary during photosynthesis. (2mks)

9(a) Name two enzymes that digest proteins in the human alimentary canal. (2mks)

b) Explain why the enzymes you have named in (a) above secreted in inactive form. (1mk)

10(a) Name two features that increase the surface area of the small intestines. (2mks)

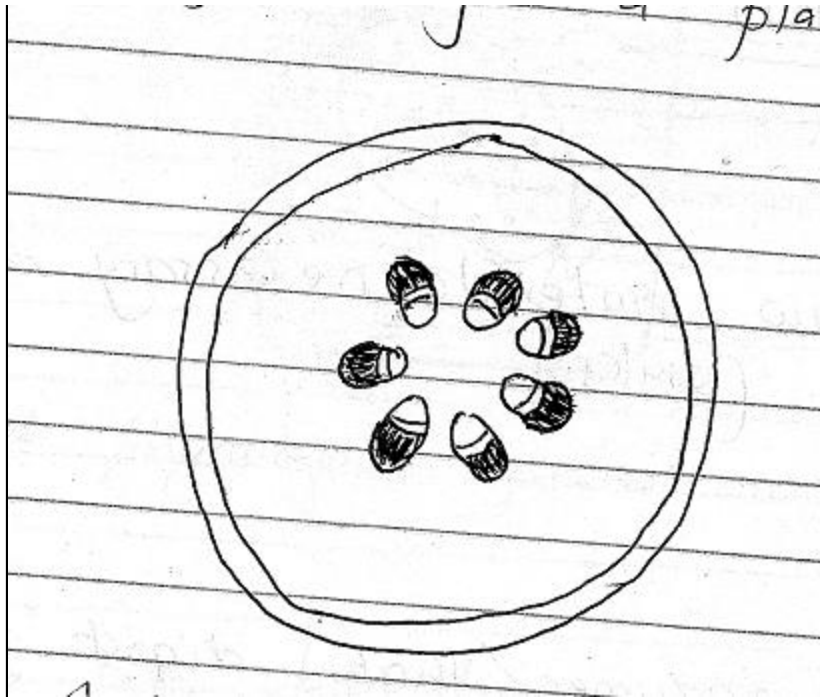
b) During a practical investigation students were provided with the following:

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

Food substance, 10% sodium hydroxide solution, 1% copper sulphate solution and iodine solution.

- (i) Identify two food substances that the students were expected to test. (2mks)

11. The diagram below represents a transverse section through a plant organ.



- (a)(i) From which plant organ was the section obtained? (2mks)

- (ii) Give two reasons for your answer in (a)(i) above (2mks)

