FRM 4 MIDTERM 2 EXAM

ALL SUBJECTS

SERIES 2

KENYA EDUCATORS CONSULTANCY EXAMS

FOR MARKING SCHEMES:
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KENYA EDUCATORS CONSULTANCY

MID TERM 2 EXAM
AGRICULTURE (443/1)
PAPER 1
FORM FOUR (4)
Time: 2 Hours

Name: ……………………………………………………… **Adm No**: ………………..

School: …………………………………………………….. **Class**: …………………..

Signature: ………………………………………………….. **Date**: …………………...

<u>Instruction to candidates</u>

- ➢ Write your name and index number in the space provided at the top of this page .
- ➢ Sign and write the date of the examination in the space provided above
- ➢ This paper consists of three section A, B, and C
- ➢ Answer all questions in section A and B
- ➢ Answer any two questions in section C
- ➢ All answers should be written in the spaces provided
- ➢ Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing .
- ➢ Candidate should answer the questions in English

FOR EXAMINERS USE ONLY

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATE SCORE
A	1-16	30	
B	17-20	20	
C		20	
		20	
	TOTAL SCORE	90	

<u>SECTION A (30 MRKS)</u>

Answer all question in this section in the space provided

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

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

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3. Give four methods of farming (2mrks)

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4. Give two examples for each of the following types of cost incurred in broiler production .
   a) Variable cost (2 marks)

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   b) fixed cost (2 marks)

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

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

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

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

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

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10. Outline four indicators of well decomposed manure (1 ½mks)

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

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

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

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

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15. Give four roles of nitrogen in plants (2mrks)

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

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SECTION B (20 MRKS)

17. The diagram below illustrates a feature observed after digging the soil several metres deep
    Study the diagram carefully and answer the question that follow
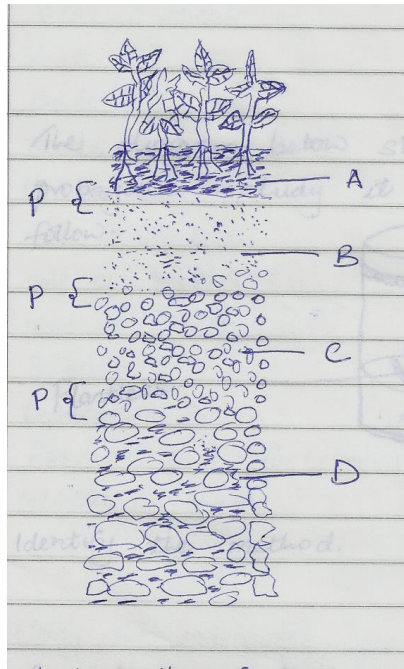
a) Identify the feature that the diagram above represents in the study of soil (1mrk)

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

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

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

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

a) Identify the method (1mrk)

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

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

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

Particulars	kshs
Opening Valuation	100,000
Calves	72,000
Hired Labour	21,000
Sales of milk	13,000
Sales of cereals	33,000
Rent	9,000
Feed	5,300
Seed	1,700
Fertilizers	4,700
Sales of Vegetables	9,300
Sales of poultry	1,800
Sales of fruits	700
Pesticides	1,250
Depreciation	650
Repair and Maintenance	950
Interest on loans	200
Closing Valuation	9,0000

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

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

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20) The diagram below shows a maize stalk infected by a certain pest. Study it and answer the questions that follow .
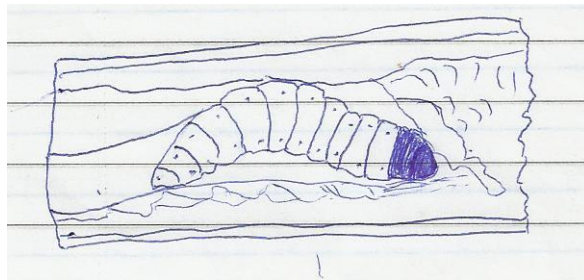
a) Indentify the pest (1/2 mk)

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

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

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SECTION C (40MARKS)

Answer any two questions in this section in the spaces provided

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

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

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

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

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

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

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23. a) Describe the importance of agro forestry in soil and water conservation (6mks)

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b) Describe the process of silage making (8mks)

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    c)   Describe the effects of over application of nitrogenous fertilizers (6mks)

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MID TERM 2 EXAM
AGRICULTURE (443/2)
PAPER 2
FORM FOUR (4)
Time: 2 Hours

Name: …………………………………………………. **Adm No**: ……………….

School: ………………………………………………….. **Class**: …………………..

Signature: ………………………………………………….. **Date**: …………………...

INSTRUCTIONS TO CANDIDATES:

- *Write your **name** and **index number** in the spaces provided.*
- *Sign and write the date in the spaces provided above*
- *This paper consists of three section **A, B** and **C***
- *Answer **all** the questions in section **A** and **B***
- *Answer any **two** questions in section **C**.*
- *Answers should be written in the spaces provided in this booklet.*

For Examiner's Use Only:

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATES SCORE
A		30	
B		20	
C		20	
		20	
	TOTAL	**90**	

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

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

1. State **four** maintenance practices of a forked jembe. (2mks)

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

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

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2. Fill in the origin for the breeds of livestock shown in the table below. (2mks)

Livestock breed	Origin
Friesian cattle	
Aberdeen Angus cattle	
Large white pig	
Boer goat	

3. State the importance of keeping livestock healthy. (2mks)

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4. Give the functional difference between a pruning knife and a pruning saw. (1mk)

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

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5. Name any **two** dual purpose breeds of sheep. (1mk)

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

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

6. List any **four** pre-disposing factors of livestock diseases. (2mks)

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7. Differentiate between the terms breed and type of animal.   (1mk)

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8. Give the factors that determine the amount of water taken by an animal.   (3mks)

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9. List any **four** causes of livestock diseases.   (2mks)

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10. Give the reasons for breeding in livestock.   (2mks)

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11. List the materials used in making walls of farm buildings.   (2mks)

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12.   What is the meaning of the term immunity as used in livestock health.   (1mk)

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13.   State the measures that prevent egg eating in poultry.   (2mks)

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14.   State the signs of heat in pigs.   (3mks)

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15.   Give **one** use of a screen in a fish pond.   (1mk)

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16.   State **two** methods of service in livestock.   (1mk)

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17.   Give the advantages of wall fence.   (1mk)

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18.   List the factors considered in sorting and grading eggs for market.   (1mk)

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19. The diagram X and Y below show the hooves of sheep.

X

Y

   a) Which one of the two hooves would be more susceptible to foot-rot disease. (1mk)

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b) What routine management practice is required on the hoof to control foot rot? (1mk)

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c) State four symptoms of hoof rot. (2mks)

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20. a) The illustrations below labeled V, W, and X show three different ways some hens were debeaked.

  I   II   III

    i)   Which hen was correctly debeaked?   (1mk)

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    ii)   State two reasons for your choice in (i) above.   (1mk)

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  b)   Name any two tools which would be used for debeaking.   (2mks)

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21. Below are diagrams illustrating the behaviour of chicks in various brooders. Study the diagrams and answer the questions that follow:

A

HEAT SOURCE

B

C
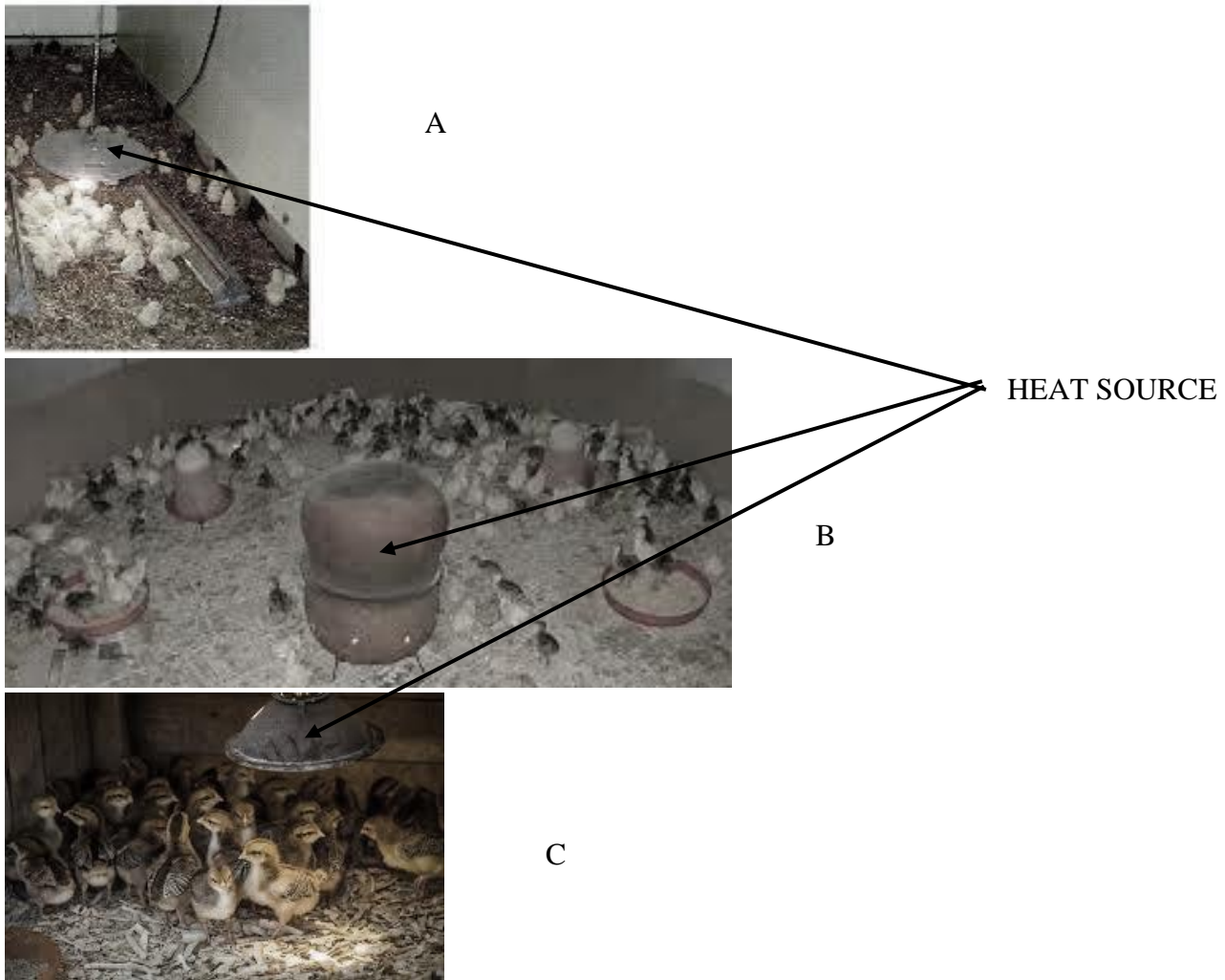
a) State the environmental problem in each brooder as illustrated by the behaviour of the chicks.

(3mks)

A   ………………………………………………………………………………………….

B   ………………………………………………………………………………………….

C   ……………………………………………………………………………………………………….

b)   State one way of solving the problem in B.   (1mk)

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22.   Below is a diagram of a male goat.
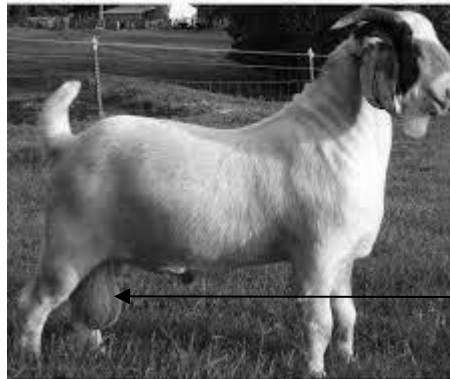
a)   What operation is carried out on the part labeled F.   (1mk)
………

b)   Why is it necessary to carry out the operation.   (2mks)
………

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c)   Give any two suitable methods of carrying out the operation in (a) above.   (1mk)
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23. Below is a diagram of a two-stroke engine cylinder.

M

N

L
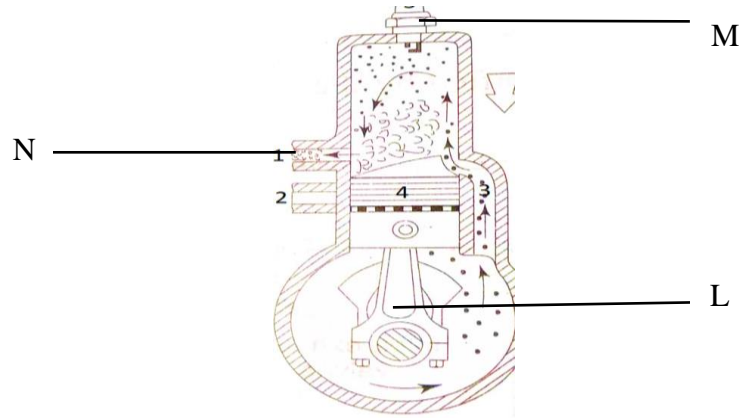
a) Name any one farm machine where the above engine is used. (1mk)

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b) Identify the parts labeled M, L, and N. (3mks)

L …………………………………………………………….

M …………………………………………………………….

N …………………………………………………………….

SECTION C (40 MARKS)
Answer any TWO questions in this section in the spaces provided after question 26.

24. a) Describe the feeding management of broiler chicks from one day old to slaughtering. (10mks)

b) Describe the routine management practices in dairy calves. (6mks)

c) Describe the factors that affect milk composition. (4mks)

25. a) Describe a blue tick (*Boophilus decolaratus*) under the following sub-headings.

i) Diseases transmitted. (2mks)

ii) Preferred site of attachment. (3mks)

iii) Non-chemical control measures. (5mks)

b) Discuss mastitis disease under the following sub-headings:

i) Predisposing factors. (5mks)

ii) Control and treatment. (5mks)

26. a) Describe the functions of each of the following parts of a plunge dip. (7mks)

i) Foot bath

ii) Entrance race

iii) Roof

iv) Drainage race

v) Jump

vi) Dip tank

vii)   Exit steps.

b)   i)   Describe the disadvantages of animal power.   (5mks)

    ii)   State the advantages of four-strokes engine over two stroke engines.   (3mks)

c)   Describe the factors that influence the amount of concentrate a lactating animal would be given.   (5mks)

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MID TERM 2 EXAM
BIOLOGY (QUESTION PAPER)

FORM FOUR

TIME: 2 HOURS

PAPER 1

Name…………………………………………………… Adm No………………………………..
School………………………………………………… Class……………………………………
Signature……………………………………………….. Date……………………………………

<u>INSTRUCTIONS</u>

1. All Questions are Compulsory
2. Write your Answers in the Spaces Provided
3. Wrong Spelling of Technical Terms shall be Penalized

Max Score	Student's Score
80	

1. State **TWO** ways in which the study of Biology has helped the world in the accelerated fight against the recent Covid-19 pandemic. (2mks

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2. a) Give **ONE** function of centrioles (1mk

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

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

   b) Name a Kingdom in which all members lack centrioles in their cells (1mk

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

3. a) Name the skin pigment formed by cells in the mammalian skin

   ………………………….…………………………………………………………….....(1mk

   b) Which genetic disorder is associated with the absence of the pigment named in 2a)?

   ……………………………………………………………………………………...……(1mk

   c) How does the skin pigment help protect human beings against skin cancer?

   ……………………………………………………………………………………...………(1mk

4. Explain the following observations

   a) More water hyacinth plants are found growing along the shore of Lake Victoria than in the deep waters

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

   ………………………………………………………………………………...………(1mk

   b) Green plants grow faster in lower altitudes areas than in higher altitude areas

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

   …………………………………………………………………………………...……...(2mks

5. State **TWO** functions of a cover slip in light microscope work

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…………………………………………………………………………………………...………..(2mks

6. Use the diagram of the heart shown below to answer the questions that follow
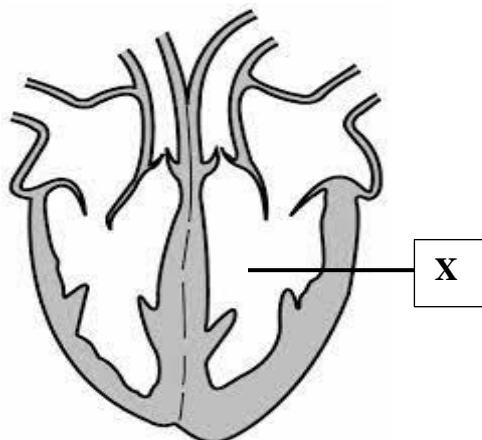
a) From the diagram, give a reason to show that **X** is the left ventricle

…………………………………………………………………………………...………(1mk

b) Name a class of organisms where all members have the heart structure above

…..…………………………………………………….…………………………......…(1mk

c) Why are the muscles found in the heart above said to be myogenic?

…………………………………………………………………………………...………(1mk

7. Account for the following

a) Red blood cells lack mitochondria

…………………………………………………………………………………………………

………………………………………….……………………………………...………..(1mk

b) The testes are found hanging outside the body in male human beings

…………………………………………………………………………………………………

……………………………………….…………………………………………...………..(1mk

8. a) Why is pancreas said to be a dual gland?

…………………………………………………………………………………………………

…………………………………………….…………………………………...………..(1mk

b) Name the endocrine tissue in the pancreas

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

……………………………………………………………………………………...……...(1mk

9. A student made a set up shown below to study a physiological process
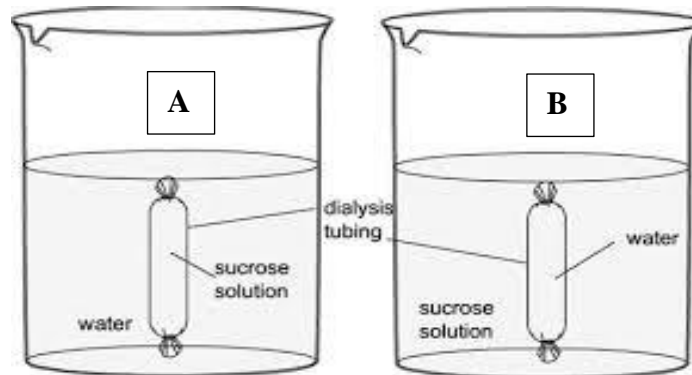
a) In which beaker did the dialysis tubing reduce in size?

………………….………………………..………………………………………...………(1mk

b) Account for your answer in a) above

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

……………………….………………….………………………………………...……...(2mks

10. The diagram below shows a graph of body temperature of two different organisms against changing environmental temperature
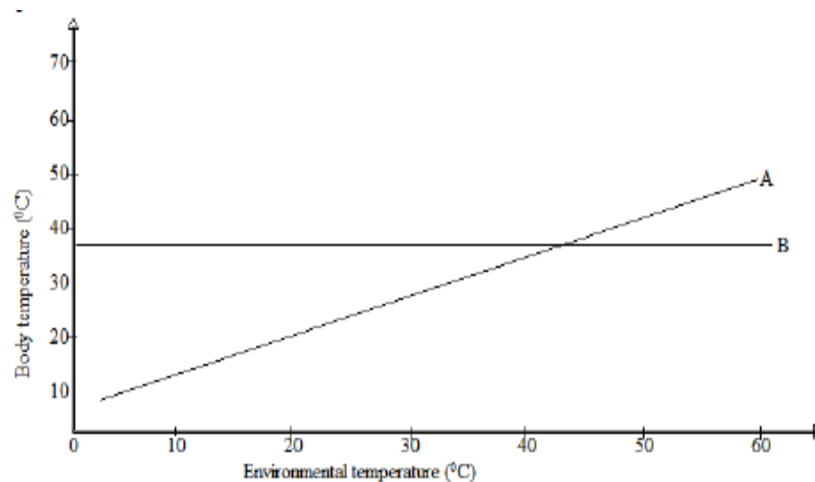
a) State the name used to refer to animal **A** in terms of thermoregulation

…………………………………………………………………………………...…………(1mk

b) State **TWO** advantages animal **B** has over animal **A**

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

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

…………………………………………………………………………………...……..(2mks

11. The diagram shown below is of a flower
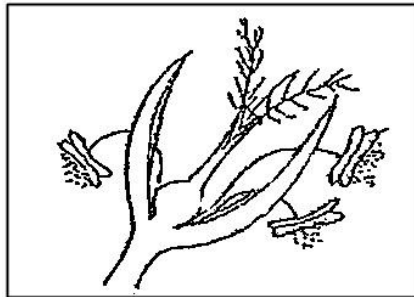
a) Name the agent of pollination for this flower

…………………………………………………………………………………...………(1mk

b) Give **TWO** adaptive features from the diagram to support your answer in a) above

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

………………………………………………………………………………...……..(2mks

12. The process of gamete formation is represented below

P   **Q**
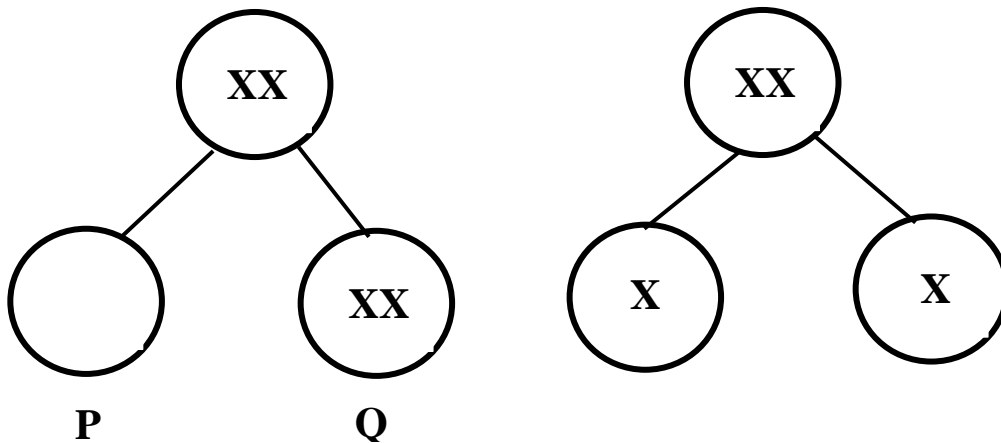
a) State a reason why the process above represents gamete formation in female mammals

………

………………………………………………………………………………....…..……....(1mk

b) Name the chromosomal mutation represented above

…………………………………………………………………………………...………(1mk

c) Identify the genetic disorder that arise when the following gametes are fertilized

  i)   **P** ………………………………………………………………….(1mk

  ii)   **Q** ………………………………………………………………….(1mk

13. A sample of air was passed through pyrogallic acid and its volume reduced from 8 cm^3 to

    7 cm^3. When it was later passed through lime water, the volume reduced to 6.8cm^3.

    a) What was the role of pyrogallic acid in this experiment?

    ………………………………………………………………………...………(1mk

    b) Determine the percentage of Carbon (IV) oxide in the sample of air

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

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

    ……………………………………………………………………...……...(2mks

    c) Is this sample of air exhaled air or inhaled air?

    ………………………………………………………………………...………(1mk

14. The stage-wise process of germination of a seed is shown below
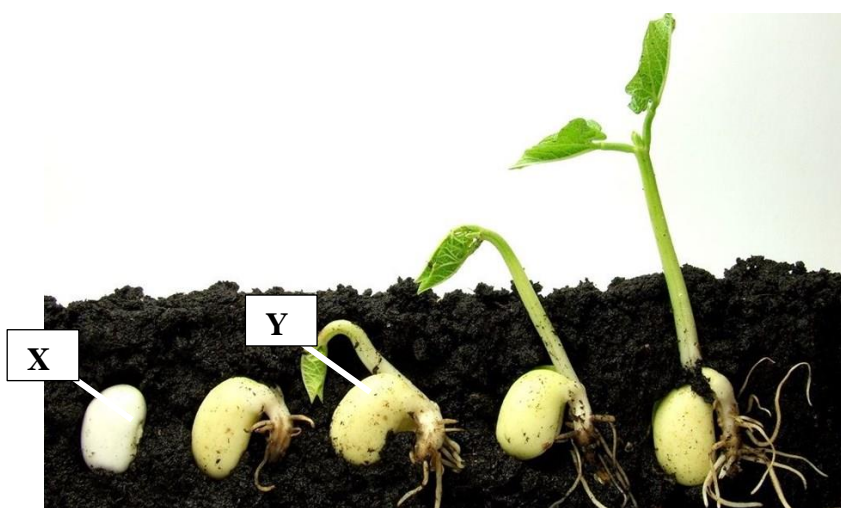
a) Give a reason why the diagram above represents hypogeal germination

………………………………………………………………………………...………(1mk

b) Account for the change in dry weight of the cotyledon at stage **X** and **Y**

……………………………………………………………………………………………
…………………………………………………………………………………...……...............
……………………………………………………………………………………………
………………………………………………………………………………...……...(2mks

15. Barbra observed animal cells in a field of view of a light microscope as shown below. If she used a total magnification of X1000 determine the actual diameter of one cell

—1.5 mm—
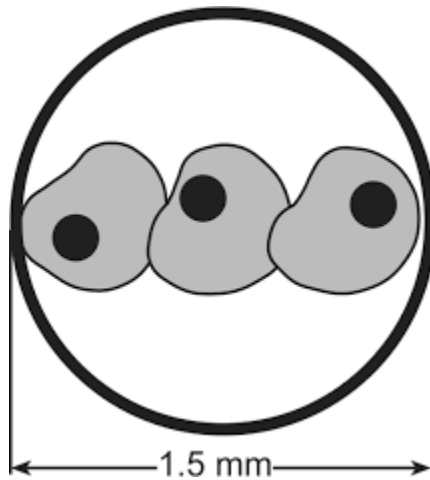
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……………………………………………………………………………………………
………………………………………………………………………………...……...(3mks

16. Explain the importance of the following features

a) Acrosome in the spermatozoa

……………………………………………………………………………………………
………………………………………………………………………………...…………..(2mks

b) Hair-like structures in the fallopian tube

…………………………………………………………………………………………
……………………………………………………………………...…….…..(1mk

17. a) What are vestigial structures?

…………………………………………………………………………………………
……………………………………………………………………...…….…..(1mk

b) Explain why divergent evolution is advantageous to living organisms?

…………………………………………………………………………………………
……………………………………………………………………...……….(2mks

18. The various stages of mitosis are represented below
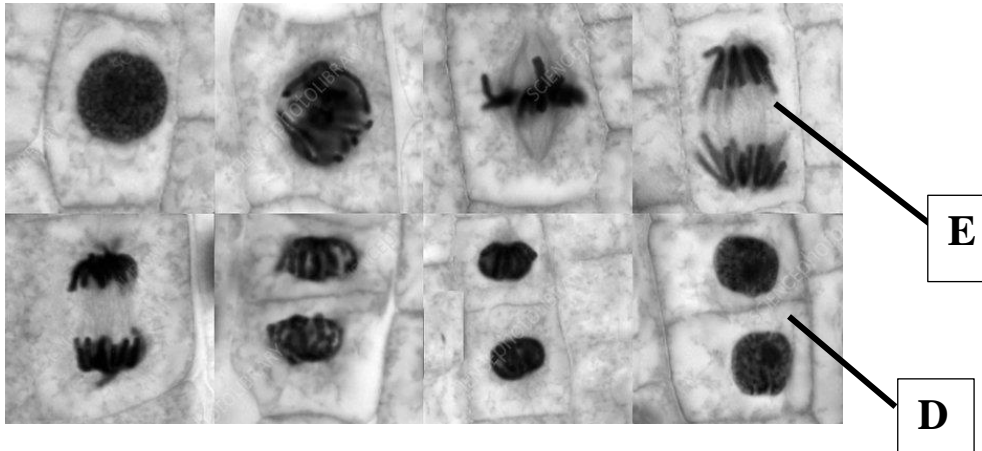
a) Identify the stages represented by the letters:

i) **D** …………………………………...…………………………………..(1mk

ii) **E** …………………...…………………………………………………..(1mk

b) What shows that the process represented above is taking place in a plant cell?

…………………………………………………………………………………
……………………………………………………………….……..…..(1mk

19. The diagram shown below represents the various nerve cells
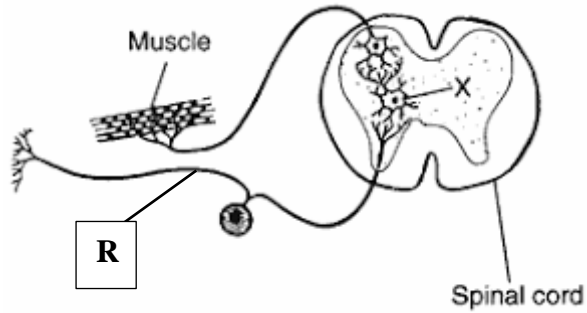
a) Use arrows to show direction of impulse in a reflex arc in the diagram above   (1mk

b) Outline expected **TWO** structural differences between nerve cell **R** and **X**

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

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

……………………………………………………………………………………...……...(2mks

20. State the function of the following muscles in the body

i) Cardiac sphincter muscles

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

………………………………………………………………………………...……...(1mk

ii) Erector pili muscles

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

………………………………………………………………………………...……...(1mk

21. The diagrams below are of seedlings before and after an experiment.

a) Under which light condition was the experiment carried out

……………………………………………………………………………………..…...(1mk

b) Which term describes the appearance of the seedlings at the end of the experiment

……………………………………………………………………………..…..(1mk

c) What is the importance of the above experiment in crop production?

……………………………………...……………………………………..…...(1mk

22. State the function of the following cells in the body of organisms

a) Palisade

……………………………………...………………………………………..…..(1mk

b) Schwann

……………………………………...………………………………………..…..(1mk

c) Sertoli

……………………………………...………………………………………..…..(1mk

23. a) Mary suspects that she has diabetes mellitus. Using a sample of her urine describe a school laboratory procedure she can follow to confirm it is true

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………...……...(3mks

b) Why is insulin not administered orally?

………………………………………………………………………………………………

…………………………………………………………………………...….…...(1mk

24. The following is an illustration of a bone

M

N
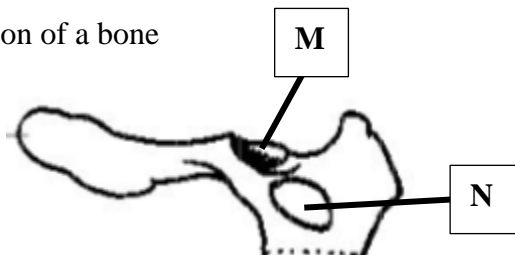
a) Give the name of the bone

………………………………………………………………………………..…….…...(1mk

b) State an advantage of the joint formed at the part labelled **M**

………………………………………………………………………………..…….…...(1mk

c) State the function of the part labelled **N**

………………………………………………………………………………..…….…...(1mk

25. a) Distinguish between population and community as used in ecological studies

……………………………………………………………………………….…………

……………………………………………………………………………….…………

……………………………………………………………………….…...……....(2mks

b) State the formula for population estimation using capture recapture method

……………………………………………………………………………….…………

……………………………………………………………………………….…………

……………………………………………………………………….…...……....(1mk

26. The diagram below shows the structure of germinating pollen grain
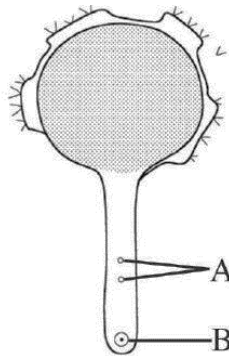
a) Name the type of cell division that formed the parts labelled A

………………………………………………………….………………...…..…….....(1mk

b) State the role of part labelled B

……………………………………………………………………………….…………

………………………………………………………………………….…...……....(1mk

27. The picture of a common animal is represented below

a) Name the class to which the organism shown above belongs

………………………………………………………………………………...…..…..(1mk

b) Give **TWO** reasons for your answer in a) above

………………………………………………………………………………………………

………………………………………………………………………………………………

…………………………………………………………………………….....……..(2mks

28. The following experimental set up was placed in sunshine to investigate a biological

process
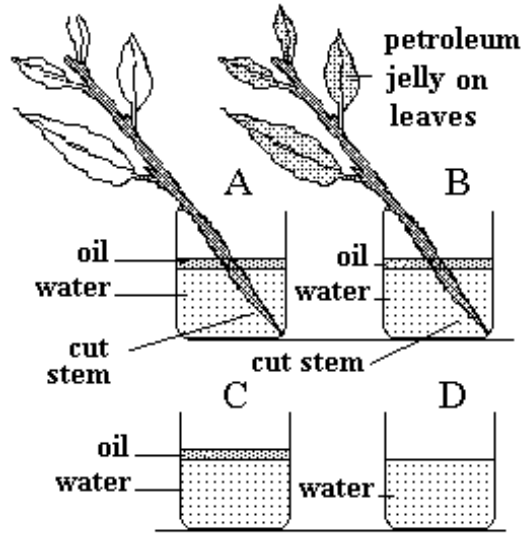
a) Account for the expected result in the level of water in the beaker labelled **B**

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

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

…………………………………………………………………………………...………..(2mks

b) Why were the set up **C** and **D** included in the experiment?

…………………………………………………………………………………...………..(1mk

THE

END
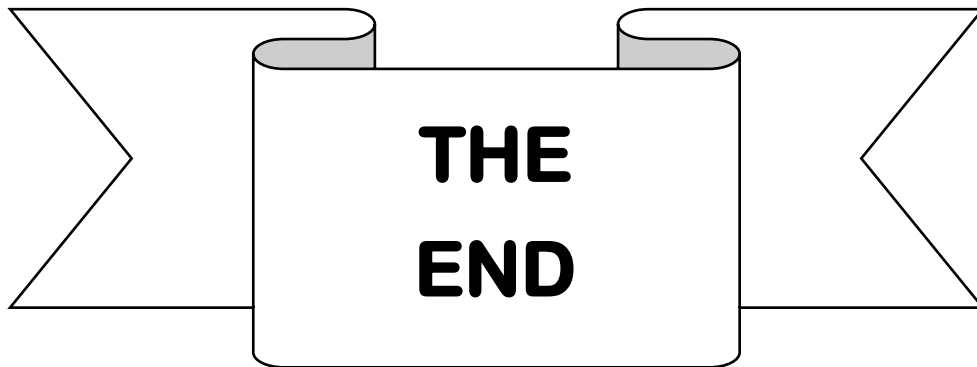
MID TERM 2 EXAM

BIOLOGY (CONFIDENTIAL REPORT)

FORM 4

TIME 2 HOURS
PAPER 3

Name…………………………………………………… Adm No……………………………..
School……………………………………………………. Class…………………………………
Signature…………………………………………………….. Date……………………………………

 CONFIDENTIAL

Each candidate should have the following;

Transparent ruler

20mls of **distilled water** in a boiling tube labelled **solution X**.

20mls of **saturated NaCl solution** in a boiling tube labelled **solution Y**.

DCPIP solution

A large sized maize grain labelled **specimen X**

Scalpel

NaOH solution (about 5ml)

Bunsen burner

Labels (2 pieces)

Medium sized passion fruit labelled **Specimen Z**.

Test tube holder

Test tubes (3 pieces)

Complete leaf (medium sized) of **Sukuma wiki** (kales) labelled **Specimen A**.

Boiling tubes (2 pieces)

Mortar and pestle

Distilled water (about 15ml) in a small beaker

Benedict's solution (about 5mls)

$CuSO_4$ solution (about 2mls) with a dropper

Measuring cylinder (50ml capacity)

Test tube holder

Bean pod (any type of bean) or Crotalaria pod labelled **Specimen Y**.

MID TERM 2 EXAM

BIOLOGY (QUESTION PAPER)

FORM FOUR

TIME: 1 ³/4 HOURS

PAPER 3

Name…………………………………………………… Adm No………………………………..
School…………………………………………………… Class……………………………………
Signature…………………………………………….. Date……………………………………

<u>INSTRUCTIONS TO CANDIDATES:</u>

- .*Write your **name, index number, admission number**, **school** and **stream** in the spaces provided above.*
- ***Sign** and write the **date of examination** in the spaces provided above.*
- *You are required to spend the first 15 minutes of the 1³/4 hours allowed for this paper reading the whole paper carefully before commencing your work.*
- *Answer **ALL** the questions in this paper in the spaces provided.*
- *Candidates **should** answer the questions in English.*

<u>FOR EXAMINER'S USE ONLY</u>

Question	Maximum score	Candidate's score
1	**16**	
2	**12**	
3	**12**	
Total	**40**	

This paper consists of 8 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and no questions are missing

1. You are provided with **<u>Specimen A</u>, Solution X** and **Solution Y.**

(a) Cut out a cylindrical portion of the petiole from **Specimen A** measuring 5cm long (reserve the leaves for **part b** of the question). Make a longitudinal section through the petiole so as to divide it into two identical straight halves as shown below;

Petiole

Scalpel
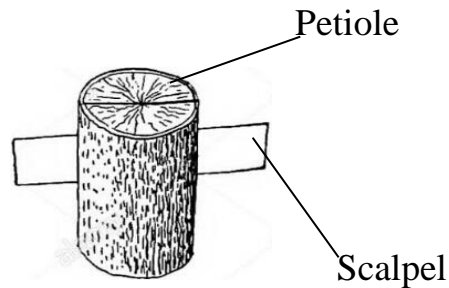
Place one straight half of the petiole into the boiling tube containing **solution X**, and label the tube as **Set up I.** Place the other straight half of the petiole into the boiling tube containing **solution Y**, and label the tube as **Set up II.** Leave the two set ups to stand for 30 minutes.

Remove the two halves of the petiole from the solutions and examine them.

(i) Account for the curvature of half of the petiole in **set up I**. (5marks)

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

(ii) Based on your observation of the curvature of half of the petiole in **set up II**, state the nature of **solution Y** in relation to plant cells. (1mark)

....

(b) Cut the leaves of specimen A into small pieces and place them into a mortar.

Add 10ml of distilled water, then grind them using a pestle so as to obtain an

extract called **solution R**. Using the reagents provided, carry out various tests

using the procedures in the table below to determine the food substances in the solution R. In each case, state the observation and conclusion made.   (6 marks)

Food substance	Procedure	Observation	Conclusion
Proteins	-Place 2ml of solution R into a test tube. - Add equal amount of NaOH solution. -Add $CuSO_4$ solution dropwise and shake		
Reducing sugars	-Place 2ml of solution R into a test tube. -Add equal amount of Benedict's solution. -Boil the mixture.		
Vitamin C	-Place 2ml of DCPIP into a test tube. -Add solution R dropwise as you shake.		

(c) The **photograph I** below shows the internal structure of **Specimen A.** Study it carefully and answer the questions that follow.

PHOTOGRAPH I
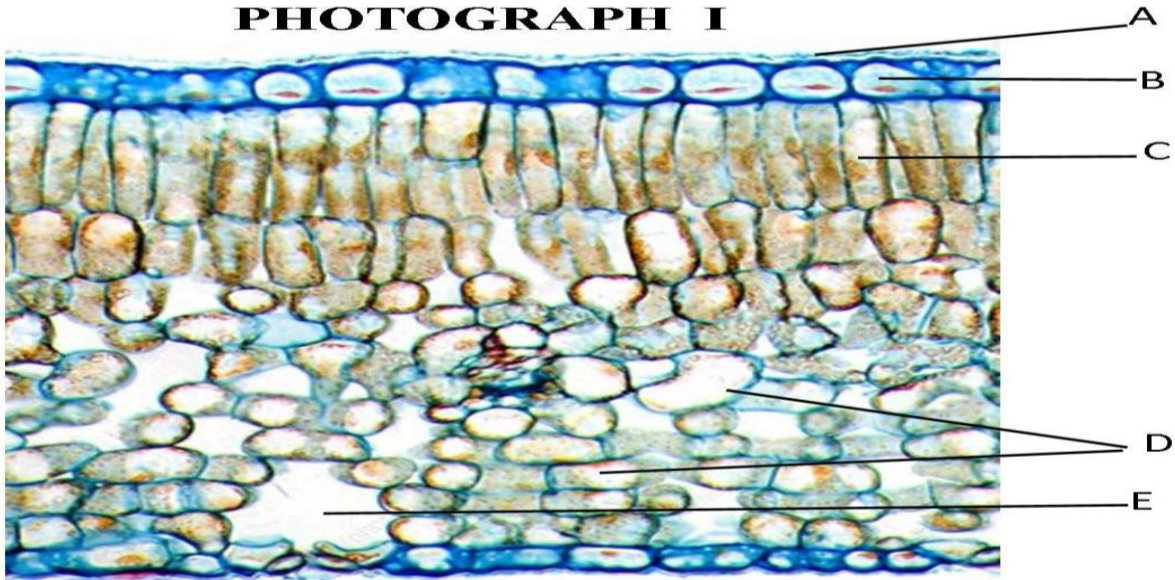
(i) Identify the structures labelled A and B.   (2marks)

A..

B..

(ii) State **one** structural difference between cells C and D.   (1mark)

....

....

(iii) What is the function of the part labelled E ?   (1mark)

....

2. You are provided with **Specimens X, Y** and **Z.**

 (a) State the type of dry, indehiscent fruit represented by **specimen X.**   (1mark)

....

(b) With a reason, state the method of dispersal of **specimen Y**.   (2marks)

   (i) Method of dispersal...

(ii) Reason..

(c) Cut **specimen Z** transversely so as to obtain two identical halves. Draw and label the cut surface of one half. (3marks)

(d) Below is a photograph of the internal longitudinal section of **Specimen X**.
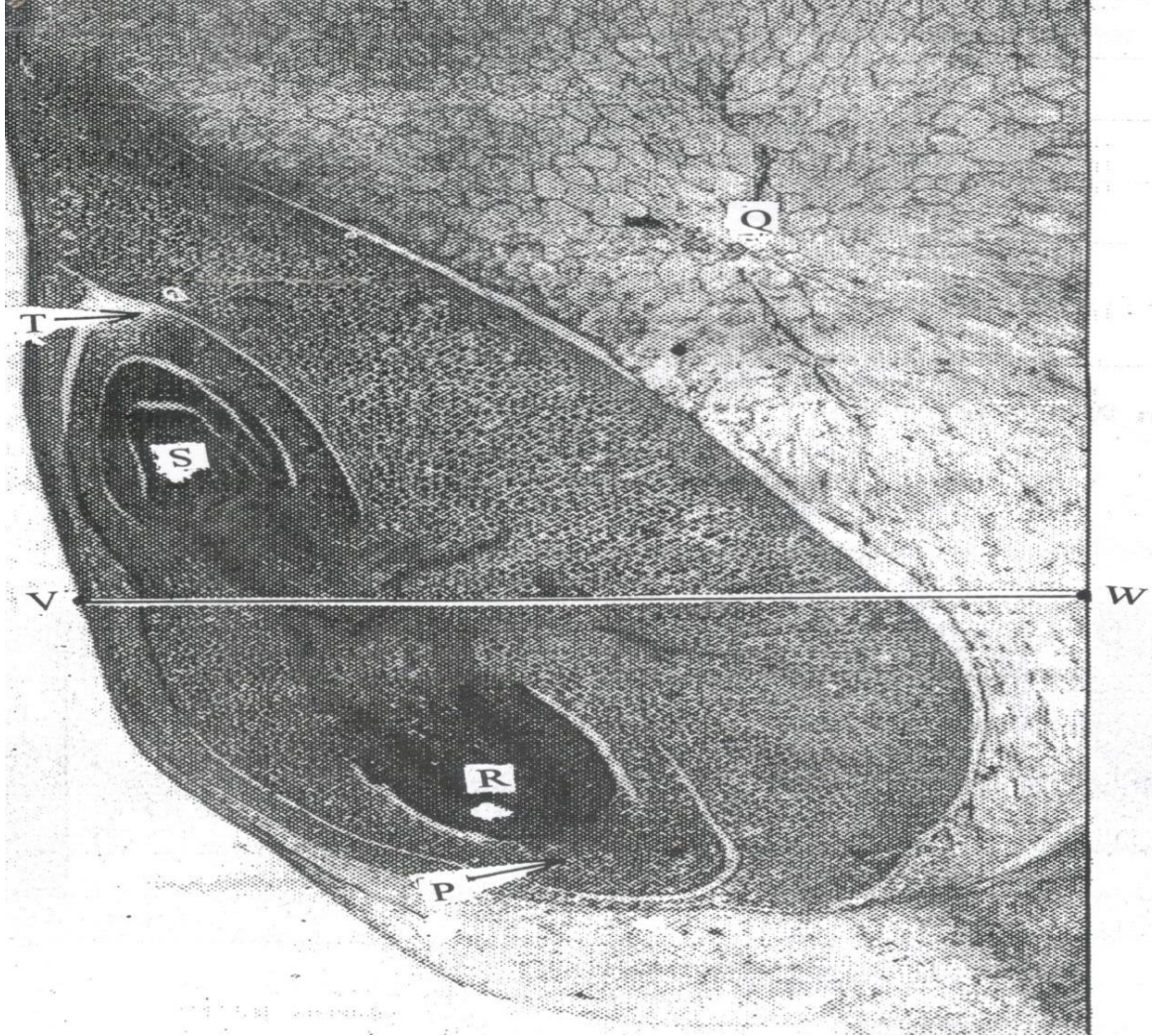
(i) Name the parts labelled P and S. (2marks)

P..

S..

(ii) State the function of the part labelled T. (1mark)

....

(iii) Identify the region that would stain blue black with iodine solution. (1mark)

....

(e) The magnification of the internal longitudinal section in the above photomicrograph was X30,000. Measure the distance of the dark horizontal line

between V and W in millimetres. Calculate the actual width of the section between V and W in micrometres. (2marks)

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

3. Below are photographs II and III of the mammalian kidney and skin respectively.
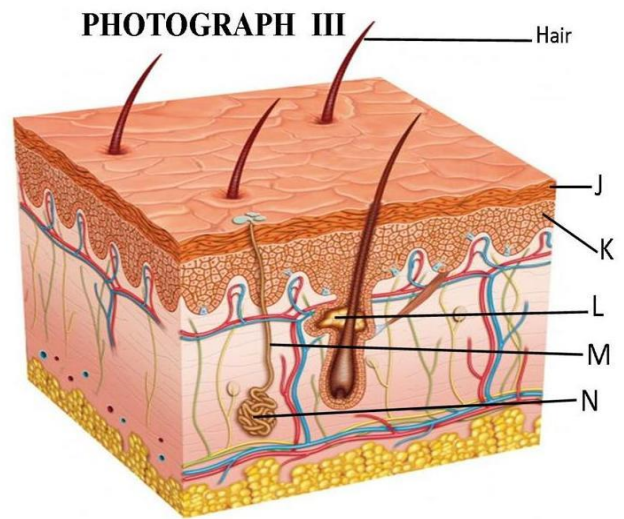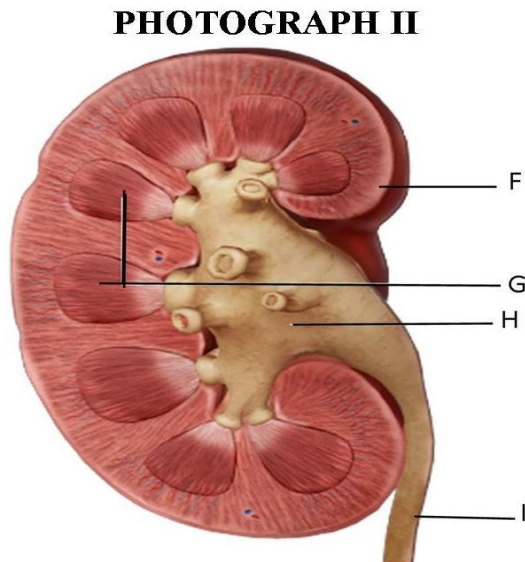
(a) Identify the layers labelled F, J and K. (3marks)

F..