b) On the diagram identify and name the part that

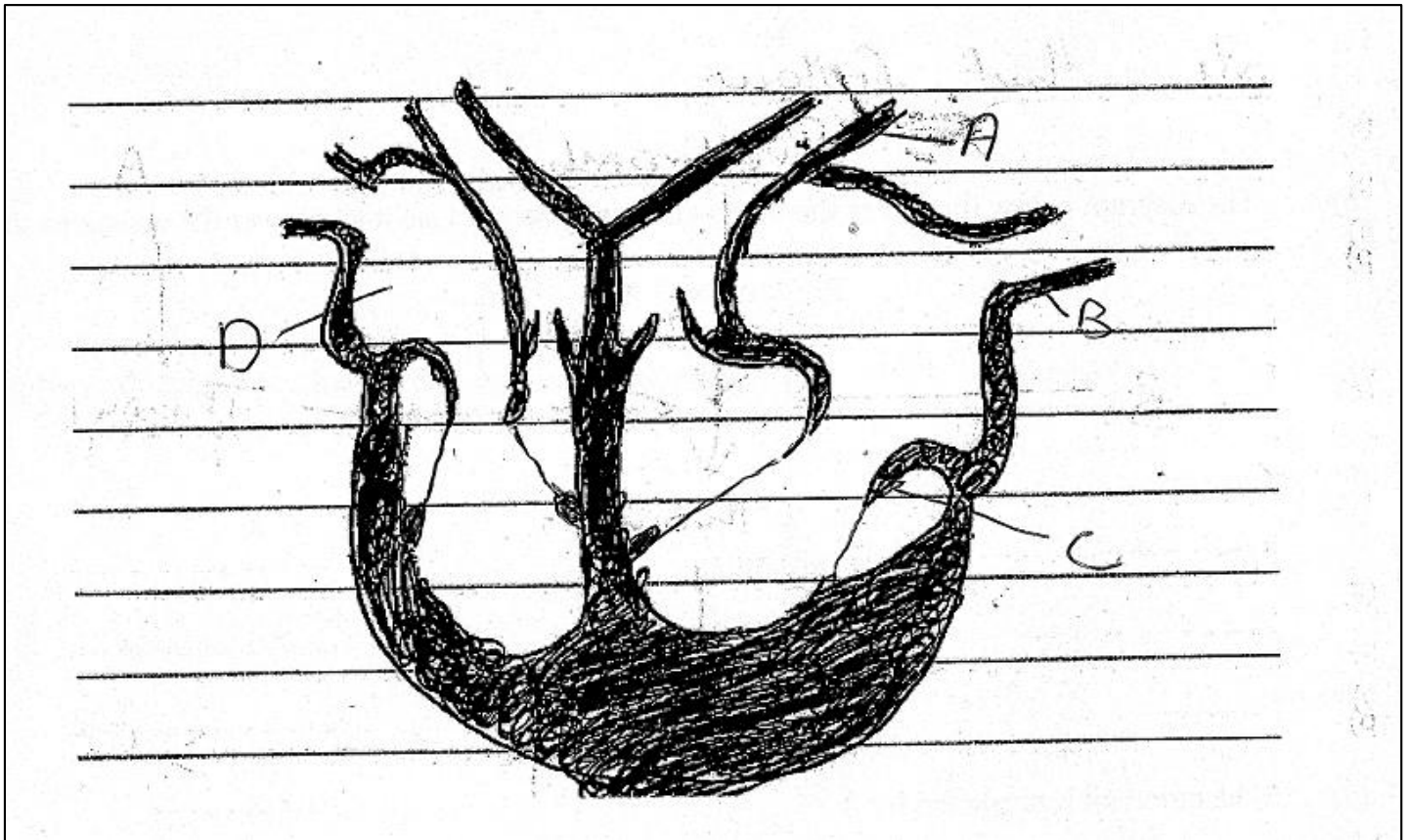
- (i) Transports water and mineral salts. (1mk)

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(ii) Trans - locates synthesized food materials. (1mk)

12) State two structural differences between arteries and veins. (2mks)

13 The diagram below shows a vertical section through a mammalian heart.



(a) Name the parts labeled A and D. (2mks)

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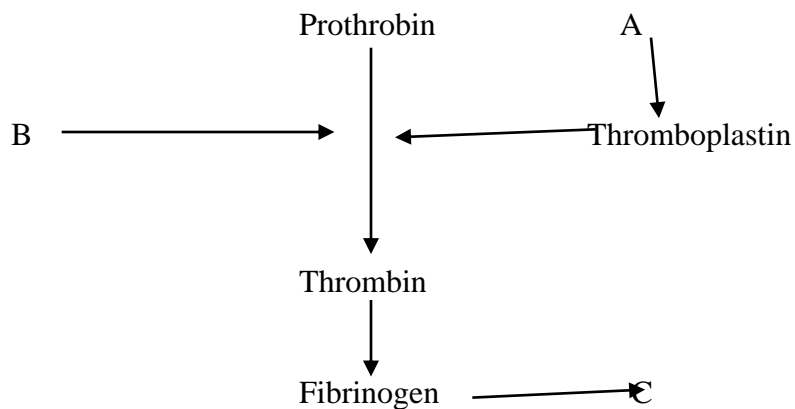
(b) Use arrows to show the direction in which blood flows out of the heart. (2mks)

c) Name the muscle that makes up the heart chambers. (1mk)

d) Which part of the heart is referred to as the pacemaker. (1mk)

14(a) Give two reasons why blood clotting is important. (2mks)

b) The diagram below illustrates the blood clotting process. Use it to answer the questions that follow.



(a) Name
The blood cell represented by A (1mk)

(b) Metal ion represented by B (1mk)

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- c) End product represented by C (1mk)
- 15(a) State three structures used for gaseous exchange in terrestrial plants. (2mks)
- b) How are guard cells structurally adapted for gaseous exchange. (4mks)
- c) Name three structures used for gaseous exchange in frogs. (3mks)
- 16(a) Define respiration. (1mk)
- b) Name the site of aerobic respiration in a cell. (1mk)
- c) List two substances needed for respiration to take place. (2mks)
- 17 a) How are the respiratory surfaces in mammals adapted to their functions (3mks)

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b) State the functions of the following parts of a gill.

(3mks)

i) Gill rakers

ii) Gill bar

iii) Gill filaments

FORM 2 TERM 3 OPENER

NAME..... ADM NO.....CLASS.....

CHEMISTRY.

TIME: 2 HOURS.

SEPTEMBER 2019 OPENER EXAMINATION

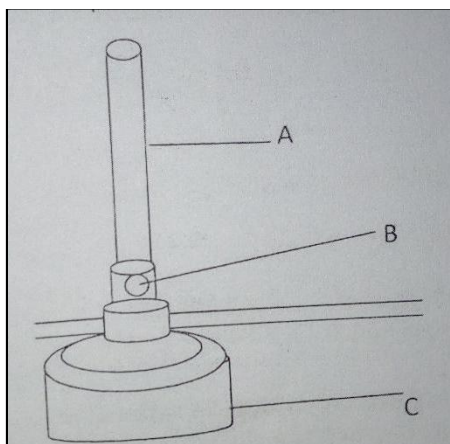
INSTRUCTION TO CANDIDATES

Answer all the questions in the spaces provided.

FOR EXAMINERS USE ONLY.

| QUESTIONS. | MAXIMUM SCORE. | CANDIDATE SCORE. |
|------------|----------------|------------------|
| 1-30. | 100 | |

1. The diagram below shows parts of the Bunsen burner.



(a) Name the parts labelled (1 mark).

A

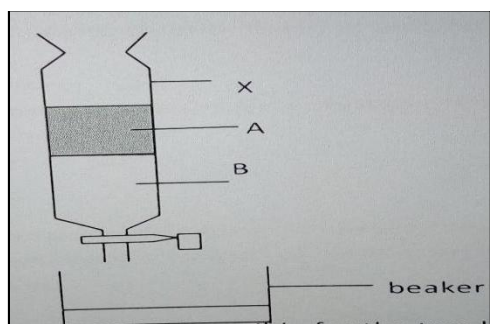
B

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(b) Give one use of the part labelled B (1 mark).

2. Name two apparatus that are used to measure exact volumes (2 marks).

3. The diagram below represents a method of separation used to separate two liquids , A and B,



Use it to answer the questions that follow.

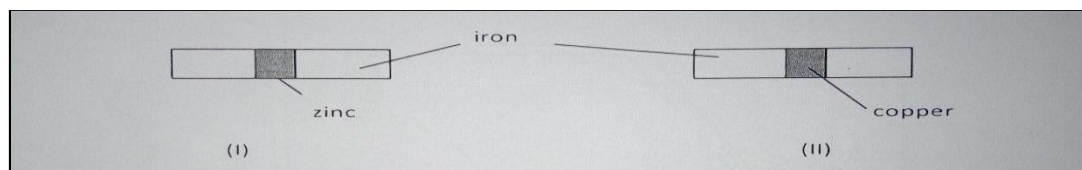
(a) Name the method of separation shown above (1 mark).

(b) Name two properties that makes it possible for the two liquids to be separated (2 marks).

(c) Give one alternative method that may be used to separate the two liquids (1 mark).

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4. In an experiment, two pieces of iron sheet were wrapped in each case with zinc and copper metal sheets as shown below. They were left in the open for some months.



(a) State and explain the observations made in the experiment I and II (3 marks).

I

II

5. Given zinc oxide, dilute nitric (v) acid and sodium carbonate solution. Briefly describe how you can prepare zinc carbonate (3 marks).

6. State two solids that may be heated to obtain oxygen gas as the only gas (2 marks).

7. Study the information given below and answer the questions that follow.

| Formula of the compound. | NaCl | MgCl ₂ | Al ₂ Cl ₆ | SiCl ₄ | PCl ₃ | SCl ₂ |
|--------------------------|------|-------------------|---------------------------------|-------------------|------------------|------------------|
| B.P (° C) | 1470 | 1420 | sublimes | 60 | 75 | 60 |
| M.P(°C) | 800 | 710 | At 800° C | -70 | 90 | -80 |

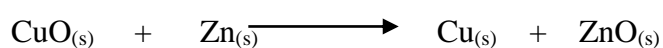
(a) Give two chlorides that are liquid at room temperature. Give a reason for the answer (2 marks)

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(b) Which two chlorides would remain in liquid state for the highest temperature range. Explain (2 marks).