J..

K..

(b) State the function of each of the parts labelled L and M. (2marks)

L ....

M..

(c) Explain how the structure labelled N is adapted to its function. (1mark)

....

....

....

(d) Identify part in photograph II that contains glomeruli.   (1mark)

....

(e) The cells in the layer labelled J can be examined using the light microscope shown below.
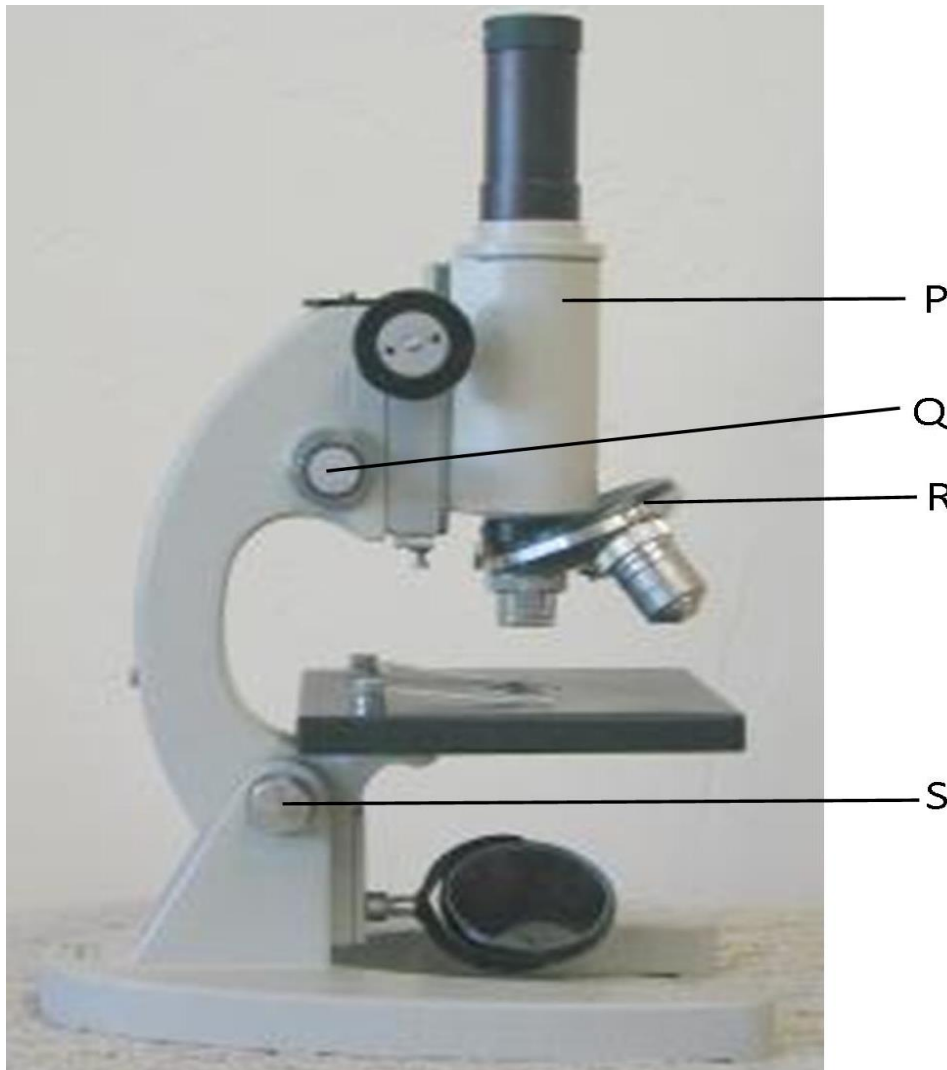
(i) Identify on the above photograph the structure that would be adjusted to improve on the clarity of blurred images of the cells in layer J.   (1mark)

....

(ii) State the significance of using a sharp razor or scalpel to cut through layer J to obtain the cells for examination in the above microscope. (1mark)

....

(iii) Name the part labelled S in the above microscope. (1mark)

....

(iv) State **two** functions of the light microscope during examination of the cells in layer J. (2marks)

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

MID TERM 2 EXAM

BUSINESS STUDIES 565/1

PAPER 1

FORM FOUR (4)

TIME 2½Hrs

Name: ……………………………………………….   **Adm No**: ……………….

School: …………………………………………..   **Class**: …………………..

Signature: ………………………………………..   **Date**: …………………..

Instructions

i)   Answer all questions in the space provided

1. List four reasons why a business exists. (4 Marks)

    i) ………………………………………………………………………………………

    ii) ………………………………………………………………………………………

    iii) ………………………………………………………………………………………

    iv) ………………………………………………………………………………………

2. State four elements that constitute the internal business environment. (4 Marks)

    i) ………………………………………………………………………………………

    ii) ………………………………………………………………………………………

    iii) ………………………………………………………………………………………

    iv) ………………………………………………………………………………………

3. Most firms are adopting electronic filing systems. Mention 4 demerits of using such a system
                                                                            (4 Marks)
    i) ………………………………………………………………………………………

    ii) ………………………………………………………………………………………

    iii) ………………………………………………………………………………………

    iv) ………………………………………………………………………………………

4. Identify the type large scale retailers described by each of the following statements (4Marks)
    i) Huge shopping complexes with many shops under one roof each under a different

       management …………………………………………………………………………..

    ii) Many shops under one roof and one management each selling a particular line of

       products…………………………………………………………………………..

    iii) Businesses where customers make their orders through the post

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

    iv) Shops operated by one company and located in different areas where they sell

       specialized products …………………………………………………………………..

5. Highlight four circumstances under which a co-operative may be dissolved   (4 Marks)

    i)   …………………………………………………………………………………………

    ii)   …………………………………………………………………………………………

    iii)   …………………………………………………………………………………………

    iv)   …………………………………………………………………………………………

6. Highlight four barriers to effective communication   (4Marks)

    i)   …………………………………………………………………………………………

    ii)   …………………………………………………………………………………………

    iii)   …………………………………………………………………………………………

    iv)   …………………………………………………………………………………………

7. Identify four ways in which the efficiency of a warehouse can be guaranteed   (4 Marks)

    i)   …………………………………………………………………………………………

    ii)   …………………………………………………………………………………………

    iii)   …………………………………………………………………………………………

    iv)   …………………………………………………………………………………………

8. State four circumstances under which an insurance policy may be terminated   (4 Marks)

    i)   …………………………………………………………………………………………

    ii)   …………………………………………………………………………………………

    iii)   …………………………………………………………………………………………

    iv)   …………………………………………………………………………………………

9. Highlight four factors that may cause the supply curve to shift to the right   (4 Marks)

    i)   …………………………………………………………………………………………

    ii)   …………………………………………………………………………………………

    iii)   …………………………………………………………………………………………

    iv)   …………………………………………………………………………………………

10. State four measures that Kenya government may take to attract firms to an area.   (4 marks)

i)   …………………………………………………………………………………………

ii)   …………………………………………………………………………………………

iii)   …………………………………………………………………………………………

iv)   …………………………………………………………………………………………

11. The following is a representative basket of an average family.

Year	Prices
2019	6,000
2020	7,200

Determine the increase in C.P.I using 2019 as a base year.   (4 Marks)

12. Highlight four factors which may contribute to business failure   (4 Marks)

i)   …………………………………………………………………………………………

ii)   …………………………………………………………………………………………

iii)   …………………………………………………………………………………………

iv)   …………………………………………………………………………………………

13. Highlight four problems associated with the income approach of measuring the national income   (4 Marks)

i)   …………………………………………………………………………………………

ii)   …………………………………………………………………………………………

iii)   …………………………………………………………………………………………

iv)   …………………………………………………………………………………………

14. Highlight four features associated with a monopoly market structure.   (4 Marks)

i)   …………………………………………………………………………………

ii)   …………………………………………………………………………………

iii)   …………………………………………………………………………………

iv)   …………………………………………………………………………………

15. Outline four roles of transport in the facilitation of trade   (4 Marks)

i)   …………………………………………………………………………………

ii)   …………………………………………………………………………………

iii)   …………………………………………………………………………………

iv)   …………………………………………………………………………………

16. The following balances were extracted from the books of Maua Traders on 31st December, 2020.

	Shs
Fixed assets	300,000
Current assets	123,700
Creditors	84,500
5 year loan	125,000

Determine the net worth of the business as at 31st December 2020   (4 Marks)

17. Highlight three ways in which the introduction of money helped eliminate problems faced in barter trade (3 marks)

i) ………………………………………………………………………………………

ii) ………………………………………………………………………………………

iii) ………………………………………………………………………………………

18. Highlight four forms of economic integration (4 marks)

i) ………………………………………………………………………………………

ii) ………………………………………………………………………………………

iii) ………………………………………………………………………………………

iv) ………………………………………………………………………………………

19. State four measures that the government can use to encourage increase in the country's volume of exports. (4 Marks)

i) ………………………………………………………………………………………

ii) ………………………………………………………………………………………

iii) ………………………………………………………………………………………

iv) ………………………………………………………………………………………

20. Unemployment solving has been an agenda to Kenya. Identify the type of unemployment being solved below. (4 marks)

(i) Government initiating irrigation projects to ensure continuous production of food

……………………………………………………………………………………….

(ii) Retraining teachers to embrace use of technology in teaching and learning

……………………………………………………………………………………….

(iii) Government and private sectors inventing job advertisement sites for easy access by job seekers

……………………………………………………………………………………….

(iv) Parliament passing legislation that accommodate the disabled people to acquire jobs…………………………………………………………………………………

21. The following information relates to Makini Traders for the year ending 31st December 2015.

Margin   15%

Sales   640,000

Purchases   480,000

Stock on 1/1/2015   130,000

Closing stock   ?

Required Trading Account of Makini Traders for the year ending 31st December 2015.

(5Marks)

22. State any four types of advertising that a trader may adopt   (4 Marks)

i)   …………………………………………………………………………………………

ii)   …………………………………………………………………………………………

iii)   …………………………………………………………………………………………

iv)   …………………………………………………………………………………………

23. State any four types of indirect taxes in Kenya   (4 Marks)

 i)   …………………………………………………………………………………………

 ii)   …………………………………………………………………………………………

 iii)   …………………………………………………………………………………………

 iv)   …………………………………………………………………………………………

24. State four problems encountered at the plan implementation stage in economic planning and development   (4 Marks)

 i)   ………………………………………………………………………………………

 ii)   ………………………………………………………………………………………

 iii)   ………………………………………………………………………………………

 iv)   ………………………………………………………………………………………

25. Wanja enterprises had the following assets and liabilities on 5th October 2021.

Item	Kshs
Equipment	800,000
Capital	1,200,000
Creditors	100,000
Debtors	200,000
Stock	250,000
Cash at bank	50,000

The following transactions took place on 7th October 2021.

i)   Bought goods for resale Ksh. 150,000 on credit

ii)   A debtor paid Ksh. 50,000 by cheque

iii)   Sold the equipment for Ksh. 700,000 cash

Required : Prepare Wanja enterprises balance sheet after the above transactions (4 Marks)

MID TERM 2 EXAM
BUSINESS STUDIES 565/2
PAPER 2
FORM FOUR (4)

TIME 2½Hrs

Name: …………………………………………………. **Adm No**: ……………….

School: ………………………………………….. **Class**: …………………..

Signature: ………………………………………….. **Date**: …………………...

INSTRUCTIONS TO CANDIDATES
- This paper consists of six questions

- Answer any FIVE questions

- Write your answers in the answer sheet provided

- All questions carry equal marks

1. a) Labour is an important factor of production. Explain five barriers that may hinder its mobility as a factor of production. (10 marks)

   b) Explain five circumstances under which a high population growth may be desirable to a country. (10 marks)

2. a) Explain five factors that influence the amount of money held by an individual for transactionary motive. (10 marks)

   b) Manufacturers distribute their products to the final consumers through various channels. Explain five factors considered when choosing a particular channel of distribution. (10 marks)

3. a) On 1st June 2008 Happy Traders had cash in hand shs.5000 and cash at Bank shs7500. The following transactions took place during the month.
   June 2:   Bought goods in cash sh750
   June 4:   Paid salaries by cash shs. 3750
   June 5   Received cheques from the following debtors after allowing 2% discount in each case, Kamau sh. 490, Jane sh. 980.
   June 8:   Paid the following accounts by cheque in each case deducting a 5% discount Otieno sh.1,500, Wanjiku sh.600.
   June 12: Bought office machinery by cheque shs.2,500
   June 20: Withdrew cash sh.500 for private use.
   June 25: Cash sales sh.1000
   June 26: Banked cash amounting to sh.500
   June 29: Received shs.1,500 cash from Wanjohi a debtor.

   Required: Prepare a three column cash book duly balanced. (12 marks)

   b) Explain four reasons why the Government imposes tax on its Citizens.   (8 mks)

4. (a) Outline five differences between a parastatal and a co-operative society (10mks)

   (b) The table below shows the age distribution of a country.

Age (year)	%
0-15	45
16-55	31
56 and above	24

   Explain five negative economic implications of this age distribution to a country   (10mks)

5. (a) Describe the procedure that should be followed when taking an insurance policy   (10mks)

(b) Zeraki Investment operates a wholesale business and the following information relates to
    various transactions during the month of May, 2019.

May   3 sold goods on credit to Anyimba sh 60,000
       8 purchased goods on credit from Mjuaji stores sh 120,000
       12 returned goods bought on credit from Mjuaji stores sh 6,000
       16 purchased goods on credit from Mjuaji stores sh 160, 000
       22 sold goods on credit to Mafala retailers sh 150,000
       23 bought a new motor vehicle from Mashariki motors worth sh 3,200,000
          on credit
       24 Anyimba returned goods worth sh 10,000 to the business
       29 sold equipment worth sh 840,000 on credit to Chap Chap limited.

Record these transactions into Zeraki investment books of original entry.   (10mks)

6. a) Motorcycles have become a common feature in transport in Kenya. Outline **five** reasons

    that explain the rapid growth of motorcycle transport in Kenya

                                    (10 mks)

    b) Explain FIVE reasons for the existence of small firms despite competition from large

       scale firms   (10mks)

MID TERM 2 EXAM
CHEMISTRY (233/1)
PAPER 1
FORM FOUR (4)
Time: 2 Hours

Name: ………………………………………………… **Adm No**: ……………….

School: …………………………………………….. **Class**: …………………..

Signature: ……………………………………….. **Date**: …………………...

Instructions to candidates

(a)   Write your name, stream, and admission number in the spaces provided above.
(b)   Answer **ALL** the questions in the spaces provided, and working **MUST** be clearly shown
(c)   This paper consists of **11 printed pages**; Candidates should check the question paper to ascertain that all the pages are printed as indicated, and that no question is missing.

FOR EXAMINERS' USE ONLY

QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 28	**80**	

1. A magnesium ribbon sample was heated in separate volumes of pure oxygen and air.
   a) In which sample was the mass of the product higher? Explain. (2 Marks)

   _____

   _____

   b) Write the equations for the reactions in the sample with air. (2 Marks)

   _____

2. Give the systematic name of the following compound and draw the structure of the polymer it forms: **CH₂CHCl**

   Name   _____(1 Mark)

   Structure   (1 Mark)

   _____

   _____

   _____

3. When aqueous sodium hydroxide solution was added to freshly prepared acidified iron (II) sulphate solution, a green precipitate was formed. When hydrogen peroxide was first added to iron (II) sulphate solution followed by sodium hydroxide solution, a brown precipitate was formed. Explain these observations.
   (3 Marks)

   _____

   _____

   _____

   _____

4. Study the following nuclear reaction and complete it by giving the values of **m** and **n**

$$^{232}_{92}\text{X} \rightarrow \, ^{m}_{n}\text{Y} + 2\,^{0}_{-1}\text{e}^{-} + \,^{4}_{2}\text{He}$$
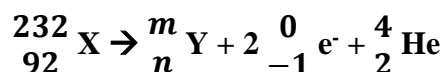
   m _____ (1 Mark)   **n** _____   (1 Mark)

5.
   a) State Charles' Law (1 Mark)

   _____

   _____

   b) A certain mass of carbon (IV) oxide gas occupied 200cm^3 as 25°C and 750mmHg pressure. Calculate the volume occupied by the same mass of gas if pressure is lowered to 300mmHg and the temperature raised to 30°C. (2 Marks)

_____

_____

6. Chlorine gas was bubbled into as solution of hydrogen sulphide as shown in the diagram below.

Chlorine gas →

Boiling tube

Hydrogen
sulphide
solution
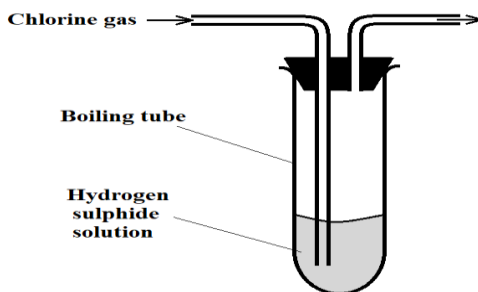
    a) Explain the observation made in the boiling tube   (2 Marks)

_____

_____

    b) What precaution should be taken in this experiment?   (1 Mark)

_____

_____

    c) Distinguish between the bleaching action of chlorine and that of sulphur (IV) oxide.   (1 Mark)

_____

_____

7. Concentrated sulphuric (VI) acid was left exposed in air for a few days. It was found that the level of the acid had risen.

    a) Why did the level of the acid in the container rise?   (1 Mark)

_____

_____

    b) How is this property useful in the laboratory?   (1 Mark)

_____

_____

8. The setup below can be used to dry and collect ammonia gas. Use it to answer the questions that follow.
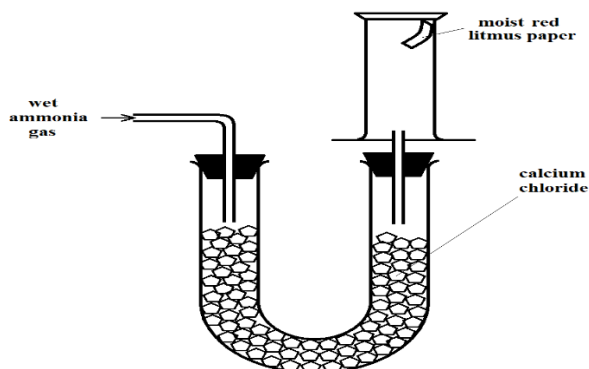
a) The wet red litmus paper remained red. Explain. (1 Mark)

_____

_____

b) Name the method used when collecting ammonia gas. (1 Mark)

_____

9. 400cm^3 of **gas D** diffuses from a porous plug in 50 seconds while 600cm^3 of oxygen gas diffuses from the same apparatus in 30 seconds. Calculate the relative molecular mass of **gas D**. (3 Marks)

_____

_____

_____

10. Use the information in the table below on solubility to answer the questions that follow.

Salt	Solubility at	
	70°C	35°C
CuSO$_4$	38	28
Pb(NO$_3$)$_2$	78	79

A mixture containing 38g copper (II) sulphate and 78g of lead (II) nitrate in 100g of water at 70°C is cooled to 35°C.

a) Which of the two salts will crystallize? (1 Mark)

_____

b) Calculate the mass of crystals formed. (1 Mark)

_____

_____

c) State the salt that will be unsaturated at 35°C (1 Mark)

_____

d) How much of the salt in **c)** above would be required to make a saturated solution at 35°C? (1 Mark)

_____

_____

11. Methane burns in oxygen as shown by the equation below.

$$CH_4 (g) + 2O_2 (g) \rightarrow CO_2 (g) + 2H_2O (g)$$
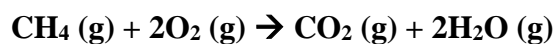
Given the following bond energies:

Bond	Bond Energy (kJ/mole)
C – H	413
O = O	497
C = O	740
O – H	463

a) Calculate the heat change for the reaction. (2 Marks)

_____

_____

_____

b) Define molar heat of combustion. (1 Mark)

_____

_____

_____

12. Given solid sodium carbonate, lead (II) nitrate crystals and water, explain how you can obtain a solid sample of lead (II) carbonate. (3 Marks)

_____

_____

_____

_____

_____

13. Calculate the volume of oxygen produced when 10g of silver nitrate was completely decomposed by heating at s.t.p. (Ag = 108, N = 14, O = 16, MGV at s.t.p. = 22.4dm³)   (3 Marks)

_____

_____

_____

_____

14. A solution of hydrogen chloride gas in water conducts an electrical current, while that of hydrogen chloride in methylbenzene does not conduct. Explain.
     (2 Marks)

_____

_____

_____

15. The scheme below shows some reactions, starting with ethyne. Study it and answer the questions that follow.
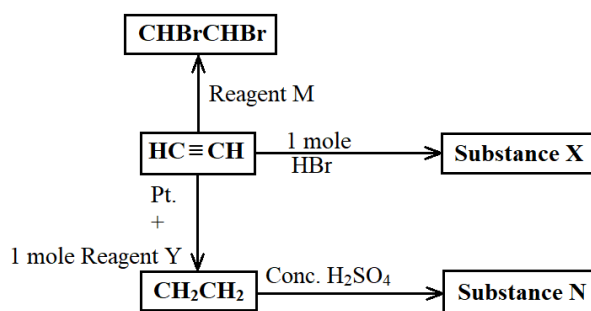
a) Name substance
   i) **X** _____ (½ Mark)

   ii) **N** _____ (½ Mark)

   iii) **M** _____ (½ Mark)

b) Ethene undergoes polymerization to form a polymer. Give an equation for the reaction and name the product. (1½ Marks)

_____

_____

16. When 16g of ammonium nitrate was dissolved in 100cm^3 of water at 25°C, the temperature of the solution drops to 19°C.

a) Calculate the molar enthalpy of solution of ammonium nitrate (3 Marks)

(N = 14, O = 16, H = 1, Specific Heat Capacity for Water = 4.2kJ/kg/k)

_____

_____

_____

_____

b) Is the enthalpy change endothermic or exothermic? Give a reason (1 Mark)

_____

_____

_____

17. The curves below represent the volume of carbon (IV) oxide gas evolved when 2M hydrochloric acid was reacted with 100g of powdered calcium carbonate and when 1M hydrochloric acid was reacted with the same quantity of calcium carbonate.
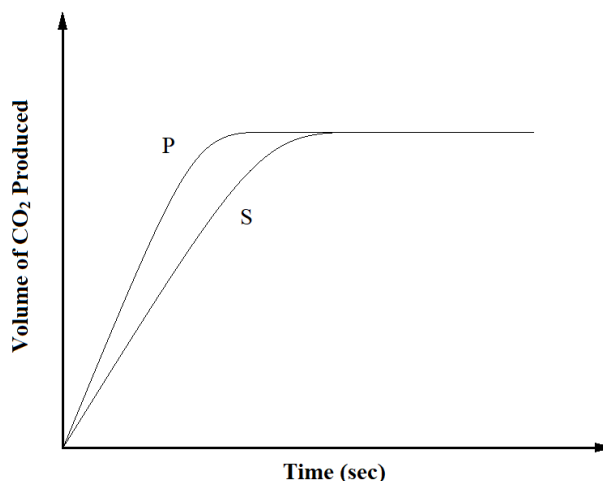
a) Which of the two curves represents the reaction of 2M concentrated hydrochloric acid? Explain. (2 Marks)

_____

_____

_____

b) Why do the two curves flatten at the same level of production of CO_2? (1 Mark)

_____

_____

18. The electron arrangement of ions X^{3+} and Y^{2-} are **2.8**, and **2.8.8** respectively.

    a) In which groups do **X** and **Y** belong? (1 Mark)

       X_____   **Y**_____

    b) State the formula of the compound that would be formed between **X** and **Y** (1 Mark)

_____

19.

    a) State **two** ores from which sodium metal can be extracted. (1 Mark)

_____

_____

    b) During the extraction, calcium chloride solid is added into the sodium chloride solid. Why is calcium chloride added to the sodium chloride? (1 Mark)

_____

_____

    c) State **two** uses of sodium metal. (2 Marks)

_____

_____

20. Using and energy cycle diagram, calculate the enthalpy change of formation of carbon disulphide, given: (3 Marks)

    S (s) + O₂ (g) → SO₂ (g)   ΔH = -294kJ/mole

    CS₂ (g) + 3O₂ (g) → CO₂ (g) + 2SO₂ (g)   ΔH = - 1072kj/mole

    C (s) + O₂ (g) → CO₂ (g)   ΔH = -393kJ/mole

_____

_____

_____
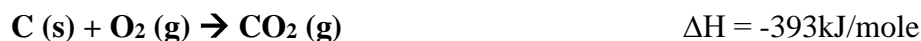
21. The table below shows tests carried out in a sample of water and the results obtained.

Sample	Results	observations
A	Addition of sodium hydroxide dropwise until excess	Whit precipitate which dissolves in excess
B	Addition of excess ammonia solution	White precipitate
C	Addition of dilute nitric (V) acid followed by barium chloride	White precipitate

  a) Identify the **anion** present in the water sample   (1 Mark)

_____

  b) Write an ionic equation for the reaction in **C**   (1 Mark)

_____

22. Use the following information to answer the questions that follow:

   $Sn^{2+} (aq) + 2e^- \rightarrow Sn (s)$ $E^\theta = -0.14V$

   $Cu^{2+} (aq) + 2e^- \rightarrow Cu (s)$ $E^\theta = +0.34V$

  a) Write the cell representation for the cell made up of the two half cells   (1 Mark)

_____

  b) Identify the reducing species   (1 Mark)

_____

  c) Calculate the E^θ value for the cell   (1 Mark)

_____

_____

23. The following is a reaction of an equilibrium mixture:

$$2SO_2 \text{ (g)} + O_2 \text{ (g)} \rightleftharpoons 2SO_3 \text{ (g)}$$
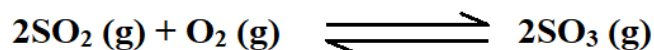
The percentage of sulphur (VI) oxide in the equilibrium mixture varies with temperature as illustrated in the sketch graph below
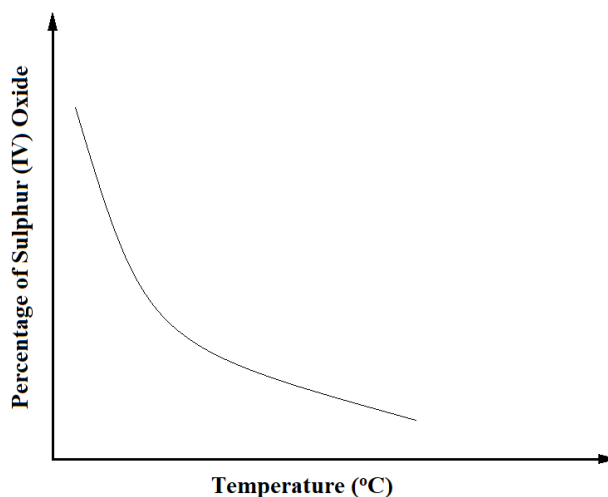
a) How does the percentage of sulphur (VI) oxide in the equilibrium mixture vary as the temperature increases? Explain. (1½ Mark)

_____

_____

_____

b) Is the forward reaction in the equilibrium exothermic or endothermic? Give a reason for your answer. (1½ Mark)

_____

_____

24. Radioactive polonium (Po) with a mass number of 212 and atomic number of 84 was detected in a sample of water. The water had an activity of 1000 counts per second.
a) If the water is boiled, explain whether the activity would be affected or not. (1 Mark)

_____

_____

b) Given that polonium resulted from bitumen (B) following emission of a beta (β) particle, write a nuclear equation for the decay.
(1 Mark)

_____

c) State **one** medical application of radioactivity. (1 Mark)

_____

25. Name and give the formula of:
   a) The **chief ore** from which zinc is extracted (1 Mark)

_____

   b) The **main impurity** in the ore. (1 Mark)

_____

   c) The ore is concentrated by froth floatation. What is froth floatation? (1 Mark)

_____

_____

26. The atomic number of sulphur is 16. Write the electron arrangement of sulphur in the following compounds
   a) H_2S _____ (1 Mark)
   b) SO_3^{2-} _____(1 Mark)

27. For the reaction: $Cl_2 (g) + 2I^- (aq) \rightarrow 2Cl^- (aq) + I_2 (s)$

Using oxidation numbers, state and explain the reducing species. (2 Marks)

_____

_____

28. The setup below was used to investigate the effect of carbon (II) oxide on zinc oxide.
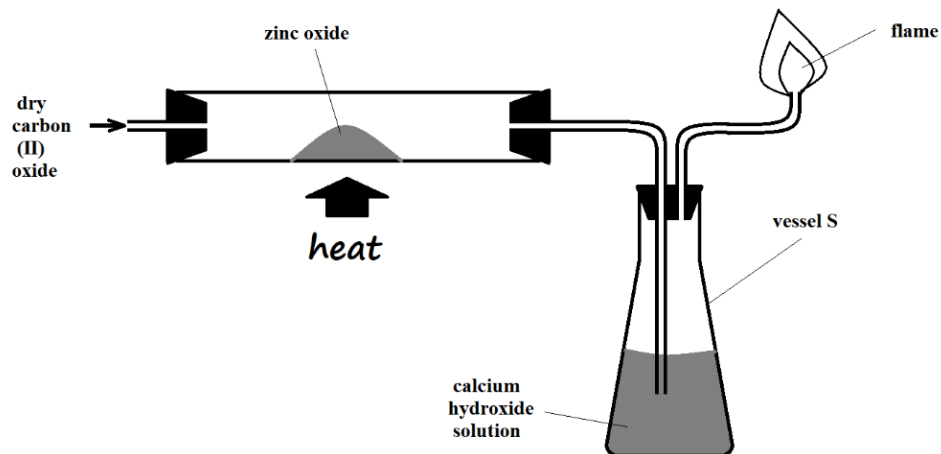
a) State the observations made on the setup.   (2 Marks)

_____

_____

b) Write equations for the reactions that took place.   (2 Marks)

_____

_____

MID TERM 2 EXAM
CHEMISTRY (233/2)
PAPER 2
FORM FOUR (4)
Time: 2 Hours

Name: …………………………………………………. **Adm No**: ……………….

School: ………………………………………………….. **Class**: …………………..

Signature: ……………………………………………….. **Date**: …………………...

Instructions to candidates

(a)   Write your name, stream, and admission number in the spaces provided above.
(b)   Answer **ALL** the questions in the spaces provided, and working **MUST** be clearly shown
(c)   This paper consists of **11 printed pages**; Candidates should check the question paper to ascertain that all the pages are printed as indicated, and that no question is missing.

FOR EXAMINERS' USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1 – 6	**80**	

1.

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

C					F	G		I		
							H		K	
D	E									
								J		

i) Identify the most reactive non-metal. Explain (2 Marks)

_____

_____

_____

ii) What is the name given to the family of elements to which **I** and **J** belong? (1 Mark)

_____

iii) Using dots (•) and crosses (×) to represent electrons, show bonding in the compound formed between **C** and **H**. (2 Marks)

iv) How does the atomic radius of **F** compare with that of **I**? Explain. (2 Marks)

_____

_____

_____

b) Study the table below and answer the questions that follow.

Substance	M	N	O	P	Q	R
Melting Point (^oC)	801	1356	-101	26	-39	113
Boiling Point (^oC)	1410	2850	-36	154	457	445
Electrical conductivity in solid state	Poor	Poor	Poor	Poor	Good	Poor
Electrical conductivity in molten state	Good	Poor	Poor	Poor	Good	Poor

Explain why **substance M** is a good conductor of electricity in the molten state but not in the solid state.
(2 Marks)

_____

_____

_____

i) What is the most likely structure and bond in **substance N**? Explain. (2 Marks)

Structure _____ Bond _____

_____

_____

ii) Identify, with a reason, a substance that exists as a liquid at room temperature. (2 Marks)

_____

_____

_____

2.

a)

i) What name is given to different forms of an element which exist in the same physical state?
(1 Mark)

_____

ii) Name **two** crystalline forms of carbon (1 Mark)

_____   _____

b) The figure below is part of a setup used to prepare and collect dry carbon (II) oxide from carbon (IV) oxide.
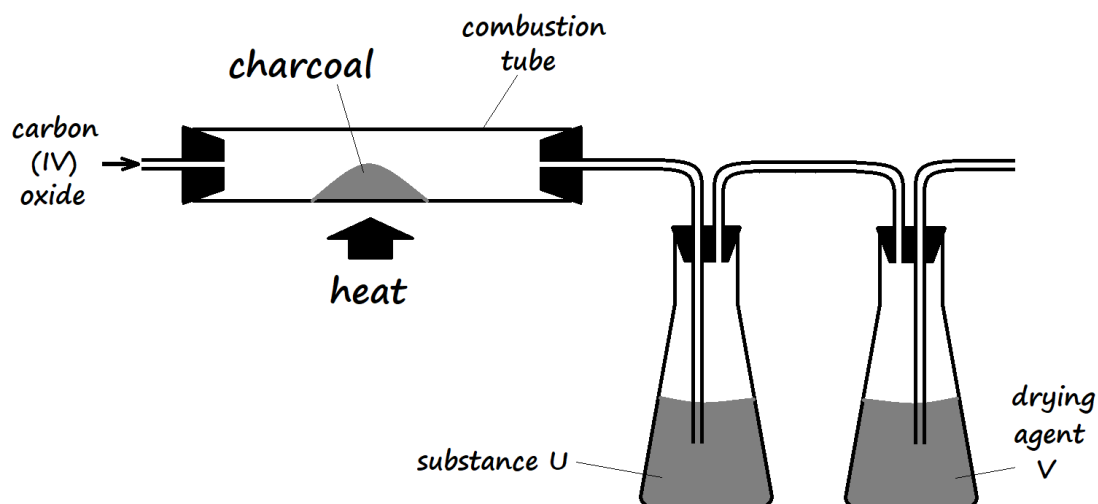
i) Complete the diagram to show how dry carbon (II) oxide gas is collected. (1 Mark)

ii) Identify:
- Substance **U** and state its use

_____

_____

- Drying agent **Y**

_____

iii) Write a chemical equation for the reaction which takes place in the combustion tube
(1 Mark)

_____

iv) Carbon (II) oxide is a major environmental pollutant.
- Give **one** major source of carbon (II) oxide in the atmosphere (1 Mark)

_____

- Explain how carbon (II) oxide causes poisoning (1 Mark)

_____

_____

c) State **one** use of carbon (II) oxide (1 Mark)

_____

d) Write an equation for the formation of water gas. (1 Mark)

_____

e) Explain why sodium hydroxide solution is not used in testing for carbon (IV) oxide gas, while calcium hydroxide is preferably used. (2 Marks)

_____

_____

_____

3.

a) Study the following energy cycle diagram and then answer the questions that follow.

$$\text{C (graphite)} + \tfrac{1}{2} O_2 (g) \xrightarrow{\Delta H_2} CO (g)$$

$\Delta H_1 \quad + \tfrac{1}{2} O_2 (g)$

$\Delta H_3 \quad + \tfrac{1}{2} O_2 (g)$

$CO_2 (g)$
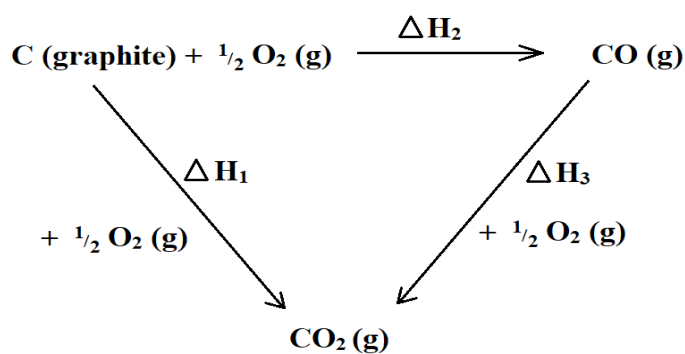
i) Name the enthalpy change represented by ΔH_2. (1 Mark)

_____

ii) Use the following information to calculate the value of ΔH_1 for 144g of graphite. (2 Marks)

$$\Delta H_2 = \text{-110 kJ/mole} \quad \Delta H_3 = \text{-283kJ/mole}$$

_____

_____

_____

_____

b) The following are thermochemical equations for molar enthalpies of combustion for some substances. Study them and answer the questions that follow.

$$C_4H_{10} (g) + \tfrac{13}{2}O_2 (g) \rightarrow 4CO_2 (g) + 5H_2O \qquad \Delta H^\theta_c = \text{-2877kJ/mole}$$

$$C (s) + O_2 (g) \rightarrow CO_2 (g) \qquad \Delta H^\theta_c = \text{-399kJ/mole}$$
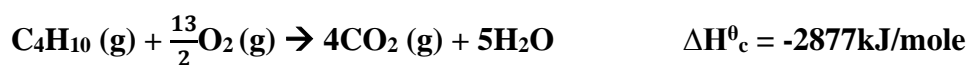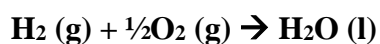
$$H_2 \ (g) + \tfrac{1}{2}O_2 \ (g) \rightarrow H_2O \ (l) \qquad \Delta H^{\theta}{}_c = -286kJ/mole$$

i) What is molar enthalpy of combustion of a substance? (1 Mark)

_____

_____

ii) Calculate the molar enthalpy of formation of butane (C_4H_{10}) using the information given above. (3 Marks)

_____

_____

_____

c) The following results were obtained in an experiment, to determine the heat of neutralization of $25cm^3$ of 2M sodium hydroxide solution, using $25cm^3$ of hydrochloric acid:

Initial temperature of acid = 25.0^oC

Initial temperature of alkali = 26.0^oC

Final temperature of mixture of acid + alkali = 38.5^oC

Density of solution = $1g/cm^3$

Specific heat capacity of solution = $4.2 \ J/g/K$

i) Define molar heat of neutralization (1 Mark)

_____

_____

ii) Write an **ionic equation** for the neutralization reaction involving hydrochloric acid and sodium hydroxide solution. (1 Mark)

_____

iii) Calculate:
- The enthalpy change during this experiment. (2 Marks)

_____

_____

_____

_____

- The molar enthalpy of neutralization for this reaction (2 Marks)

_____

_____

_____

_____

4.

    a) Below is a simplified diagram of the Down's Cell, used for the manufacture of sodium. Study it and answer the questions that follow.
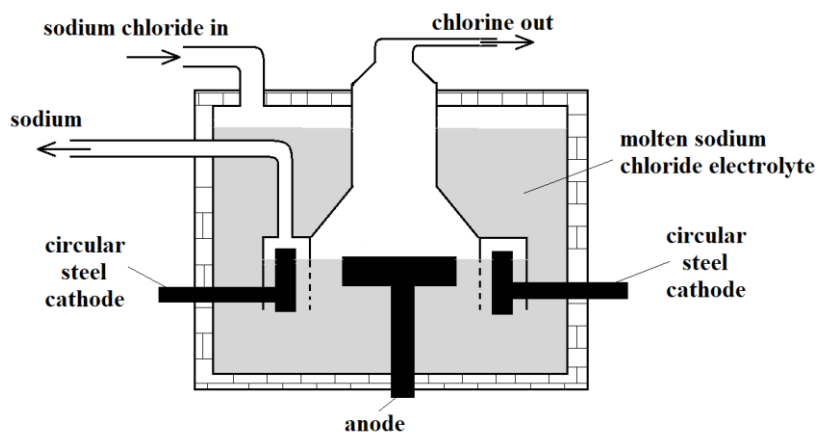
    i) What material is the anode made of? Give the reason why that material is used. (2 Marks)

_____

_____

    ii) What precaution is taken to prevent chlorine and sodium from re-combining? (1 Mark)

_____

_____

    iii) Write an ionic equation for the reaction in which chlorine gas is formed (1 Mark)

_____

    b) In the Downs process, (used for manufacture of sodium), a certain salt is added to lower the melting point of sodium chloride from about 800ºC to about 600ºC.

      i) Name the salt that is added. (1 Mark)

ii) State why it is necessary to lower the temperature in **b)** above (1 Mark)

_____

_____

c) Explain why aqueous sodium chloride is not suitable as an electrolyte for the manufacture of sodium in the Down's Process. (2 Marks)

_____

_____

d) Sodium metal reacts with air to form two oxides. Give the formulae of the two oxides (1 Mark)

_____   _____

e) State **two** uses of sodium (2 Marks)

_____

_____

_____

5.

a) The diagram below shows part of the Frasch process, used for the extraction of sulphur. Use it to answer the questions that follow.
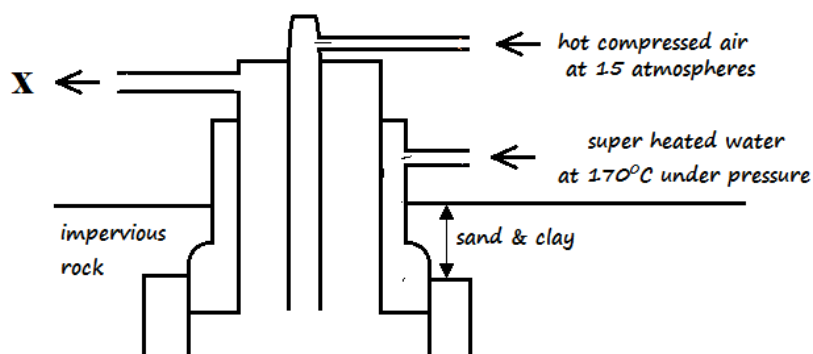
i) Identify **X** _____(1 Mark)

ii) Why is it necessary to use superheated water and hot compressed air in this process? (2 Marks)

_____

_____

_____

iii) State **two** physical properties of sulphur that makes it possible for it to be extracted by this method. (2 Marks)

_____

_____

b) The diagram below shows part of the process in the manufacture of sulphuric (VI) acid. Study it and use it to answer the questions that follow.
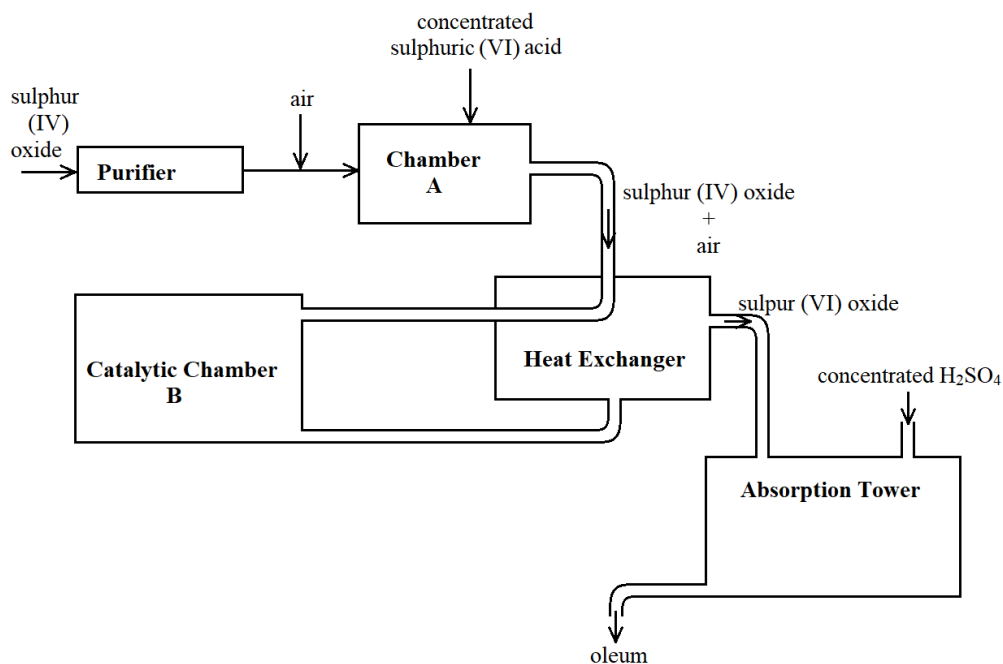
i) Give **two** reasons why air is referred to as a mixture (2 Marks)

_____

_____

ii) What is the role of concentrated sulphuric (VI) acid in **Chamber A**? (1 Mark)

_____

_____

iii) Name **two** catalysts that can be used in the Catalytic **Chamber B**. (2 Marks)

_____

iv) State **two** roles of the heat exchanger (2 Marks)

_____

_____

v) Describe the test for sulphite anion, SO_3^{2-} (2 Marks)

_____

_____

_____

vi) Explain the observation made when a few drops of concentrated sulphuric (VI) acid are added to crystals of hydrated copper (II) sulphate. Explain your answer. (2 Marks)

_____

_____

_____

6. Study the reaction scheme below and answer the questions the follow:
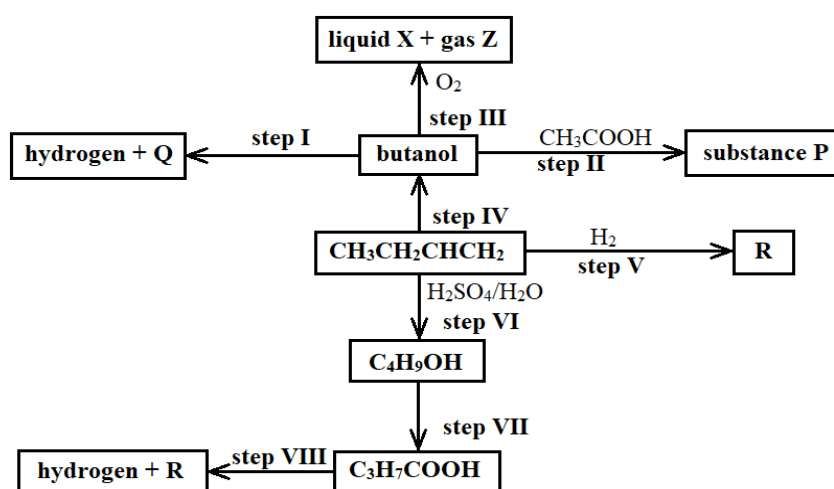
i) What is the distinguishing physical property of **Substance P**? (1 Mark)

_____

_____

ii) Identify a suitable reagent that can be used in **Step I**. (1 Mark)

_____

iii) Describe a chemical test on how C_3H_7COOH can be distinguished from C_4H_9OH. (2 Marks)

_____

_____

_____

iv) Write an equation for the reaction that takes place in **Step III**   (1 Mark)

_____

v) Name the types of reaction that occur in steps **II**, **III**, **V**, and **VII**   (2 Marks)

   II _____   **III** _____

   V _____   **VII** _____

vi) If 7.4g of butanol completely underwent Step III, determine the volume of gas Z produced at s.t.p. (MGV = 22.4 litres, C = 12, H = 1, O = 16)   (3 Marks)

_____

_____

_____

_____

vii) Write an equation for the reaction between **R** and one mole of fluorine gas   (1 Mark)

_____

viii) Describe a chemical test for **liquid X**   (2 Marks)

_____

_____

_____

MID TERM 2 EXAM
CHEMISTRY (233/3)
PAPER 3
FORM FOUR (4)
Time: 2¼ Hours
CONFIDENTIAL REPORT

CONFIDENTIAL

INSTRUCTIONS.