(c) State one use of NaCl (1 mark).

8. Copper (II) oxide reacts with zinc metal as shown below.



Identify the substance that has been:

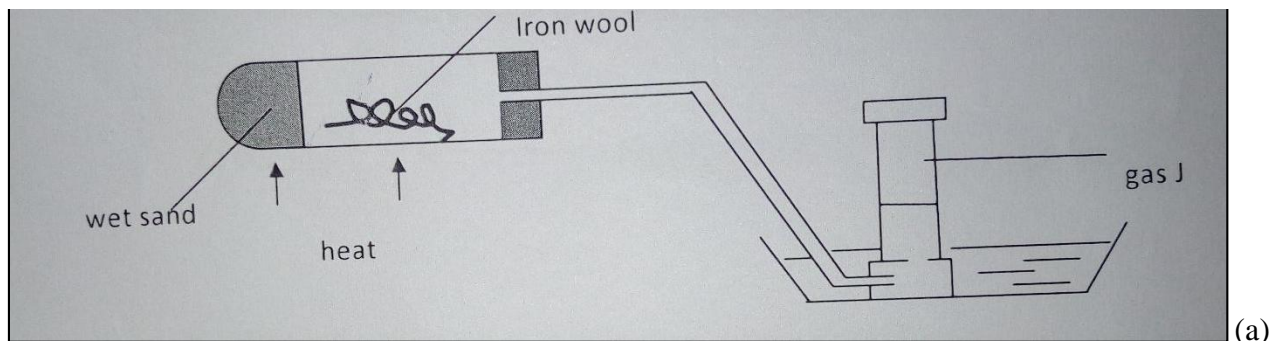
(i) Reduced (1 mark)

(ii) Oxidised (1 mark)

9. An element B burns in air to form an oxide of B which dissolve in water to form a solution that turns blue litmus paper red. (B is not the actual symbol of the element).

Is B a metal or a non-metal? Give a reason for your answer (2 marks).

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



Name gas J (1 mark).

(b) Explain why it is important to heat the wet sand before heating the iron wool (1 mark).

(c) State one observation made in the combustion tube as heating is carried out (1 mark).

11. State two differences between permanent and temporary changes (2 marks).

| Permanent. | Temporary. |
|------------|------------|
| | |
| | |

12. The table below give some properties of substances I, J and K. Study it and answer the questions that follow.

| Substance. | Melting point (^o c) | Solubility in Water. | Electrical Conductivity in: | |
|------------|------------------------------------|-------------------------|-----------------------------|-----------------------------------|
| | | | Solid state. | Molten state. |
| I | 1063 | Insoluble | Conducts. | Conducts. |
| J | 113 | Insoluble | Doesn't | Doesn't |
| K | 402 | Sparingly soluble. | Doesn't | Conducts and it is decomposed. |

(a) Suggest the type of structure in:

I (1 mark).

K (1 mark).

(b) Explain why molten K is decomposed by current but I is not decomposed (1 mark).

13. Solution R,S and T have pH values shown in the table below.

| Solution | pH |
|----------|-----|
| R | 1.0 |
| S | 6.5 |
| T | 8.0 |

(a) What do you deduce about the nature of solution R? (1 mark).

(b) Identify two solutions that will react to form a neutral solution (1 mark).

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14. State and explain the changes in mass that occur when zinc metal is heated in an open crucible (2 marks).

15. The pH of the soil sample was found to be 6.0. An agricultural officer recommended the addition of lime (calcium oxide). State two functions of lime in the soil (2 marks).

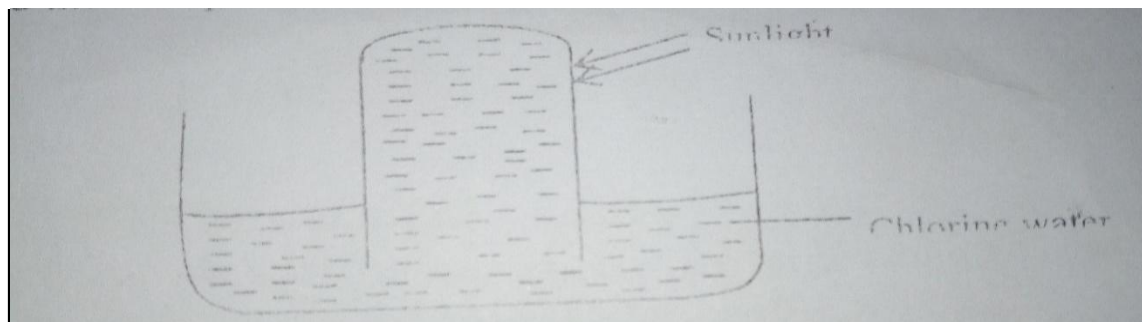
16. (a) Using a dot (.) and cross (x) to represent the outer most electrons, draw diagrams to show the bonding in magnesium sulphide (2 marks). (Mg=12, S=16).