Apart from the normal fittings in the laboratory, each candidate will need the following chemicals and apparatus.

1. **500ml of distilled water supplied in a wash bottle**

2. **50ml burette**

3. **25ml**

4. **a pipette filler**

5. **2 conical flasks (250ml)**

6. **Source of heat (means of heating)**

7. **Stop watch/clock**

8. **A ruler**

9. **100ml measuring cylinder**

10. **50ml measuring cylinder**

11. **Complete retort stand**

12. **12cm long magnesium ribbon labelled C**

13. **100ml of solution A (sulphuric acid)**

14. **80ml of solution B (Sodium hydroxide soltn.)**

15. **100ml empty beaker**

16. **Funnel**

17. **Sand paper**

18. **3g of solid E**

19. **1g of solid F**

20. **Means of labeling**

21. **Six clean test tubes in a test tube rack**

22. **3 boiling tubes in a rack**

23.   *Metallic spatula*

24.   *About 0.2g of sodium hydrogen carbonate*

25.   *Glass rod.*

Access

1. *2M Ammonia solution supplied with a dropper*

2. *2M Sodium hydroxide solution supplied with a dropper*

3. *2M Lead (II) Nitrate supplied with a dropper*

4. *0.2M Silver Nitrate solution supplied with a dropper*

5. *Acidified potassium dichromate (VI) supplied with a dropper*

6. *Acidified Potassium Manganate (VII) supplied with dropper*

N/B

1. *Solution A is prepared by accurately measuring 27.5cm^3 of concentrated Sulphuric acid, then adding it to 700ml of distilled water then topping it to one litre.*

    Density of acid 1.84g/cm^3

2. *Solution B is prepared by accurately measuring 20g of NaOH pellets and dissolving*

    it in 800cm^3 of distilled water then topping to one litre with distilled water.

3. *Solid E – sodium chloride*

4. *Solid F – maleic acid*

MID TERM 2 EXAM
CHEMISTRY (233/3)
PAPER 3
FORM FOUR (4)
Time: 2¼ Hours

Name: ………………………………………………… **Adm No**: ……………….

School: ……………………………………………….. **Class**: …………………..

Signature: ……………………………………………….. **Date**: …………………...

Instruction to Candidates:
a) *Write your name and class in the spaces provided on this page above*
b) *Sign and write the date of examination in the spaces on this page above.*
c) *Answer ALL the questions in the spaces provided after EACH question in the question-paper.*
d) *You are NOT allowed to start working with the apparatus for the first 15minutes of the 2¼ hours allowed for this paper. This time is to enable you read the question-paper and make sure you have ALL the chemicals and apparatus that you may need.*
e) *Mathematical tables and silent electronic calculator may be used.*
f) *ALL working MUST be clearly shown where necessary.*
g) *This paper consists of 9 printed pages.*
h) *Candidates should check the question-paper to ascertain that ALL the pages are printed as indicated and that no questions are missing.*

Questions	Maximum Score	Candidate's Score
1	25	
2	15	
Total Score	40	

QUESTION 1.

You are provided with:

- Sulphuric acid solution A
- 0.5M sodium hydroxide solution B
- Magnessium ribbon labelled C

You are required to:-

- Investigate the rate of reaction between solution A and metal C
- Determine the concentration of sulphuric acid in moles per litre

Procedure I

(i) Using a ruler, make 6 marks at 2cm length interval on the Magnesium ribbon provided. Cut the magnesium ribbon into 2 cm long pieces.

(ii) Transfer 50cm^3 of acid solution using a measuring cylinder into a clean dry 100ml beaker. Place 2cm length piece of magnesium ribbon into the beaker with the acid and immediately start the stop watch/clock. Shake gently and note the time taken for the piece of magnesium ribbon to react completely.

(iii) Record in table I below. Place another piece of magnesium ribbon (2cm) to the same solution and again note the time taken.

(iv) Repeat the procedure until all six pieces of magnesium ribbon have reacted with the same solution initially placed in the beaker

(v) Complete the table I below:

Note: Keep the solution obtained in this experiment for use in procedure II

(a) Table I

Piece of magnesium added	1	2	3	4	5	6
Length of magnesium added (cm)	2	4	6	8	10	12
Time taken t(second)						
Reciprocal of time $^1/_t$ $^{(s-1)}$						

(4 marks)

(b) (i) On the grid provided, plot a graph of total length of magnesium ribbon added against reciprocal of time ($^1/_t$) for the reaction to go to completion. (3 marks)
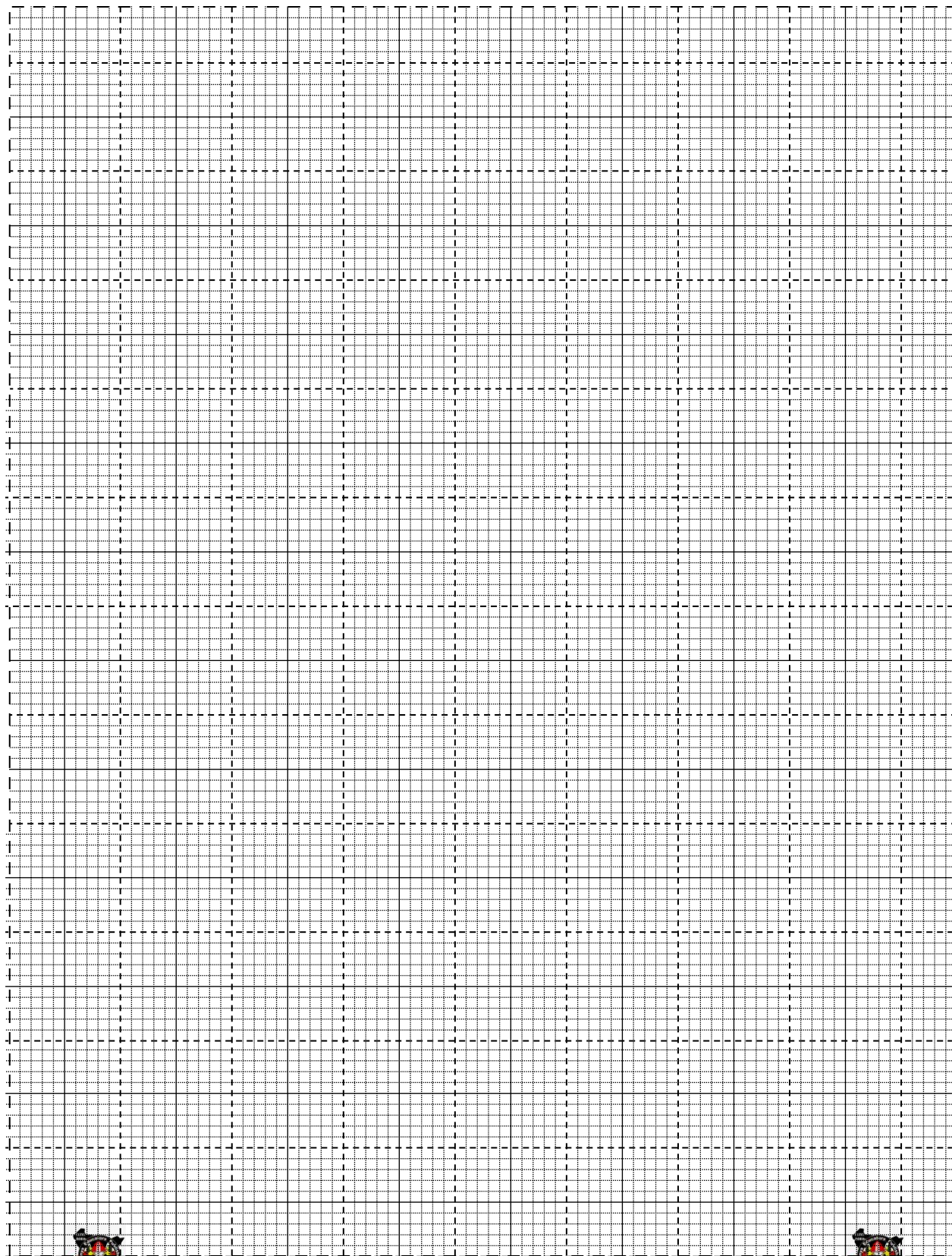
(ii) From your graph, determine the time taken when 4.5cm length of magnesium ribbon
    to react completely.   (1 mark)

………………………………………………………………………………………………

………………………………………………………………………………………………

(iii) Write a chemical equation for the reaction between magnesium and sulphuric acid.

                                                                            (1 mark)

………………………………………………………………………………………………

………………………………………………………………………………………………

(iv) Given that the mass of solid V, which reacted was 0.12g and that atomic mass of
     magnesium is 24.0g, determine the number of moles of sulphuric (VI) acid that were used
     up during the reaction.   (1 mark)

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

(v) From your graph, state and explain the relationship between the length of magnesium
    ribbon and the reciprocal of time ($^1/_t$)   (1 mark)

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

………………………………………………………………………………………………

<u>Procedure II</u>

Place all the solution obtained in procedure I in a clean 100ml measuring cylinder. Add distilled water to make $100cm^3$ of solution. Transfer all the solution into a beaker and shake well. Label it solution D. Fill the burette with solution B. Pipette $25.0cm^3$ of solution D into a conical flask. Add 2-3drops of phenolphthalein indicator and titrate with solution. Record your results in the table II below. Repeat the titration two more times

Table II

Titration	I	II	III
Final burette reading (cm^3)			
Initial burette reading (cm^3)			
Volume of solution B (cm^3) used			

(4 marks)

(c) (i) Determine the average volume of solution B used.   (1 mark)

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

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

(ii) Calculate the number of moles of sodium hydroxide solution B used. (1 mark)

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

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

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

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

(d) Calculate:

(i) The number of moles of sulphuric acid in $25.0cm^3$ of solution D. (1 mark)

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

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

(ii) The number of moles of sulphuric acid in 100cm^3 of solution D. (1 mark)

………………………………………………………………………………………………

……………………………………………………………………………………………….

………………………………………………………………………………………………

……………………………………………………………………………………………….

(e) Determine the total number of moles of sulphuric acid in 50cm^3 of solution A. (1 mark)

………………………………………………………………………………………………

……………………………………………………………………………………………….

(f) Calculate the concentration of the original sulphuric acid solution A in moles per litre.

(1 mark)

………………………………………………………………………………………………

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

………………………………………………………………………………………………

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

QUESTION 2.

You are provided with solid E. Carry out the following tests and write your observations and inferences in the table below:

(a) Place all the solid E in a boiling tube. Add about 15cm^3 of distilled water and shake vigorously for about 2 minutes.

Observations	Inferences
½ mark	1 mark

b) Divide the solution into five equal portions in five different clean test tubes.

(i)   To the first portion, add 2M ammonia solution drop wise until in excess.

Observations	Inferences

1 mark	½ mark

ii) To the second portion add 2M Sodium hydroxide solution dropwise until in excess.

Observations	Inferences
1 mark	1 mark

iii) To the third portion add 4 drops of 2M Lead (II) nitrate solution.

Observations	Inferences
1 mark	1 mark

iv) To the fourth portion, add 4 drops of 0.2M silver nitrate solution.

Observations	Inferences
1 mark	1 mark

(v) Clean one end of the glass rod provided. Dip the clean end of the glass rod in the fifth portion. Remove the end and heat it in the non-luminous part of a Bunsen burner flame. Note the colour of the flame and record below.

Observations	Inferences
1 mark	1 mark

QUESTION 3.

You are provided with solid F. Carry out the tests below. Write your observations and inferences in the spaces provided

(a) Place about a half of solid F on a metallic spatula and burn it using a Bunsen burner flame.

Observations	Inferences
½ mark	½ mark

(b) Place the remaining of solid F in a boiling tube. Add about 10cm3of distilled water and shake the   mixture well.

Observations	Inferences
1 mark	1 mark

(c) Divide the mixture obtained into three portions.

(i) To the first portion, add a small amount of solid sodium hydrogen carbonate.

Observations	Inferences
1 mark	1 mark

(ii) To the second portion, add about $1cm^3$ of acidified potassium dichromate (VI) and warm.

Observations	Inferences
1 mark	1 mark

(iii) To the third portion, add two drops of acidified potassium magnate (VII)

Observations	Inferences

1 mark	1 mark

MID TERM 2 EXAM

COMPUTER STUDIES 451/1

FORM FOUR (4)

PAPER 1

THEORY

TIME 2 ½ Hours

NAME…………………………………………………ADM NO……………………………

SCHOOL…………………..SIGN: ………………………. DATE:…..........

<u>INSTRUCTION TO CANDIDATES</u>

- Write your name and index number in the spaces provided above

- This paper consists of <u>Two</u> sections **A** and **B**

- Answer <u>**ALL**</u> questions in section **A**

- Answer question16 and any other **THREE** questions from section **B**

- All answers should be written in the spaces provided on the question paper

<u>FOR EXAMINER'S USE ONLY</u>

SECTION	QUSTIONS	CANDIDATE'S SCORE
A	1 -15	
B	16	
	17	
	18	
	19	
	20	
	TOTAL SCORE	

SECTION A (40 MARKS)
Answer ALL the questions in SECTION

1. State three functions of the control panel (**3marks**)

_____

_____

_____

_____

_____

2. Use the passage below to answer the questions that follows

ral literature is a broad term that includes: epics, folklore, proverbs, folksongs, oral poetry, jokes, myths, ritual chants, spells, legends, riddles, tongue-twisters, word games, recitations and word games. *Broadly it* refers to any form of verbal art that is transmitted through word of mouth.

Jane Nandwa and Austin Bukenya (1993) describe oral literature as:

"Those utterances whether spoken, recited or sung whose composition ᵃⁿᵈ ~~performance exhibit to an appreciable~~ degree the artistic character of accurate observation, vivid imagination and ingenious expression."

When used in a piece of writing, oral literature in its various genres creates the effect of livening up the story and giving it an identity besides other functions such as capturing the audience's attention and stressing important points. These effects of orature are portrayed vividly in Okot P' Bitek's novel "**White Teeth.**"

(a) Mention three paragraph formatting features used in the passage above (**3marks**)

_____

_____

_____

_____

(b) With an aid of examples describe three text formatting features applied in the above passage (**3marks**)

_____

_____

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3. As regards to communication within computer network, what do you understand by the following terms (**2marks**)

(i) Point –to-Point

_____

_____

_____

(ii) Broadcast

_____

_____

_____

4. Describe three components of video conferencing **(3marks)**

_____

_____

_____

_____

5. With reference to Desktop publishing describe the following terms **(2marks)**
    (i) Gutter

_____

_____

_____

    (ii) Stroke

_____

_____

_____

6. Lindah does not understand why computers are said to be **Automatic** at the same time they have No Intelligent Quotient **(IQ)** **(2marks)**

_____

_____

_____

_____

_____

7. State the difference between private university and public university **(2marks)**

_____

_____

_____

_____

8. Ronaldo a student from Lenana School lives in a house with full internet access. She spends most of her time on phone and Desktop computer. State any three social issues associated with doing this **(3mks)**

_____

_____

_____

_____

9. Mention three factors to consider when choosing a file organization method (3marks)

_____

_____

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_____

10. Give two reasons to justify why many computer users today prefer saving their documents in the google drive (2marks)

_____

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_____

11. Computerization and automation are the great innovations of the 21ˢᵗ century. Describe how introduction of computers in the work place affected the job market (3marks)

_____

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12. Mention three characteristics of human beings that can be used to enable computerized law enforcement systems(3marks)

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13. Use illustrations to explain two ways of implementing FOR loop **(2mks)**

_____

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14. Explain the function of the following as used in data security and control **(2marks)**

   (i) Patches

_____

_____

_____

   (ii) Firewall

_____

_____

_____

15. The office has a fast internet connection for transferring information. However sometimes the internet run slowly. Give two reasons why this could be the case. **(2mks)**

_____

_____

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_____

16.

(a) Describe the following qualities of an algorithm (**2marks**)

(i) Definiteness

_____

_____

_____

(ii) Finiteness

_____

_____

_____

(b) State three differences between Assembly language and Machine language (**3mark**)

_____

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(c) Study the Pseudo code below and use it to answer the question that follows

Start
        Input Initial Deposit
        Input Interest Rate
        Set Deposit to Initial Deposit
        Set Year to Zero
        While Year <=4 Do
        Interest =Deposit * Interest rate
        Total = Deposit +Interest
        Deposit =Total
        Year=Year+1
        Endwhile
         Display Total
    Stop
    (i) Given that the Initial Deposit is 2000 and the Interest rate is 10% get the final total (**4marks**)

(ii) Draw a flowchart for the above algorithm using a Repeat.... Until (**6marks**)

17.

(a) Study the table below and answer the questions that follow

	A	B	C	D	E	F	G
I	Student Name	Math	English	Computer	Total	Average	Grade
2	James Pesa	24	22	52			
3	Maureen Kamau	60	17	71			
4	James Jared	24	41	10			
5	Mary Anna	52	63	81			
6							

(i) Write down the formula that

    (a) Calculate the total marks for Maureen Kamau (**2marks**)

_____

_____

    (b) Calculate the total marks for students with more than 50 and above in Maths (**2marks**)

_____

_____

    (c) Get the mean score for Computer (**2mark**)

_____

_____

(ii) The grading system is a shown in the table below .Write a function that will assign grades as reflected in the table below (**3marks**)

Average	Grade
80 - 90	A
70 - 80	B
60 -70	C
50 - 60	D
0 - 49	E

_____

_____

_____

(iii) Write a formula using named reference that counts the total number of students who have scored more than 50 in computer (**2marks**)

_____

_____

_____

(b) Describe three features that make spreadsheet application suitable for mathematical applications **(3marks)**

_____

_____

_____

_____

(c) A formula = B\$2+\$C2 was typed in cell C2 the copied to cell C3 and the finally to D3. State how the formula will appear in D3 **(1mark)**

_____

_____

_____

18.

    (a) What is the binary equivalent of $24\frac{12}{32}$ base 10 **(3marks)**

_____

_____

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_____

    (b) Convert 5BA2H to Binary **(3marks)**

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(c) Using 8-bits twos complement subtract 19_{10} from 14_{10} **(3marks)**

_____

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(d) Given that the left most digit is a sign bit work out the decimal equivalent of the following binary numbers

(i) 00111010110_2 **(2marks)**

_____

_____

_____

_____

_____

(ii) 10100111010_2 **(2marks)**

_____

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(e) Describe two coding schemes used by computers to represent data in a computer **(2marks)**

_____

_____

_____

_____

19.

(i) Study the tables shown below and use them to answer the questions that follow

Table 1

Admission No	Name	Guardian ID	Date of Birth	Class	Hall	County
0978	Peter Kilulu	P0023	12-12-1999	Form Three	Moi	Kiambu
4678	John James	P0045	07-08-1999	Form Two	Kenyatta	Muranga
6754	Luke Kenya	P0023	06-01-2000	Form One	Uhuru	Migori

Table 2

Guardian ID	Name	Address	Telephone	County
P0023	John Mayi	P.O Box 123 Kisumu	0723567453	Kisumu
P0045	Jerry Watu	P.O. Box 2341 Nairobi	0745897654	Nairobi

(a) Choose the most appropriate key field for Table 1 and 2 (**2marks**)

_____
_____
_____

(b) Identify the most suitable data types Admission No and Date of Birth (**2marks**)

_____
_____
_____

(c) Describe how a relationship can established between Table 1 and 2 (**3marks**)

_____
_____
_____
_____

(d) Write an expression to validate Date of Birth to allow dates that following in the year 1999 only
(**2marks**)

_____
_____
_____

(ii) Peter Kipasi is the system analyst for Finaly group of companies. The Company Management automated their operations to have a competitive advantage over other companied in the same field. Peter received a memo from the CEO requesting him to consider changing the current information system. State what might have necessitated this **(3mark)**

_____

_____

_____

_____

_____

_____

(iii) State three qualities of a good system analyst **(3marks)**

_____

_____

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_____

_____

20.

    (i) Mention four limitations of computer networking **(4marks)**

_____

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_____

_____

_____

(ii) Explain how fibre optic transmit data signal and yet the core can only allow light signals to pass through **(3marks)**

_____

_____

_____

_____

(iii) State the function of the following Communication devices

    (a) Router **(1mark)**

_____
_____
_____
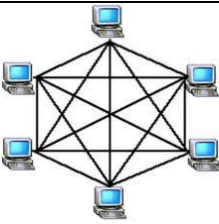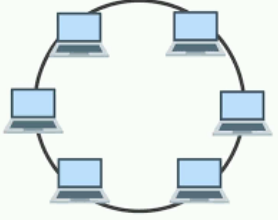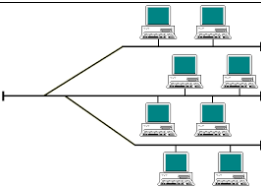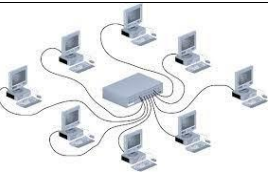
(b) Switch **(1mark)**
_____
_____
_____

(c) Bridge **(1mark)**
_____
_____
_____

(d) NIC **(1mark)**
_____
_____
_____

(iv) Identity the Network topologies represented in the table **(4marks)**

Name:	Name:
Name:	Name:

MID TERM 2 EXAM

COMPUTER STUDIES 451/2

FORM FOUR (4)

PAPER 2

PRACTICAL

TIME 2 ½ Hours.

NAME…………………………………………………ADM NO……………………………

SCHOOL………………….....SIGN: ………………………. DATE:…...........

INSTRUCTIONS TO CANDIDATES

a) Indicate your **name** and **Index number** at the top right hand corner of each print out
b) Write your **Name, and Index Number** on the CD / Removable storage medium provided
c) Write the **name** and the **version** of each S/W used for each question attempted in the answer sheet provided.
d) Answer **all** the questions
e) All questions carry equal marks
f) Passwords **should not be used** while saving in the CD/Removable storage medium
g) All answers **must** be saved in the CD / Removable storage medium
h) Make a printout of answers on the answer sheet provided.
i) Arrange your printouts and tie/staple them together.
j) hand in all the **printout** and the CD/removable storage medium used
k) **This paper consists of 5 printed pages**
l) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing**

1. Jumia sales and marketing company sells products J, K, L. The table below shows an extract of a spreadsheet for the company`s salespersons and their respective sales in shillings for each product.

	A	B	C	D	E	F	G	H
1	SALES PERSON	PRODUCT J	PRODUCT K	PRODUCT L	TOTAL SALES	POINTS	CATEGORY	TOTAL PAY
2	Thomas	4,000.00	6,230.00	7,500.00				
3	Mary	4,500.00	6700.00	8,000.00				
4	Cantona	5,678.00	10,000.00	7,800.00				
5	Janeth	3,200.00	4,000.00	9,600.00				
6	Maxwell	8,000.00	7,005.00	8,900.00				
7	Nambwa	9,800.00	9,670.00	10,000.00				
8	Kedeki	2,700.00	3,400.00	2,300.00				
9	TOTAL							

(a) i) Using a spreadsheet package enter the above information and save it as **SALES_TABLE.** (13 marks)

(b) (i) Type a formula:

I at cell B9 to compute the total sales for product J; (1 mark)

II at cell E2 to compute the total sales for Thomas . (1 mark)

(ii) Apply the formulae to the appropriate cells. (2 mark)

(c) A Salesperson earns points for the sales of each product based on the following criteria;

- 1 point for every shs. 50 for product J,
- 2 points for every shs.65 for product K
- 3 points for every shs.40 for product L

(i) Type a formula in cell F2 to compute the total points earned by Thomas;

(3marks)

(ii) Apply the formula in (c) (i) to the rest of the salespersons. (1 mark)

(d) A salesperson is categorized based on points earned as follows.

POINTS RANGE	CATEGORY
Over 1300	Gold
1101-1300	Silver
Up to 1100	Bronze

Those salespersons attaining a Gold category earn a promotion.

(i) Type a formula in G4 to determine Cantona's category. (4 marks)

(ii) Apply the formula in (d) (i) to other appropriate cells. (2 marks)

(iii) Type a formula at G10 to determine the number of Sales who will earn a promotion (4 marks)

(e) Each salesperson earns a total pay of Shs 20,000 plus 2% commission of their total sales. Using absolute referencing, determine the total pay for each salesperson if the value 2 is entered in cell B12. (5 marks)

(f) Create a bar chart showing product J and L sales person. Insert appropriate labels on the chart. (9 marks)

(g) Rename the worksheet containing the data as **SalesData** and the chart sheet as **SalesChart**. (2 marks)

(h) Print the following: (3 marks)

(i) SalesData;

(ii) SalesData showing the formulae;

(iii) SalesChart.

Question 2

Witu Company is an organization that has employed several workers .In order for it to monitor the performance of its workers and the different duties assigned to its workers, the company needs a database to organize the information required.

(a) Create a database file and name it records 2016 (2mks)

(b) (i)Using the table below create the appropriate fields and split the data into two tables ,one for storing employees records and the other for storing employment records and give them appropriate names (8mks)

EMPLOYEE NO.	NAME	DEPARTMENT	MARITAL STATUS	SALARY	AGE	DEP CODE
2213	JOHN CLAY	TRANSPORT	MARRIED	8,000.00	35	D001
2214	ROSE JOHNS	CUSTOMER CARE	MARRIED	10,000.00	40	D002
2215	PETER ROGERS	HEALTH	MARRIED	50,000.00	45	D003
2216	JED OTIENO	FINANCE	SINGLE	20,000.00	25	D004
2217	VINCENT JED	TRANSPORT	SINGLE	8,000.00	20	D001
2218	ALLAN LIMO	HEALTH	SINGLE	4,000.00	22	D003
2219	PETER OLOO	HEALTH	MARRIED	80,000.00	35	D003
2220	HUSSEIN KIMAN	FINANCE	SINGLE	15,000.00	26	D004
2221	ROBERT KIBANI	FINANCE	SINGLE	5,000.00	28	D004
2222	JANE LESSOS	TRANSPORT	MARRIED	6,000.00	31	D001
2223	LUCY OJWANG	CUSTOMER CARE	MARRIED	8,000.00	30	D002

(ii) Create screens for each table for inputting the data in the table above (12mk)
(iii) For each of the tables, choose the most appropriate primary key (2mks)
(iv) Create a relationship between the two tables (2mks)
(c.) Create a query to display the files Name, Department and Salary for those employees who earn more than 10,000.00.Save as experts (5mks)
(d)
(i) Generate a tabular report with landscape orientation from the table to display the fields in the following order (5mks)
EMPLOYEE NO., NAME, SALARY, DEPARTMENT, AGE
(ii) Sort records in the report in alphabetical of the name field (2mks)

(ii) Compute the total of salary for all the employees   and place it below the salary column. Save as **Expenses**   (5mks)
(iv) Create a query to display Name, Marital Status, Age and the workers years of birth and save it as YOB   (5mks)
(e)Print the two **tables, experts, expenses** and **YOB**   (2mks)

MID TERM 2 EXAM
CHRISTIAN RELIGIOUS EDUCATION (QUESTION PAPER)
FORM FOUR (4)

TIME 2 HOURS
PAPER 1

Name…………………………………………………… Adm No………………………………..
School…………………………………………………. Class……………………………………
Signature…………………………………………….. Date…………………………………….

INSTRUCTIONS TO CANDIDATES:

1) Write your name and index number in the spaces provided above.

2) This paper consists of **SIX** questions.

4) Answer any five questions on the foolscaps provided.

5) Each question carries 20 marks.

For Examiner's Use Only

Questions	1	2	3	4	5	6	TOTAL
Score							

1 a)Explain why the Bible is referred to as the word of God. **(6mks)**

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b)State seven reasons for translating the Bible into local languages   **(7mks)**

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c)Show how the study of CRE has promotes morality in the society   **(8mks)**

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2. a) Describe the call of Moses in Exodus 3:1-22 (8mks)

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b) What precaution were made by the Israelites to celebrate the passover feast ? Exodus 12 :1-3 (7mks)

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c) In what ways does God show mercy to Christians today (5mks)

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3 a) Give reasons why Elijah was forced to escape from Israel. (7mks)

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b) Explain the main features of Canaanite Religion   **(7mks)**

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c)What can Christians learn from the happenings at the Mt. Carmel contest about the, nature of God.   **(6mks)**

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4 a) Give reasons why God called prophets in Israel   **(5mks)**

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b) Describe the Day of the Lord as it was taught by prophet Amos **(Amos 8:7-13)**   **(8mks)**

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c) Identify the roles played by prophets in traditional African Society.   **(7mks)**

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5 a) Give reasons why Jeremiah wrote the letter to the Exiles in Babylon.   **(7mks)**

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b) State the teachings of Jeremiah on judgement and punishment.   **(7 mks)**

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c) What is the relevance of the suffering and lamentation of Jeremiah to Christians?   **(8mks)**

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6 a) How was the problem of sickness solved in traditional African society.   **(7mks)**

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b)Give six moral values expected of initiates in African traditional society   **(6mks)**

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……………………………………Contact Kenya Educators 0768321553/0795491185 for Marking Schemes…………………………
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c) Outline the changing attitude to birth and naming in society today.   **(6mks)**

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MID TERM 2 EXAM

CHRISTIAN RELIGIOUS EDUCATION (QUESTION PAPER)

FORM FOUR (4)

TIME 2 HOURS
PAPER 2

Name……………………………………………………… Adm No………………………………..
School…………………………………………………… Class……………………………………
Signature…………………………………………………Date…………………………………….

INSTRUCTIONS TO CANDIDATES:

1) Write your name and index number in the spaces provided above.

2) This paper consists of **SIX** questions.

4) Answer any five questions on the foolscaps provided.

5) Each question carries 20 marks.

For Examiner's Use Only

Questions	1	2	3	4	5	6	TOTAL
Score							

1 a) With reference to the incident when Jesus was dedicated to God , outline seven revelation of Simeon and Annah about His life.

(7mks)

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  b) List seven Jewish ceremonies in which Jesus was involved.

(7mks)

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  c) State the rituals performed during the birth of a baby in African society.

(6mks)

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2 a) Describe the incident when Jesus was rejected at Nazareth. Lk. 4: 16-30
(7mks)

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b) State the teaching of Jesus on the healing of Gerasene Demoniac
(6mks)

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c) Identify six characteristics of a true follower of Jesus
(6mks)

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3 a) Explain four areas of conflict between Jesus and the Jewish religious leaders in His Jerusalem ministry

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b) State how Judas Iscariot betrayed Jesus.

(6mks)

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 c) Identify six ways in which the church continues with the healing ministry of Jesus

(6mk)

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4 a) Explain what the teachings of Jesus about the Vine and the branches reveal about the unity of believers (John 15: 1-10)

(8mks)

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b) Mention six leadership qualities demonstrated by Peter on the day of Pentecost

(**6mks)**

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c) What role do women play in the church today .

(6mks)

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5 a) Identify six roles of parents in a Christian family

(6mks)

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b) Explain biblical teachings on celibacy as an alternative to marriage.
(**7mks)**

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c) Why are Christians opposed to child labour.

(7mks)

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6 a) Explain how unfair distribution of wealth can lead to social disorder in Kenya today.

(7mks)

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b) Give possible remedies to the problem of ethnicity in Kenya.

(7mks)

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c) State six ways in which Christens can put their wealth in good use

(6mks)

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MID TERM 2 EXAM
ENGLISH (101/1)
PAPER 1
FORM FOUR (4)
Time: 2 hours

Name..Adm. No.................

Date...Sign............................

Instructions to candidates:
a) Write your name, school and index number in the spaces provided.
b) Sign and write the date of exam in the spaces provided.
c) Answer **all** the questions in this paper.
d) All your answers must be written in the spaces provided.

For Examiner's Use Only:

SN	Question	Maximum Score	Candidate's Score
1	Functional Writing	20	
2	Cloze Test	10	
3	Oral Skills	30	
	Total Score	**60**	

This paper consists of 8 printed pages. Check to ascertain that all pages are printed as indicated and that no questions are missing.

1. **FUNCTIONAL WRITING   20MARKS**

a) Imagine you are Mrs. Linde, and you have learnt that Torvald, your friend's husband has been appointed as the manager of a bank. Write a congratulatory note to Torvald (10 marks)

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b) In the above regard, you intend to invite them and prepare your favorite meal. Write a recipe.   (10 marks)

2.CLOZE TEST   10MARKS

2. *Read the passage below and fill in each blank space with the most appropriate word.*

(10 marks)

Curriculum reform in education is a worldwide-practiced phenomenon that is involved in striving for the (i)……………………educational practices, primarily with the demands of the twenty-first-century knowledge economy. African (ii)……………………immediately after independence had to inherit the colonial education system, which (iii)…………………… discriminative and which demanded realignment to societal and cultural demands of the nation. Coincidentally curriculum (iv)………………………. in most African nations adopted the content or knowledge-based approach. Not long, the Knowledge-based curriculum dissatisfied most countries for its products were too academic, but lacking skills and knowledge (v) ………………………. the applicability as required by the demands from the workplace. Kenya and Tanzania adopted a curriculum with the philosophy of education for self-reliance; (vi)……..................... due to the inadequately trained teachers and insufficient resources, it ended up being (vii)…………………. examinable and losing its goal. That (viii)……………………to unemployment, increased vices, and rampant dropouts, among other factors. Currently, due to technological advancement, most countries have opted (ix)………………………. a competency-based curriculum (CBC), which appears as worldwide trends in offering skills that match with the requirements of companies' employers. (x)…………………question shall be: does the job market currently determine the curriculum reforms in education?

3. Oral Skills   30MARKS

A. Read the following poem carefully and answer the questions that follow.

 BALLAD OF THE LANDLORD

Landlord, Landlord
My roof has sprung a leak
Don't you remember I told you about it Way last week ?

      Landlord, Landlord
      These steps is broken down
      When you come up yourself
      It's a wonder you don't fall down

      Ten bucks you say I owe you ?
      Ten bucks you say is due ?
      Well, that's ten bucks more n I'll pay you
      Till you fix this house up new

      What? You gonna get eviction orders
      You gonna cut off my heat ?
      You gonna take my furniture and
      Throw it in the street

      Um-huh! You think high and mighty
      Talk on- till you get through
      You ain't gonna be able to say a word
      If I land my fist on you

Police! Police
Come and get this man
He's trying to ruin the government
And overturn the land!

Copper's whistle
Patrol bell
Arrest
Precinct station
Iron cell
Headlines in press

a) List all the pair of rhyming words.   (3 marks)

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....
....

b) How does the punctuation in the fifth stanza influence your reading of the poem?   (3 marks)

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....

c) How would you say the last two lines in the fourth stanza?   (3 marks)

....

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B.   You have been invited as a guest speaker to give a talk on discipline of students. At the end of the speech the students comment that it was well delivered. Suggest reasons why they commented so.
                                                                                                                                    (6 marks)

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C.   Imagine that one of your classmates has disappeared mysteriously. You decide to report the matter to   the police. What three important details must you include in your oral report. (3 marks)

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

D.   Identify the odd one out from the following groups of words according to the

pronunciation of the underlined words.

(3 marks)

(i)   <u>R</u>espect   <u>r</u>eligion,   <u>r</u>eferee   ………………………………………………….

(ii) Key<u>s</u>   advi<u>s</u>e   book<u>s</u>   ………………………………………………….

(iii) Vi<u>s</u>ual   plea<u>s</u>ure,   pa<u>ss</u>ion   …………………………………………......

E. Jane has been invited by her friend to attend a birthday party at her home. She goes to the father to ask for permission to attend the party. However, her father turns down her request. Identify the possible weaknesses in her negotiation skills that could have contributed to this.

(3 marks)

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F. After you deliver your points during the **debate**, everyone claps for you. How could you have

delivered your points to earn their applause? (2 marks)

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G. You are the Chairperson of a panel that is set to carry out an important interview.

(i) Explain briefly what you would do in preparation for this important occasion. (2 marks)

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(ii) What would you do during the interview to ensure you get enough information to enable you

to make the right decision? (2 marks)

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KENYA CERTIFICATE OF SECONDARY EDUCATION

ENGLISH PAPER 2 FORM 4

MIDTERM 2 SET 2 2023 EXAM

NAME:_____STREAM_____DATE:____

Instructions to candidates

a) *Write your name and admission number in the spaces provided above.*
b) *Sign and write the date of examination in the spaces provided above.*
c) *Answer all the questions in the question paper.*
d) *All your answers must be written in the spaces provided in this question paper.*
e) *Candidates must answer the questions in English.*

For Examiner's use only

Question	Maximum Score	Candidate's Score
1	20	
2	25	
3	20	
4	15	
Total Score	**80**	

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1. COMPREHENSION   (20 marks)

Read the following passage and answer the questions that follow

ACQUIRED HEART DISEASE

People who suffer from acquired heart diseases are usually born with normal hearts but contract the disease later on in life. Different heart diseases are brought about by various factors. For example, rheumatic heart disease is caused by a form of virus infection which may start with a sore throat. This is caused by rheumatic fever which affects many parts of the body such as the joints, skin, brain and the heart.

The most serious and long lasting effects are those of the heart, especially the heart valves, which become damaged. The valves may either become narrow preventing the free forward flow of blood or they may leak, throwing the circulation in **disarray** and inflaming all the three layers of the heart namely, 'Pericardium', 'Myocardium' and 'Endocardium'. The blood valves usually get damaged causing the heart to be inefficient in pumping blood all over the body. This results in heart failure.

Some of the symptoms associated with this disease are swelling of the joints, pain and fever. In most cases, the symptoms disappear on their own but the **toxins** still remain in the blood and once they reach the heart, it becomes infected with the disease. The disease is referred to as the poor man's disease because it normally occurs in overcrowded and unhygienic conditions. It also occurs where there is poor nutrition and inadequate health facilities. It may be cured through operation depending on the seriousness of the disease.

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Another type of the acquired heart disease is the coronary heart disease. This disease causes the narrowing and roughening of the arteries which supply blood to the heart. Lack of enough blood and oxygen causes the heart tissues to die thereby causing a heart attack which is fatal. Cholesterol deposits coat the inside lining of the arteries thereby causing them to narrow. This **emanates** from eating foods like red and fatty meat, eggs and sugar. This disease may on the other hand be hereditary. Doing physical activities helps to reduce the amount of cholesterol in the blood by burning up much of the fat thereby, leaving less coating on the arteries.

This disease can be treated either through the use of drugs or through vein *grafting* where the blocked part of the artery is by-passed. In severe cases, heart-transplant maybe required. In other cases, treatment maybe through either a closed or open heart surgery.

Although cholesterol in the blood is bad for the heart, only when very large quantities are taken is there an increase in blood cholesterol levels. Therefore, eating a few eggs a week or an occasional meal of meat would do no harm. You should think of the amount of fat that your food contains. A low-fat diet will provide you with the necessary calories that the body needs. Eating fatty foods will certainly contribute to your adding on weight which is unhealthy.

Hypertension is another type of acquired heart disease. The disease is normally associated with the socio-economic problems. Victims of hypertension are usually those people who are continually anxious, tense, depressed and worried. The higher the levels of table-salt taken, the higher the risk of getting hypertension. So, consumption of table-salt should be regulated to bare minimum. *Genetic factors* may also contribute to the *contraction* of hypertension.People from a particular family may seem to be more *prone* to the disease than those from another family. Treatment of the disease may be through drugs but *counselling* in some cases may also help.

(Adapted from the Daily Nation)

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Questions

a)   What effect does the rheumatic fever have on the heart valves   **(2 Marks)**

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b)   Why is rheumatic fever called a 'poor man's disease'?   **(2 Marks)**

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c)   In a coronary heart disease, why do the heart tissues die?   **(2 Marks)**

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d)   Why does the author say that hypertension maybe hereditary and may also be caused by

environmental factors. Support your answer   **(3 Marks)**

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e)   In notes form, state what one needs to do to avoid being a victim of heart attack

(4**Marks)**…………………………………………………………………………………………

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f)   What is the other word for hypertension?   **(1 Mark)**

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g)   What are the symptoms associated with rheumatic heart disease   **(2 Marks)**

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h)   Give the meaning of the following words and phrases as used in the passage **(4 Marks)**

i) disarray..

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ii) toxins..

iii) emanates..

iv) genetic factors..

Q2. THE PLAY   A DOLL'S HOUSE BY HENRICK IBSEN   (25 MARKS)
Read the following excerpt and answer the questions that follow.

NORA: What ought I to make an end of?
Mrs Linde: Of two things, I think. Yesterday you talked some nonsense about a rich admire who was to leave you money---
Nora: An admirer who doesn't exist, unfortunately! But what then?
Mrs Linde: Is Doctor Rank **a man of means?**
Nora: Yes, he is.
Mrs Linde: And has no one to provide for?
Nora: No, no one; but----
Mrs Linde: And comes here every day?
Nora: Yes, I told you so.
Mrs Linde: But how can this well-bred man be so tactless?
Nora: I don't understand you at all.
Mrs Linde: Don't **prevaricate**, Nora. Do you suppose I don't guess who lent you the two hundred and fifty pounds?
Nora: Are you out of your senses? How can you think of such a thing? A friend of ours, who comes here everyday! Do you realise what a horribly painful position that would be?
Mrs LInde: Then it really isn't he?
Nora: No, certainly not. It would never have entered into my head for a moment. Besides, he had no money to lend then; he **came into his money** afterwards**.
Mrs Linde: Well, I think that was lucky for you, my dear Nora.
Nora: No, it would never have come into my head to ask Doctor Rank. Although I am quite sure that if I had asked him---
Mrs Linde: But of course you won't.
Nora: Of course not. I have no reason to think it could possibly be necessary. But I am quite sure that if I told Doctor Rank---
Mrs Linde: Behind your husband's back?
Nora: I must make an end of it with the other one, and that will be behind his back too. I must make an end of it with him.
Mrs Linde: Yes, that is what I told you yesterday, but---
Nora: (*walking up and down*) A man can put a thing like that straight much easier than a woman---
Mrs Linde: One's husband, yes.

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Nora: Nonsense! (*standing still)* When you pay off a debt you get your bond back, don't you?
Mrs Linde: Yes, as a matter of course.
Nora: And can tear it into a hundred thousand pieces, and burn it up- the nasty dirty paper!
Mrs Linde: (*looks hard at her, lays down her sewing and gets up slowly*.) Nora, you are **concealing** something from me?   .
Nora: Do I look as if I were?
Mrs Linde: Something has happened to you since yesterday morning. Nora, what is it?

Questions

a) What happens immediately after this extract?   (3mks)

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b) Discuss any two issues brought out in this extract.   (4mks)
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c) How is Mrs Linde depicted in this extract?   (4mks)

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d) In which ways does the playwright use dramatic irony in the extract? (4mks)

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e) Because you do as your husband wishes. (Add a question tag)   (1mk)
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f) How effective is the use of humour in this extract.   (2mks)

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g) Helmer is hardworking. How is this character trait brought out elsewhere in the play and how does it complicate the drama?

(3mks)..

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h) Give the meaning of the following words and phrases as used in the excerpt. (4mks)
i) a man of means

………………………………………………………………………………………

ii) prevaricate……………………………………………………………………………

iii) Came into his money

...…………………………………………………………………………………………

iv) Concealing……………………………………………………………………………

3. ORAL LITERATURE   20 MARKS.

0nce upon a time the Tortoise and Osogo the Bird were great friends. They could visit each other almost every day. Osogo the Bird would go and visit the Tortoise and the Tortoise would escort Osogo the Bird up to his home, and then Osogo the Bird would then escort the Tortoise again up to his home. They would escort each other; escort each other; escort each other till morning.

It so happened that Osogo the Bird was good at singing. He would sing like *asilili,* his voice would blend with virtually everything. So Osogo the Bird was invited to a big feast by some king in a far off place. Osogo the Bird shared his story with his friend the Tortoise for who doesn't know of the rumour that the Tortoise's shell makes a wonderful drum.

It so happened then that at that time there was scarcity in the land and all mouths lacked what to eat. The Tortoise's stomach was so shrunk that it disappeared in his shell.

"Oh, I can escort you my **dundedunde** and you know my shell is a good drum," the tortoise said salivating.

"But you can't fly, I shall be flying to the party with my band members," replied Osogo the Bird.

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Soon the Tortoise had come up with a suggestion. And the birds gave him each a feather and from the feathers which birds gave him, he, the Tortoise **fashioned** some colourful wings.

They set off, happy and excited. They flew, they flew, and as they flew and along the way, the Tortoise told the bird: "Where we are going, we must change our names because that is those people's cultures. So, Osogo the Bird changed his name to Osogo Winyo the Singer. The Dove called himself Akuru Wuon Obondo, the Owl called himself, Tula Nyongoro, Hornbill called himself Arum Tidi. They all changed their names. Finally it was the Tortoise's turn to give his new name. He called himself a strange name: he said he would be called: All Of You. Everybody laughed and they sang him a song;

Opuk rakoti
Yaye opuk rakoti
Yawa opuk rakoti

Wait! They soon reached the place, they were going and those people welcomed them. They settled down and played their music, Osogo the Bird singing his heart out. Then at meal time things changed. When food was brought, the Tortoise who was now salivating asked their host, "Whose food is this?"

The host replied, "It is for all of you." Upon which the Tortoise looked at Osogo the Bird with a knowing smile and settled down for proper eating. He ate all the delicacies that were served and his stomach swelled and filled his shell. Osogo Winyo the bird and the band members watched as the Tortoise ate and had to **gnaw** the bones of the left overs. Soon the bird left for home bitter and hungry.

That is the end of my story.

Question

a) Giving a reason, classify the above narrative? 2mks

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

b) Explain the significance of the following oral devices as used in the above narrative: 3mks

i)Repetition…………………………………………………………………………………
…………………………………………………………………………………………………
………………………………………………………………………..

ii)Use of song
…………………………………………………………………………………………………
…………………………………………………………………………………………………

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iii)Openingformula…………………………………………………………………………

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c) Why does the story use animal characters as opposed to human being? 2mks

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d) Identify and explain any political activity evident in the story. 2mks

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e) What is the moral teaching of this story? 2 mks

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f) Why would we say that the birds were gullible? 2mks

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g) Why do you think Osogo the Bird shared his story with the Tortoise? 2mks

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h) Why did the tortoise look at Osogo the Bird with a knowing smile? 2mks

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i) Explain the meaning of the following words and phrases as used in the passage 3mks

i)Dundedunde

ii)Fashioned

iii)Gnawed.

4. GRAMMAR (15marks)

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a)Replace the underlined words with a suitable phrasal verb. (4 marks)

i) It is not good to <u>despise</u> other people.

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

ii) I am currently <u>living</u> with my aunt in South B.

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

iii) The deputy was <u>annoyed</u> with the two girls.