(b) State the structure of the above compound (1 mark).

(c) Give two properties of substances with the above structure (2 marks).

17. In an experiment a test tube full of chlorine water was inverted in chlorine water as shown in the diagram and the set up left in the sunlight for one day.

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After one day a gas was found to have collected in the test tube.

(a) Identify the gas (1 mark).

(b) State the observations made when a blue litmus paper is dipped in chlorine water (1 mark).

18. The elements shown in the table below (not actual symbols) belong to a certain family of metals in the periodic table. Study the information and answer the questions that follow.

| Element. | Atomic size (nm). |
|----------|-------------------|
| S | 0.160 |
| T | 0.180 |
| V | 0.930 |

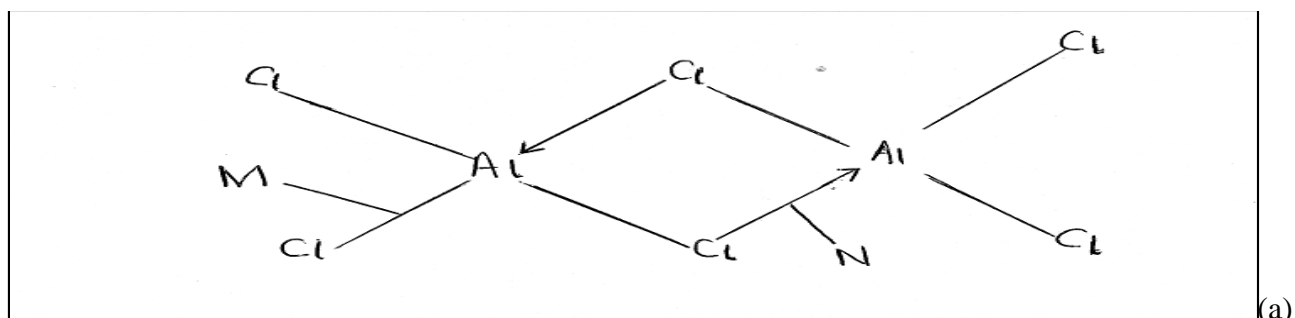
(i) Define the term ionization energy (1 mark).

(ii) Which element is likely to have the highest ionization energy. Explain (2 marks).

19. State two applications of solvent extraction (2 marks).

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20. The diagram below represents the structure of aluminum chloride.



Identify the bonds labeled M and N (2 marks).

M

N

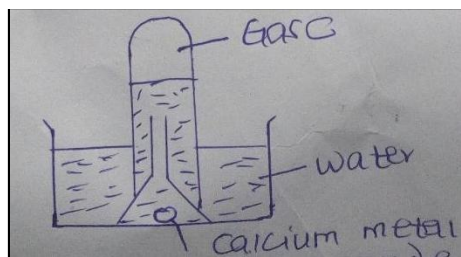
(b) What is the difference between bonds M and N (1 mark).

21. From the following list of compound; Zinc oxide, Potassium carbonate, solid carbon (IV) oxide, nitric acid, iron(III)chloride, sodium chloride.

(i) Identify two substances that sublime (1 mark).

(ii) Identify two substances that react to form salt and water only (1 mark).

22. The figure below is a set up used to investigate the reaction of calcium with water.



(a) State the observation made in the water (1 mark).

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

(b) Identify gas C (1 marks).

(c) State one laboratory application of the solution formed in the reaction (1 mark).

23.(i) State two types of salts (1 mark).