…………………………………………………………………………………………

iv) Please <u>remove</u> that jacket.

....

b)Choose the best alternative to complete the following sentences. (2 marks)

i) Calister and …………………………….. (me, I) wrote the article.

ii) How can you be so sure it was ……………………………..?(they, them)

c) Insert the correct preposition in the blanks to complete the sentences below. (3 marks)

i) The ailing man has been in bed…………………………… the whole week.

ii) Adam's birthday is …………………………………….. July.

iii) Unemployed youths often subscribe……………………………. illegal groups.

d) **Complete the following sentences using the most appropriate form of word in brackets.**

(3 marks)

i. The dog barked …………………………………. at the stranger. (menace)

ii. The queen's ……………………………………. impressed everybody. (elegant)

iii. The beautiful girl danced …………………………………………(grace)

e)Fill in the blank spaces in the following sentences with the correct form of the word in brackets (3mks)

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i) The politician tried to_____ the rowdy crowd but failed. (peace)

ii) Juma found an old radio and_____ it trusting it would work. (wind)

iii) Any person taking a public office ought to be _____(corrupt).

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ENGLISH PAPER 3 FORM 4

MIDTERM 2 SET 2 2023 EXAM

NAME:_____STREAM_____DATE:_____

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 any **three** questions only.*
- *Each of your essays must **not** exceed **450** words.*
- *Candidates must answer the questions in English.*

For Examiner's Use Only:

Question	Maximum Score	Candidate's Score
1	20	
2	20	
3	20	
TOTAL	60	

*This paper consists of **2** printed pages. Ensure none is missing*

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Answer any three questions

1. Write a composition beginning with:-

   It was on Sunday evening and everybody was busy doing their homework. Suddenly a loud bang was heard outside the school fence…

2. Write a composition explaining what Kenyan youth can do to help in the fight against corruption.

3. Write an essay to show cases of moral decay in the novel Blossoms of the Savannah.

4. Choices have consequences. Show the truthfulness of the above statement in reference to the novel Blossoms of the Savannah.

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MID TERM 2 EXAM

GEOGRAPHY (QUESTION PAPER)

FORM 4

TIME 2¾ HOURS
PAPER 1

Name……………………………………………………… Adm No………………………………..

School………………………………………………… Class…………………………………….

Signature………………………………………….. Date……………………………………

Instructions to candidates

(a) Write your name, admission number and class in the spaces provided above.

*(b) This paper has **two** sections: **A** and **B***

*(c) Answer **all** the questions in section **A***

*(d) Answer **question 6** and any other **two** questions from section **B***

*(e) **This paper consists of 14 printed pages.***

*(f) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.***

For Examiner's Use Only

Section	Questions	Maximum Score	Candidate's Score
A	1 – 5	25	
B	6	25	
		25	
		25	
	Total Score	100	

SECTION A

*Answer **all** questions in this section*

1. (a) Define the term equinox. (2 marks)

    (b) If the local time at 75^0W is 8.00 a.m., what is the local at the longitude 35^0E? (3 marks)

2. (a) Give **two** examples of non-metallic minerals. (2 marks)

    (b) State **three** ways through which sedimentary rocks are formed. (3 marks)

3. (a) What is natural vegetation? (2 marks)

    (b) State **three** characteristics of Mediterranean type of vegetation. (3 marks)

4. The diagram below shows a barchan. Use it to answer question (a).
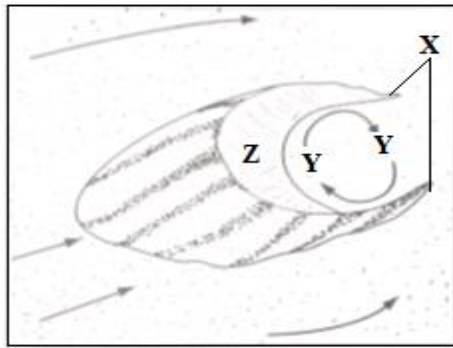
    (a) Name (i) the feature marked **X**. (1 mark)

    (ii) the air current marked **Y**. (1 mark)

    (iii) the slope marked **Z**. (1 mark)

    (b) Give **two** ways in which wind transport its load in deserts. (2 marks)

5. (a) Differentiate between a catchment area and a watershed. (2 marks)

    (b) Give **three** features that result from river rejuvenation. (3 marks)

SECTION B

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

6. Study the map of KIJABE 1:50,000 (134/3) provided to answer the following questions.

   (a) (i) What is the approximate height of Kijabe hill?   (1 mark)

   (ii) Give the six grid reference of the school at Mai Mahiu in the southern area.   (2 marks)

   (iii) Calculate the area covered by the thicket to the west of the rail way line.   (2 marks)

   (b) (i) What is the approximate location of Kijabe Railway Station in terms of latitude and longitude?

                                                                                        (2 marks)

   (ii) Identify **three** methods used to represent relief on the area covered by the map.   (3 marks)

   (c) Draw a rectangle measuring 10cm by 5cm to represent the area enclosed by easting 30 and 40 and Northing 95 and 00.   (1 mark)

   On it mark and name the following features:

   - Railway   (1 mark)
   - All weather road bound surface   (1 mark)
   - Forest   (1 mark)
   - Murrum pit   (1 mark)

   (d) Citing evidence from the map, identify **two** economic functions of Kijabe centre.   (4 marks)

   (e) Explain **three** factors influencing the distribution of vegetation in the area covered by the map.

                                                                                        (6 marks)

7. (a) (i) What is plate tectonics?   (2 marks)

   (ii) Explain **three** evidences supporting the continental drift theory.   (6 marks)

   (b) (i) Apart from fold mountains, give **three** other features resulting from folding.   (3 marks)

   (ii) With the aid of well labeled diagrams, describe how movement of tectonic plates may lead to formation of fold mountains.   (8 marks)

   (c) Explain **three** positive significance of fold mountains to human activities.   (6 marks)

8. (a) (i) Define the term climate. (2 marks)

    (ii) Explain how the following factors influence the climate of an area.

- latitude (2 marks)
- distance from the sea (2 marks)

(b) The table below shows temperature readings at a weather station.

Day	MON.	TUE.	WED.	THUR.	FRI.	SAT.	SUN
Max (ºC)	26	25	26	24	27	27	24
Min. (ºC)	15	17	17	13	19	18	17

Calculate;

    (i) the diurnal temperature range for Monday. (2 marks)

    (ii) the mean daily temperature for Friday. (2 marks)

(c) Study the climate map of Africa below and answer the questions that follow.
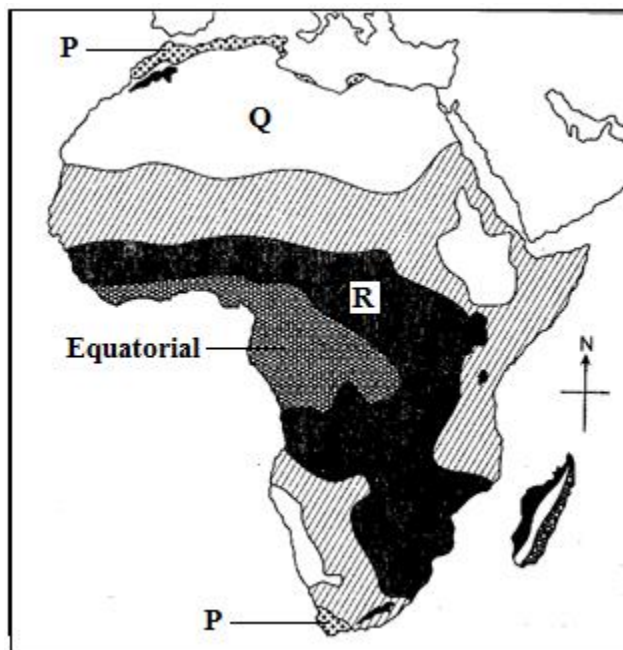
    (i) Name the climatic regions marked **P**, **Q** and **R**. (3 marks)

    (ii) Describe the characteristics of equatorial climate. (6 marks)

(d) Explain **three** ways in which vegetation has adopted to the climatic conditions in the region **Q**.

(6 marks)

9. (a) (i) What is an artesian basin? (2 marks)

(ii) Explain **three** factors which influence the formation of features in limestone areas. (6 marks)

(b) (i) A part from stalagmites, name **two** other underground features in limestone areas. (2 marks)

(ii) With the aid of a diagram, describe how a stalagmite is formed. (8 marks)

(c) Your supposed to carry out a field study on limestone region.

(i) Give **two** reasons why you would need a map of the area of study. (2 marks)

(ii) State **two** ways you would prepare for the study. (2 marks)

(iii) Give **three** reasons why you are likely to find few settlements in the study area. (3 marks)

10. (a) (i) Define the term glacier. (2 marks)

(ii) Give **two** processes of glacial erosion. (2 marks)

(b) Explain **three** conditions that lead to glacial deposition. (6 marks)

(c) The diagram below shows features resulting from glacial deposition in lowlands.

(i) Identify the features labeled **A** and **B**. (2 marks)

(ii) Describe how a terminal moraine is formed. (3 marks)

(d) Explain **five** positive significance of glaciation in lowland areas. (10 marks)

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MID TERM 2 EXAM
GEOGRAPHY (QUESTION PAPER)

FORM 4

TIME 2¾ HOURS
PAPER 2

Name.. Adm No....................................

School.. Class...

Signature.. Date...

INSTRUCTIONS TO STUDENTS

- This paper consists of two sections **A** and **B**

- Answer **all** the questions in section **A**:

- In section **B** answer question **6** and any other **two** questions.

ALL the answers must be written in the answer booklet provided

ANSWER ALL THE QUESTIONS IN THIS SECTION
1. (a) Name **two** types of fish caught from Lake Victoria   (2mks)
   (b) State **three** reasons why fish farming should be encouraged in Kenya   (3mks)

2 (a) State **three** physical conditions that favour wheat cultivation in Kenya   (3mks)
   (b) Name two provinces where wheat is grown on large scale in Canada   (2mks)

3 (a) What is urbanization   (1mk)
   (b) State **four** factors which have led to the development of Mombasa as a mojor sea port in
   the region   (4mks)

4 Differentiate between land reclamation and land rehabilitation   (2mks)
   (b) State **three** factors that influenced the establishment of perkerra irrigation scheme (3mks)

5 (a) List **two** forms of telecommunication services in Kenya   (2mks)
   (b) State **three** ways in which Kenya would benefit from construction of standard gauge
   railway   (3mks)
SECTION B: ANSWER QUESTION 6 AND ANY OTHER TWO.
6. Use the data below to answer questions that follow:

Kenya's Export crop (1986-1989) in tonnes

Year/crop	1986	1987	1988	1989
Coffee	12.6	10.0	9.1	9.8
Tea	11.6	13.5	13.8	16.3
Sisal	3.2	2.8	3.1	3.3

(a)(i) Calculate the tones of crop export from Kenya between 1986-1989 **(2mks)**

(ii) Draw a compound bar graph to represent Kenya Export (1986-1989) **(8mks)**
(Scale 1 cm ref 5 tonnes)

(iii) Give **two** advantages of using compound bar graphs to represent data **(2mks)**

b) Describe the stages involved in coffee production from picking to marketing. **(8mks)**

c) i) A part from being a beverage, state **any** other use of coffee. **(1mk)**
ii) Explain two significance of coffee industry to the Kenyan economy. **(4mks)**

7. **(a) (i)** Name **three** types of minerals. **(3mks)**
(ii) State **three** ways in which minerals occur. **(3mks)**
(b) **(i)** Describe shaft mining method. **(5mks)**
(ii) Outline **three** challenges faced by shaft miners. **(3mks)**
(c) Explain **four** problems facing the mining industry in Kenya. **(8mks)**
(d) Highlight **three** ways in which mining derelicts can be reclaimed. **(3mks)**

8. (a) (i)Apart from water and air pollution name **two** other types of pollution. **(2mks)**
(ii)Identify **three** ways through which water is polluted. **(3mks)**
(iii)Explain **three** effects of air pollution on the environment. **(6mks)**
(b)(i) Explain **three** factors that lead to frequent flooding in the lake region of Kenya. **(6mks)**
(ii)Explain **two** ways through which floods are controlled in the lake region of Kenya. **(4mks)**
(c)State **four** effects of wind as an environmental hazard in Kenya. **(4mks)**

9. The pyramid below represents the population structure of country A.
Use it to answer the questions that follow.
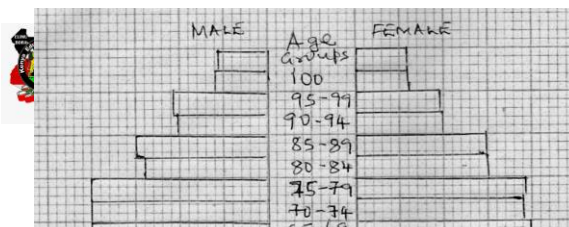
a. Describe the characteristics of the population represented by the pyramid. **(8mks)**
b. Apart from migration, explain **four** factors that influence population growth and structure. **(8mks)**
c. State **two** positive effects of high population growth. **(2mks)**
d. i. Give **five** problems that could arise from overpopulation. **(5mks)**
   ii. Name **two** sources of population data. **(2mks)**

10.(a) (i) What is energy? **(1mk)**
(ii) Name **three** renewable sources of energy. **(3mks)**
(b) (i) State **four** factor that led to the implementation of the seven forks dam project in Kenya**. (4mks)**
(ii) Explain **three** benefits of seven forks Dam to the economy of Kenya. **(6mks)**
(c) (i) Name **two** countries in Eastern Africa where crude oil has been discovered. **(2mks)**
(ii) Describe the mode of formation of crude oil. **(4mks)**
(d) State **five** reasons why Kenya is investing in the development of renewable sources of energy. (5mks)

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MID TERM 2 EXAM

HISTORY AND GOVERNMENT (311/1)

PAPER 1

FORM FOUR (4)

Time: 2½ Hours

Name: …………………………………………………. Adm No: ……………….

School: ………………………………………………….. Class: …………………..

Signature: ………………………………………………….. Date: …………………...

Instructions to Candidates
- *This paper consists of three sections A, B and C.*
- *Answer all questions in section A, three from Section B and two from Section C.*
- *Answers to all the questions must be written in the answer booklet provided.*
- *This paper consists of three printed pages*

 NOTE; Candidates should check the question paper to ensure that all pages are printed as indicated and no questions are missing

SECTION A (25 MARKS)
ANSWER ALL THE QUESTIONS IN THIS SECTION

1. Give TWO examples of early inhabitants of Kenya. (2 marks)

2. Identify TWO cultural practices introduced by the Cushites in Kenya. (2 marks)

3. Identify the TITLE given to the war leader among the Luo community. (1 mark)

4. What was the MAIN negative effect of plantation agriculture on the people of Kenyan coast? (1 mark)

5. Give TWO diplomatic methods used by the British to establish colonial rule in Kenya (2marks)

6. Give the MAIN importance of the Devonshire white paper of 1923. (1 mark)

7. State TWO economic benefits of the Kenya Uganda railway during the colonial period. (2 marks)

8. Give TWO advantages of Representative democracy (2 marks)

9. Give ONE reason why Africans were denied equal educational opportunities with other races during the colonial period.(1 mark)

10. Identify TWO features of African socialism as spelt out in the sessional paper no. 10 of 1965. (2 marks)

11. Identify TWO ways of becoming a Kenyan citizen. (2 marks)

12. Given ONE reason why the government of Kenya may limit a person's freedom of speech. (1 mark)

13. Give TWO ways through which parliamentary supremacy in Kenya can be limited. (1 mark)

14. Give ONE house committee of parliament which deals with government financial matters. (1 mark)

15.What was the MAIN contribution of professor Wangari Maathai. (1 mark)

16. Give the MAIN constitutional change in Kenya in 2008 (1 mark)

17. State ONE type of public expenditure (1 mark)

18a) State three ways through which the Bantus interacted with the Cushites during the pre-colonial period.(3 Marks)

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

19. (a) Give three reasons why the early visitors came to Kenyan coast before 1500 A.D. (3 marks)

(b) Explain six factors that contributed to the development of trade between Kenyan coast and outside world by 1900 (12 marks)

20. (a) Give three grievances of the Kikuyu Central Association which were Presented by Jomo Kenyatta to the colonial secretary in 1929.(3 marks)

b) Explain six roles played by trade unions to improve the lives of the people of Kenya during the colonial period (12 marks)

21.(a) Identify three education commissions established in the post-colonial Kenya. (3 marks)

(b) Explain six challenges facing the health sector in Kenya today. (12marks)

SECTION C (30 MARKS)
ANSWER ANY TWO QUESTIONS

22. a) State three reasons why national integration is important in Kenya.(3 Marks)

22. b) Explain six methods of conflict resolution.(12 marks)

23(a) State three functions of cabinet secretaries (3 Marks)

(b) Explain six functions of the Independent Electoral and Boundaries Commission.
        (12 marks)

24. (a) State three functions of a governor in Kenya (3 Marks)

   (b). Explain six possible solutions to challenges facing County Government in Kenya (12marks)

MID TERM 2 EXAM

HISTORY AND GOVERNMENT (311/2)

PAPER 2

FORM FOUR (4)

Time: 2½ Hours

Name: ……………………………………………………. **Adm No**: ……………….

School: ………………………………………………….. **Class**: …………………..

Signature: …………………………………………….. **Date**: …………………...

INSTRUCTIONS TO THE CANDIDATES:

- *This paper consists of **three** sections A, B and C.*
- *Answer **all** questions in section A, **three** questions from section **B** , and **two** questions from section **C***
- *Answers to **all questions** must be written in a separate booklet provided.*

SECTION	QUESTIONS	MARKS
A	1-17	
B	18	
	19	
	20	
	21	
C	22	
	23	
	24	
TOTAL		

This paper consists of 3 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A (25marks)) (Answer all questions in this section)

1. Give two ways in which archaeologists obtain historical information (2mks)
2. Name the period in history that is associated with microlithic tools (1mk)
3. Identify tools invented by the Sumerians that facilitated the production of food (2mks)
4. State two characteristics of regional trade (2mks)
5. Identify one earliest traditional means of water transport (1mk)
6. State two disadvantages of wood as a source of energy (2mks)
7. Give the contribution of Loius Pasteur in the field of medicine (1mk)
8. Identify the main factor that led to the growth of the ancient town of Meroe (1mk)
9. State one significance of the of the royal fire by the for Mwene Mutapa kingdom (1mk)
10. Name the Chartered Company used by the British government to administer her colonies in West Africa (1mk)
11. What was the main contribution of religion in the MajiMaji uprising of 1905-1907? (1mk)
12. State two roles of African chiefs in the French system of assimilation in Senegal (2mks)
13. Apart from African National Congress (ANC) name one other political party that fought for independence in South Africa (1mk)
14. Give two camps of fighting powers during the Second World War (2mks)
15. Name any two permanent members of the United Nations (2mks)
16. State the main political challenge that has faced Democratic Republic of Congo (1mk)
17. Identify two houses of Congress in United States of America (2mks)

SECTION B 45 MARKS (Answer any three questions in this section)

18 a) Identify five ways in which the development of the upright posture improved early man's way of life (5mks)

   b) Describe the way of life of early human beings during the Middle Stone Age (10mks)

19 a) State three contributions of oversee colonies to the expansion European industries in Europe (3mks)

   b) Discuss six problems which the European society faced as a result of industrialization (12mks)

20 a) Identify three ways in which African collaboration with Europeans hastened colonization of Africa (3mks)

   b) Explain six effects of the partition of Africa on African communities (12mks)

21 a) Give three political developments in South Africa between 1990 and 1991 which led to peaceful introduction of majority rule (3mks)

   b) Explain six challenges faced by African Nationalists in their struggle for majority rule in South Africa (12mks)

SECTION C 30MARKS (Answer any two questions in this section)

22 a) State three functions of Lukiko of Buganda kingdom during pre-colonial period   (3mks)

  b) Describe the political organization of the Shona during the pre-colonial period   (12mks)

23 a) Name three co-founders of Pan-African Movement   (3mks)

  b) Explain six achievements of Pan-Africanism between 1945 and 1963   (12mks)

24 a) Give three requirements one has to fulfill in order to contest as a president in India   (3mks)

  b) Describe six functions of the Prime Minister of Britain   (12mks)

MID TERM 2 EXAM

HOME SCIENCE (441/1)

PAPER 1

THEORY

FORM FOUR (4)

Time: 2½ Hours

Name: ……………………………………………………. Adm No: ……………….

School: ………………………………………………….. Class: …………………..

Signature: …………………………………………….... Date: …………………...

Instructions to students

a) Write your name, admission number and class in the spaces provided
b) Sign and write the date of the examination in the spaces provided
c) This paper consists of **three** sections: **A, B** and **C**
d) Answer **all** the questions in sections **A** and **B** and any **two** questions from section **C**
e) Answers to all the questions must be written in the spaces provided in the paper
f) **This paper consists of 14 printed pages**
g) **Students should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing**
h) **Students should answer the questions in English**

For examiner's use only

Section	Question	Maximum Score	Student's Score
A	1- 20	40	
B	21	20	
C		20	
		20	
TOTAL SCORE		100	

SECTION A: (40 marks)

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

1. Name **two** examples of absorbers used in stain removal.   (1 mk)

    a. _____

    b. _____

2. List down **two** stains that are removed by sunlight.   (1 mk)

    a. _____

    b. _____

3. Give another name for the following nutrients.   (2 mks)

    a. Vitamin A _____

    b. Tocopherol _____

    c. Vitamin C _____

    d. Phylloquinone_____

4. State **two** qualities to look for when buying a kitchen knife.   (2 mks)

    a. _____

    b. _____

5. Give **four** disadvantages of decayed teeth.   (2 mks)

    a. _____

    b. _____

    c. _____

    d. _____

6. Mention **four** uses of milk in food preparation.   (2 mks)

a. _____

b. _____

c. _____

d. _____

7. Give **two** signs and symptoms a person suffering from goitre would exhibit.   (2 mks)

a. _____

b. _____

8. Dried fruits are used to in cake making. Give **two** reasons for this.   (2 mks)

a. _____

b. _____

9. Give **two** advantages of using an ironing board instead of a table when ironing clothes.(2 mks)

a. _____

b. _____

10. Mention **four** reasons why excessive gain during pregnancy is dangerous.   (2 mks)

a. _____

b. _____

c. _____

d. _____

11. State **two** precautions taken when laundering viscose rayon.   (2 mks)

a. _____

b. _____

12. State **three** benefits of breast-feeding to a mother.   (3 mks)

a. _____

b. _____

c. _____

13. Give **two** uses of facings in clothing construction.   (2 mks)

a. _____

b. _____

14. What is the difference between decorating and garnishing food.   (2 mks)

a. _____

b. _____

15. List down **four** faults that may occur in cooking of mandazi.   (2 mks)

a. _____

b. _____

c. _____

d. _____

16. Outline **two** reasons for blending fibres.   (2 mks)

a. _____

b. _____

17. State **two** advantages of electricity as a form of lighting.   (2 mks)

a. _____

b. _____

18. Highlight **two** disadvantages of réchauffé dishes.   (2 mks)

a. _____

b. _____

19. Give **three** considerations to make when choosing cleaning agents.   (3 mks)

a. _____

b. _____

c. _____

20. State **four** uses of trimmings in garment construction.   (2 mks)

a. _____

b. _____

c. _____

d. _____

SECTION B (20 marks)

COMPULSORY

Answer question 21 in the spaces provided.