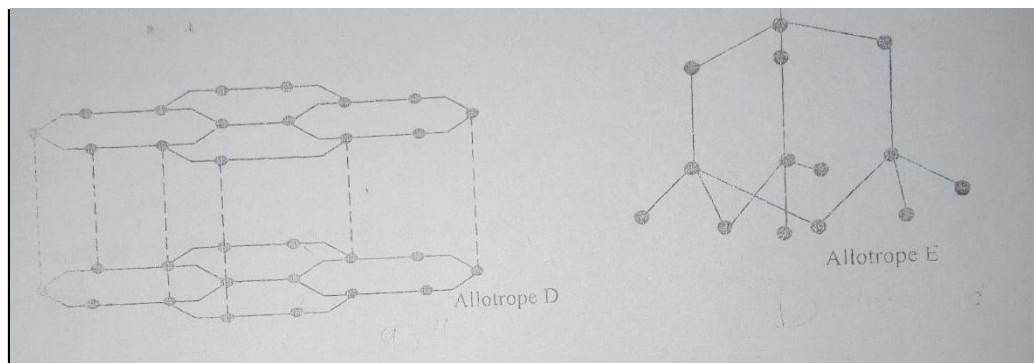
(ii) Name the following processes;

(a) When anhydrous calcium chloride is left in an open beaker overnight a solution was formed (1 mark).

(b) When sodium carbonate decahydrate crystals are left in an open beaker for some days it turned into a powder (1 mark).

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

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(a) Name the allotrope D and E(2 marks).

D

E

(b) Which allotrope does not conduct electricity? Explain (2 marks).

25. Iron(III)chloride can be prepared in the laboratory by passing dry chlorine gas over hot steel wool.

(a) Name the above method of preparing salts (1 mark).

(b) Why should we prepare the salt in a dry environment? (1 mark)

(c) A solution of iron(III)chloride in water changes a blue litmus paper to red. Explain (1 mark).

26. Metal S removes oxygen combined with P. Q reacts with an oxide of R but not with an oxide of P. P reacts with cold water but Q does not.

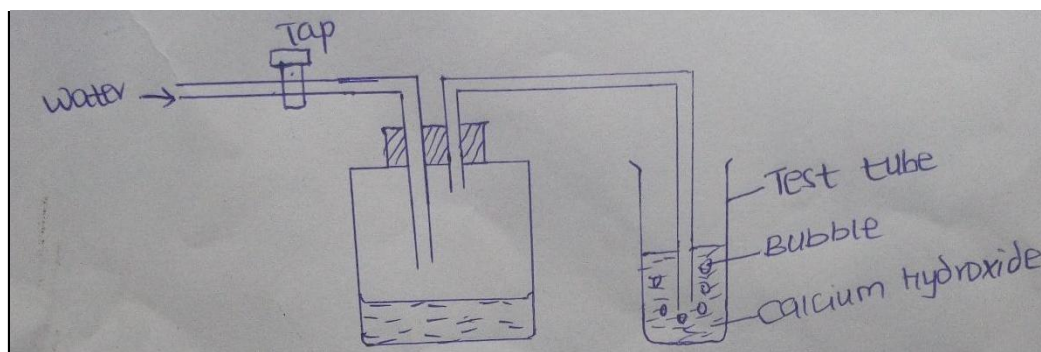
(a) Which is the most reactive metal? (1 mark).

(b) Which is the least reactive metal? (1 mark).

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(c) Arrange the metals in order of reactivity starting with the most reactive to the least reactive (1 mark).

27. The figure represents a set up of apparatus that was used to demonstrate the existence of a component of air.



(i) What is the purpose of water from the tap? (1mark).

(ii) Other than bubbles, give one other observation made in the test tube (1 mark).

(iii) Name a gas that was not absorbed by the calcium hydroxide. (1mk)

28. The grid below is part of the periodic table. Study it and answer the questions that follow. The letters do not represent the actual symbols of the elements.

| | | | | | | | | |
|---|--|--|--|--|---|--|---|--|
| A | | | | | | | A | |
| | | | | | F | | | |

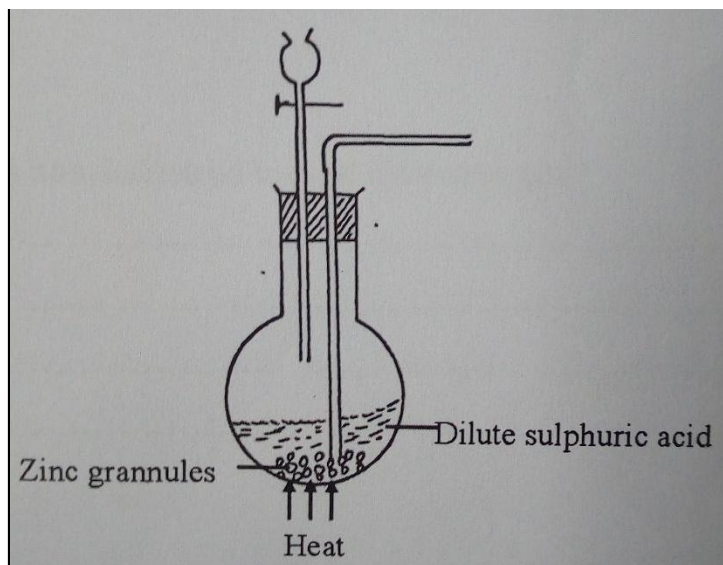
FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

| | | | | | | |
|--|---|--|---|--|---|---|
| | C | | | | E | K |
| | D | | B | | H | |

- (a) Element A fits in two groups. Explain (2 marks).
- (b) i) Name two elements that can form ions with a charge of -1. Explain your answer (2 marks).
- ii) What type of structure would the oxide of B have? (1 mark).
- (c) How does the reactivity of H compare with that of E? Explain. (2 marks)
- (d) What name is given to the group of elements to which C and D belong? (1 mark).
- (e) Write the formula of the compound formed when elements C and F react (1 mark).
- (f) Draw dot (.) and cross (x) diagram to represent the compound formed in (e) above (2 marks).

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

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(a) State the catalyst that is used in preparation of hydrogen gas (1 mark).

(b) Identify two errors from the section of the arrangement shown above (2 marks).

(c) Complete the diagram to show how dry hydrogen gas can be collected (2 marks).

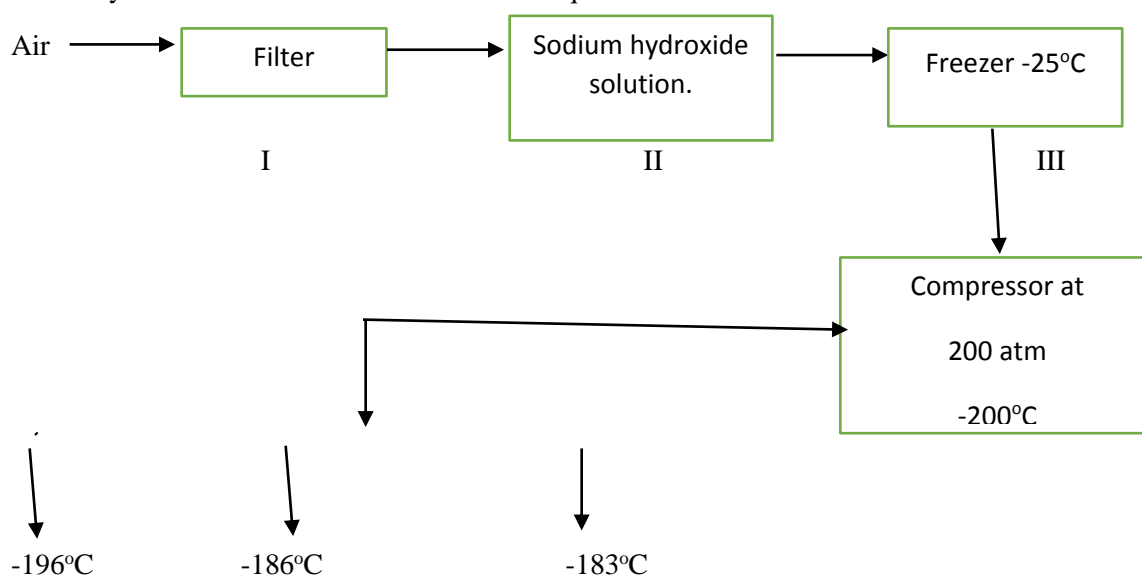
(d) Explain the effect of hydrogen gas on a wet red litmus paper (1 mark).

FOR MARKING SCHEMES CALL/TEXT/WHATSAPP 0705525657

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

(f) State one property of hydrogen gas that makes it to be used in balloons (1 mark).

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



(a) Name the substances removed in steps I, II and III (3 marks).

I

II

III

(b) Name the gases obtained with respect to their boiling points (3 marks).

-196°C

-186°C

-183°C

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