21. You have been requested to assist with some chores in the home.
    a. Outline **six** rules to observe when removing stains from clothes and household articles

before doing the family wash. (6 mks)

b. Outline the procedure you would follow when laundering a woolen blanket for a baby cot.
(14 mks)

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SECTION C (40 MARKS)

*Answer any **TWO** questions from this section in the spaces provided at the end of this section.*

22. (a) Outline **four** practices undertaken to prevent loss of colour when laundering clothes. (4 mks)

(b) Explain **four** factors to consider when buying green leafy vegetables. (8 mks)

(c) Mention **four** points to consider when taking body measurements. (4 mks)

(d) Suggest **four** factors that can cause food prices to rise. (4 mks)

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23. (a) State **four** ways of minimizing fatigue while working in the kitchen. (4 mks)

(b) Give **four** qualities of a well-made patch on a bed sheet. (4 mks)

(c) Identify and explain **three** activities carried out in preparation for a family wash. (6 mks)

(d) Give two reasons for using each of the following ingredients in flour mixtures. (6 mks)

i) Eggs

ii) Sugar

iii) Salt

24. (a) Outline **two** remedies for each of the following sewing machine faults.　　(4 mks)
    i.   Needle breaking
    ii.   Missing stitches

(b) Describe **three** principles of food preservation.　　(6 mks)

(c)　Explain **four** benefits of living in a well-ventilated house.　　(4 mks)

(d) Explain **three** factors to consider when selecting a baby's clothes.　　(6 mks)

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MID TERM 2 EXAM

HOME SCIENCE (FOODS AND NUTRITION) (441/3)

PAPER 3

PRACTICAL

FORM FOUR (4)

Time: 1½ Hours

Name: ……………………………………………………. **Adm No**: ……………….

School: ………………………………………………….. **Class**: …………………..

Signature: ………………………………………………….. **Date**: …………………...

Instructions to candidates

PLANNING SESSION   30 minutes

PRACTICAL SESSION   1 hour

Read the test carefully.

Text books and recipes may be used during the planning session as reference materials.

You will be expected to keep to your order of work during the practical session.

At the end of planning session you will only carry out your reference materials.

You are not allowed to bring additional notes to the practical session

This paper consists of 2 printed pages.

Candidates should check to ascertain that both pages are printed.

THE TEST

You are making a quick lunch for yourself and your aunt. Using **all** the ingredients listed below, prepare, cook and present a one dish meal and a refreshing drink for the two of you.

Ingredients

Fruit in season

Beef/Beans

Salt

Tomatoes

Rice/Green bananas/Potatoes

Fat/Oil

Carrots

Sugar

Onions

PLANNING SESSION- 30 minutes

Use separate sheets of paper for each task listed below and a carbon paper to make duplicate copies. Then proceed as follows:

1. Identify the dishes and write down the recipes;
2. Write down your order of work;
3. Make a list of foodstuff, materials and equipment you will require.

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MID TERM 2 EXAM

ISLAMIC RELIGIOUS EDUCATION (QUESTION PAPER)

FORM 4

TIME 2½ HOURS
PAPER 1

Name…………………………………………………… Adm No……………………………..
School…………………………………………………. Class………………………………….
Signature……………………………………………… Date…………………………………

<u>INSTRUCTIONS</u>:

1. This paper contains six (6) questions.
2. Answer any FIVE questions
3. Write your answers in the answer sheet provided.
4. All answers must be in English.

1. a) State etiquettes to be observed during Qur'an recitation.   (7mks)
    b) State six characteristics of the language of the Qur'an.   (5mks)
    c) Discuss the reasons why mankind needed revelation of the Qur'an.   (8mks)

2. a) Give factors that facilitated the compilation of the Qur'an.   (5mks)
    b) Why is the Qur'an considered as a miracle by Muslim?   (7mks)
    c) Explain five benefits of translating the Qur'an into other languages. (8mks)

3. a) Discuss the importance of Hadith.   (8mks)
    b) Explain the five themes of the forty Hadith of Iman Nawawi.   (5mks)
    c) "One who takes care of an orphan and I will be in paradise" he raise his force figure and middle figure by way of illustration in relation to this hadith. Identify five Islamic teachings in treatment of orphans.   (7mks)

4. a) Discuss briefly the ulul Azm prophets and their trials.   (10mks)
    b) Explain the significance of the belief in Qadar to a Muslim.   (10mks)

5. a) State the significances of shahadah.   (10mks)
    b) What are the functions of a Kadhi in Kenya.   (10mks)

6. a) Explain the reasons why it becomes compulsory for a pilgrim to slaughter animals.
                                                                           (7mks)
    b) What are the contribution of Imam Abu Hanifah to development of Figh. (5mks)
    c) What are the major offenses of Hudud and punishment of each.   (8mks)

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MID TERM 2 EXAM

ISLAMIC RELIGIOUS EDUCATION (QUESTION PAPER)

FORM 4

TIME 2¹/₂ HOURS
PAPER 2

Name……………………………………………………… Adm No………………………………..
School………………………………………………………. Class……………………………………
Signature……………………………………………… Date……………………………………

INSTRUCTIONS TO CANDIDATES:

- Write your name and index number on the answer sheets given

- This paper consists of six questions.

- Answer any five questions.

- This paper consists of two printed pagers.

- Candidates should check the paper to ascertain that all pages are printed and no questions are missing.

- Candidates should answer the questions in English.

1. (a). State the benefits of having the virtue of *Sidq (*Truthfulness*)* (5marks)

   (b) Identify five importance of preserving the physical environment. (5marks)

   (c) Discuss five ways Muslims can help in the fight against drug and substance abuse. (10marks)

2. (a) State five significance of marriage in Islam. (5 marks)

   (b) What are the rights that a Muslim husband is entitled to (7 marks)

   (c) Explain four Islamic teachings on how eddat should be observed (8 marks)

3. (a) Under what circumstances can a business agreement be considered null and void in Islam (8marks)

   (b) Identify seven forms of child abuse which are common in the society. (7marks)

   (c) Mention five reasons that can lead to revocation of a Wasiya. (5 marks)

4. (a) Name six wives of the prophet (p.b.u.h). (6 marks)

   (b) Identify the contributions of Abubakar (R.A) to the prophet's (p.b.u.h) mission. (7marks)

   (c) Explain the factors that led to the decline of the Fatimid dynasty. (7marks)

5. (a) Explain the roles that city states played in the spread of Islam along the coast of East Africa (10 marks)

   (b) Identify the social contributions of Muslims in Kenya (5marks)

   (c) Outline **five** achievements of *Harun Ar-Rashid* of the *Abbasids* (5 marks)

6. (a) State six contributions of *SeyyidQutb* in Islam (6 marks)

   (b) Explain seven of the ten rules of conduct formulated by *Imam Al Ghazali.* (14marks)

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JINA………………………….……………NAMBARI YA USAJILI………DARASA………..

102/1
KISWAHILI INSHA
KARATASI YA KWANZA

KIDATO CHA NNE
102/1
Kiswahili Insha
Karatasi ya 1

MAAGIZO KWA MTAHINIWA:

Maagizo

1. *Andika insha **mbili**. Insha ya kwanza ni ya **lazima**.*
2. *Kisha chagua insha nyingine moja kati ya hizo tatu zilizobakia.*
3. *Kila insha isipungue maneno **400**.*
4. *Kila insha ina alama 20.*
5. *Kila insha **lazima** iandikwe kwa lugha ya **Kiswahili**.*
6. *Insha zote **sharti** ziandikwe katika nafasi ulizoachiwa kwenye kijitabu hiki cha maswali.*
7. ***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	20	
2	20	
3	20	
4	20	
Jumla	40	

1. Wewe ni mhariri mkuu wa Gazeti la Mwangaza, andika tahariri kuhusu namna tatizo la ukosefu wa nafasi za ajira miongoni mwa vijana linavyoweza kukabiliwa.

2. Serikali za ugatuzi zina faida nyingi kuliko hasara . Jadili

Contact Kenya Educators 0768321553/0795491185 for Marking Schemes

3. Andika insha inayooana na methali **kutangulia si kufika**

4. Andika insha itakayoanza kwa maneno haya:

   Milipuko mikubwa ilisikika pu! Pu! Puu! Kisha niliwaona watu wakikimbia kuelekea pande zote…

MID TERM 2 EXAM

JINA……………………………..……NAMBARI YA USAJILI……...DARASA………..

102/2
KISWAHILI LUGHA
KARATASI YA PILI

KIDATO CHA NNE
102/2
Kiswahili Lugha
Karatasi ya 2

Muda:Saa 2 ½

Maagizo

(a)Andika jina na nambari yako ya mtihani katika nafasi ulizoachiwa hapo juu.

(b)Tia sahihi yako kisha uandike tarehe ya mtihani

(c) Jibu maswali yote.

Kwa matumizi ya mtahini pekee

Swali	Upeo	Alama
1	15	
2	15	
4	40	
4	10	

1 UFAHAMU (alama 15)

Soma kifungu kifuatacho kisha ujibu maswali

Suala la mahusiano ya wanadamu katika jamii, uainishaji wake na udhihirikaji wake limewashughulisha wataalamu wa elimu jamii kwa dahari ya miaka. Suala hili huwatafakarisha wataalamu hao kutokana na umuhimu wake katika maisha ya binadamu. Msingi mkuu wa uainishanji wa mahusiano hayo ni kukichuza kipindi cha mahusiano yenyewe. Yapo mahusiano bainaya waja ambayo yanachukua muda mfupi, kwa mfano saa au dakika chache na mengine ambayo huenda yakachukua miaka ayami.

Mahusiano ya muda mrefu kabisa ni yale yanayojulikana kama mahusiano ya kudumu. Inamkinika kudai kuwa miundo ya kijamii, kisiasa na kiuchumi huweza kuyadhibiti mahusiano hayo kwa kiasi kikubwa. Watu wengi huitakidi kuwa uhusiano uliopo baina ya mtu na jamaa yake utachukua muda mrefu, na kwa hiyo ni uhusiano wa kudumu. Hali hii hutokana na uhalisi kuwa tunahusiana na jamaa zetu kwa kipindi kirefu labda tangu ukembe hadi utu uzima wetu. Uhusiano huuhautarajiwi kuvunjwa na umbali wa masafa baina yetu;tunaendelea kuwasiliana kwa barua au, katika enzi hii ya utandawazi,kwa kutumia nyenzo za teknohama kama mtandao na simu za mkononi na kudumisha uhusiano wetuwa kijamaa. Hata hivyo, inawezekana baadhi ya mahusiano ya kijamaa yasiwe ya kudumu. Mathalan, uhusiano uliopo baina ya mke na mume, na ambao unatarajiwa kuwa wa kudumu au wa kipindi kirefu,unaweza kuvunjwa kwa kutokea kwa talaka. Talaka hiyo inavunja ule uwezekano wa uhusiano wa kudumu unaofumbatwa na sitiari ya pingu za maisha.

Katika ngazi ya pili,mahusiano ya kipindi cha wastani,kuna mahusiano yanayohusisha marafiki zetu maishani, shuleni au kwenye taasisi zozote zile, majirani zetu, wenzetu katika mahali mwa kazi,washiriki kwenye sehemu za ibada au za burudani na wenzetu kwenye vyama tofauti na makundi ya kujitolea. Inawezekanakudahili kuwa baadhi ya mahusiano haya,hususan baina ya marafiki na majirani huweza kuwa ya miongo na daima. Hali hii huweza kutegemea muundo na mfumo wa jamii. Kwa mfano, kwa wanajamii waoishi kwenye janibu fulani mahsusi, na kwa miaka tawili bila ya kuhajiri,uhusiano wao na majirani huweza kuwa wa kudumu. Hali hii **inasigana** na hali iliyoko kwenye maisha ya mijini. Maisha ya mijini yana sifa ya kubadilikabadilika. Isitoshe,kutokana na mfumo wa maisha ya kibepari **yameghoshi** ubinafsi mwingi. Mawimbi ya mabadiliko na ubinafsi huweza kuumomonyoaukuta wauhusiano wa kudumu.

Mwelekeo wa maisha ya siku hizi ya uhamaji kutoka maeneo au viambo walikoishi watu unasababisha kupombojea kwa mahusiano ya kudumu baina yao na majirani zao. Uhusiano katiya wenza katika mazingira ya kazi unahusiana kwa kiasi fulani na ule wamajirani. Vimbunga

vya ufutwaji kazi, ubadilishaji wa kazi, hali zisizotegemewa na mifumo ya kimataifa pamoja na hata mifumo ya kisiasahuweza kuathiri mshikamano wa wanaohusika kazini.

Kiwango cha mwisho cha mahusiano ni uhusiano wa mpito au wa muda mfupi. Mahusiano ya aina hii hujirikatika muktadha ambapo pana huduma fulani. Huduma hizi zinaweza kuwa za dukani, kwenye sehemu za ibada,kwenye kituo cha mafuta,kwa kinyozi, kwa msusi na kadhalika. Kuna sababu kadha zinazotufanya kuyazungumzia mahusiano ya aina hii kama ya mpito. Kwanza, uwezekanowa mabadiliko ya anayeitoa huduma hiyo ni mkubwa. Si ajabu kuwa unaporudi kwa kinyozi au msusi unatambua aliyekushughulikia hayupo. Hata hivyo, kuna **vighairi** hususa pale ambapo mtoa huduma anayehusika ni yule yule mmoja.

Mahusiano ya mpito yanatawaliwa na'uhusiano wa chembe chembe.' Uhusiano wa chembe chembe, bidhaa ya mfumo wa kibepari, unamaanisha kuwa kinachoshughulisha mtu ni chembe ndogo tu ya mwenzake. Chembe hiyo inaweza kuwa huduma, kwa mfano, gazeti analokuuzia mtu, viatu anavyokushonea,nguo anazokufulia,ususi anokufanyia na kadhalika. Mahussiano ya aina hii yametovukwa na hisia za utu na ni zao la mifumo ya kisasa ya kiuchumi na kijamii. Mtu anayehusiana na mwenzakekwa misingi ya chembe ndogo tu, huenda asijali kama mwenzake amekosa chakula,amefutwa kazi,amefiliwa,ameibiwa na kadhalika.
Suala kuu tunalopaswa kujiuliza ni: je, tunahusianavipi na jamaa zetu, marafiki zetuna majirani zetu? Je, uhusianowetu na raia wenzetu ni wa aina gani? Je, uhusiano wetu na nchi yetu ni wa mpito au ni wa kudumu?

(a) Taja kigezo cha kuzungumzia mahusiano. (alama 1)

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(b) Eleza imani ya watu kuhusu mahusiano ya watu. (alama 1)

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(c) Fafanua athari ya teknolojia kwenye mahusiano ya watu. (alama 2)

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(d) Eleza sababu nne kuu za kuharibika kwa mahusiano katika maisha ya leo.(alama 2)

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(e) Taja sifa kuu za mahusiano ya muda mfupi.   (alama2)

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(f) Je, kifungu hiki kina ujumbe gani mkuu?   (alama2)

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(g) Eleza maana ya maneno yafuatayo kama yalivyotumiwa katika kifungu.   (alama 3)

(i) inasigana...

   (ii)yameghoshi………

   (iii)vighairi……

2   UFUPISHO (alama 15)

Jamii ya leo inatawaliwa na kuendeshwa na kanuni ya maarifa. Inawezekana kusema kuwauchumi wa jamii za leo na zijazo utategemea maarifa zaidi kuliko utakavyotegemea uwezo wowote mwingine. Utambuzi wa uwezo mkubwa wa maarifa katika maisha ya binadamu ndio msingi wa watu kusema 'maarifa ni nguvu.'

Maarifa huelezwa kwa tamathali hii kutokana na uwezo wa: kuyadhibiti,kuyaendesha, kuyatawalana kuyaongoza maisha ya binadamu popote pale walipo. Mtu ameyakosa maarifa fulani huwa ameikosa nguvu hiyo muhimu na maisha yake huathirika pakubwa. Kwa msingi huu, maarifa yanawezakuangaliwa kama utajiri mkubwa ambao binadamu anaweza kuutumia kwa faida yake au kwa faida ya wanajamii wenzake. Ukweli huu ndio unaoelezwa na methali ya Kiswahili: 'Elimu ni mali.' Elimu ni chimbuko la maarifa muhimu maishani.

Msingi wa utajiri na maendeleo ya binadamu popote alipo basi ni maarifa. Je, maarifa kwa upande wake yana sifa gani? Maarifa yenyewe hayana upinzani. Maarifa uliyo nayo huweza kuwa na watu wengine pasiwe na upinzani baina yenu kwa kuwa kila mmoja ana maarifa sawa. Kila mmoja ana uhuru wa kuyatumia maarifa hayo kama chanzo cha kuyazalisha mengine. Utumiaji wa maarifa yenyewe hauyamalizi maarifa hayo. Maarifa hayawezi kugusika ingawa mtu anaweza kuyanyumbua maarifa yenyewe kwa kuyatumia kwa namna tofauti.

Maarifa huingiliana na maarifa mengine. Maarifa aliyo nayo mtu huweza kuhusishwa na maarifa aliyo nayo mtu mwingine ili kuvyaza au kuzuka na maarifa tofauti. Maarifa yanaweza kuchukuliwa kutoka sehemu moja hadi nyingine kwa namna ambavyo mtu huweza kufanya bidhaa nyingine ile. Kwa mfano, ni muhali mtu kulalamika kuwa hawezi kutembea kutoka sehemu moja hadi nyingine kwa sababu ana mzigo wa maarifa kichwani.

Sifa nyingine muhimu ya maarifa ni kuwa yanaweza kuwasilishwa kwa njia au mitindo mingine ya kidhahania. Ikiwa unataka kukihamisha chombo fulani kutoka sehemu moja hadi nyingine, lazima uwazie ukubwa wake, uzito wake na labda hata umbali wa panapohusika. Maarifa huweza kubadilishwa au kugeuzwa na kuwa ishara ambazo huyafanya kuwasilishswa kwa njia nyepesi kuliko kwa mfano ikiwa mtu atayawasilisha katika muundo wa, kwa mfano,kitabu.

Maarifa yana sifa ya uhusianaji. Kipengele fulani cha maarifa huwa na maana kinapowekwa sambabmba au kugotanishwa na kipengele kingine cha maarifa. Huo

huwa muktadha mzuri wa kueleweka au kuwa na maana kwa mfano, neno 'mwerevu' huweza kuwa na maana kwa kuwekwa katika muktadha wa 'mjinga', ' mjanja', 'hodari' na kadhalika.

Maarifa huweza kunifadhiwa katika nafasi ndogo sana. Suala hili linaeleweka kwa njia nyepesi tunapoangalia maarifa katika muktadha wa teknolojia. Data zinazowahusu mamilioni ya watu,ambazo zingehitaji maelfu ya maktaba na lukuki ya vitabu, huweza kuhifadhiwa kwenye kifaa kidogo kinachoweza kutiwa mfukoni.

Maarifa hayawezi kuthibitiwa au kuzuiliwa mahali fulani yasisambae. Maarifa huenea haraka sana. Maarifa ni kitu kinachoepuka pingu za watu wanaopenda kuwadhibiti binadamu wenzao. Hata pale ambapomfumo wa kijamii au wa kisiasa unafanya juu chini kuwadhibiti raia au watu wenyewe,ni muhali kuyadhibiti maarifa yenyewe. Inawezekana kuzidhibiti njia fulani za uenezaji wa maarifa lakini maarifa hayo yatapata upenyu wa kusambaa. Ni kweli kuwa maarifa ni nguvu inayozishinda nguvu zote.

(a) Fupisha aya ya pilina tatu   (maneno 55-60)(alama 5, 1 ya utiririko)

Matayarisho

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Nakala safi

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(b) Eleza sifa kuu za maarifa kama zinavyojitokeza kuanzia aya ya nne hadi aya ya nane.

(maneno 100-110)   (alama 10, 2 za utiririko)

Matayarisho

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3 MATUMIZI YA LUGHA   (alama 40)

(a) Taja sauti mbili zinazotamkwa mdomoni.
(alama 2)

....

(b) Andika visawe vya maneno yafuatayo;   (alama 2)
i)doa…………………………………………………………………………………………………
ii)omba..

(c) Bainisha shamirisho na chagizo katika sentensi   (alama 2)

Vibarua wamefanya kazi haraka ipasavyo .

....

(d) Eleza maana mbili za sentensi ifuatayo;

Hawa ni watoto wa marehemu Bwana Ndovu na
Bi.Makombo………………………………………………………………………………………………
……
……

(alama 2)

....

(e) Eleza matumizi ya alama ya ritifaa kwa neno lifuatalo;

N'shamchukua   (alama 2)
....

(f) Eleza mofimu katika neno lifuatalo   (alama 3)

Walichokilalia

....

(g) Bainisha vitenzi vilivyo katika sentensi ifuatayo: (alama 2)

Kalamu aliyokuwa nayo mwalimu ni ya mwanafunzi.

....

(h) Changanua sentensi ifuatayo ukitumia mistari au mishale   (alama 4)

Chakula kitamu kimeandaliwa.

....

....

....

....

....

(i)Huku ukitoa mifano mwafaka onyesha matumizi matatu ya kinyota katika sentensi.
(alama 3)

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

(j)Tunga sentensi moja ukitumia kielezi cha wakati na kielezi cha mahali.   (alama2)

....

....

(k) Toa mfano wa neno lenye muundo ufuatao wa silabi.   (alama 1)

IK+KI+KI+KI

....

(l) Onyesha matumizi ya viakifishi vifuatavyo.   (alama 2)

(i) kibainishi

....

(ii)parandesi

....

(m) Tumia neno –baya kama: (alama 2)

      (i) kiwakilishi

....

      (ii)kielezi

....

(n) Tunga sentensi sahili ukitumia kitenzi 'la' katika kauli ya tendewa.   (alama 2)

....

(o)Unganisha sentensi zifuatazo ukitumia neno japo;

i)Selina alijitahidi sana.

ii)Selina hakushinda mbio hizo.

....

(p)Kwa kuzingatia maagizo andika upya sentensi ifuatayo: (alama2)

   Tinga amewafanya ng'ombe wake wanywe maji.

   (Anza kwa : Mifugo wangu …………..usitumie 'amewafanya')

    ....

(q)Tunga sentensi moja yenye nomino dhahania na kivumishi kimilikishi.
    (alama 2)

    ....

(r) Bainisha maana mbili zinazojitokeza kutokana na sentensi hii.   (alama 2)

   Umu alimwandikisha mkewe.

....

(s)Onyesha dhamira ya sentensi hii;   (alama 1)

   Huenda mvua ikanyesha leo

   ....

4.ISIMUJAMII   (Alama 10)

Kumekuwa na mijadala mingi kuhusu athari ya chanjo dhidi ya ugonjwa unaosababishwa na virusi vya Kovid-19.Wewe ni Afisa wa afya katika eneo lenu umealikwa kutoa hotuba kuhusu usalama wa chanjo hii .Eleza sifa kumi za lugha utakayotumia.

....

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KENYA CERTIFICATE OF SECONDARY EDUCATION

KISWAHILI PAPER 3 FORM 4

MIDTERM 2 SET 2 2023 EXAM

NAME:_____STREAM_____DATE:____

MAAGIZO

a) Jibu maswali manne pekee.
b) Swali la kwanza ni la lazima
c) Maswali haya mengine matatu yachaguliwe kutoka sehemu nne zilizobaki
   yaani:-
   Riwaya , Hadithi fupi,Tamthilia na fasihi simulizi.
d) Usijibu maswali mawili kutoka sehemu moja.
e) Majibu yatolewe kwa lugha ya kiswahili

KWA MATUMIZI YA MTAHINI PEKEE

Swali	Upeo	Alama
1	20	
	20	
	20	
	20	
Jumla	80	

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SEHEMU YA A :USHAIRI

1   LAZIMA

Soma shairi lifuatalo kisha ujibu maswali

<u>Taifa ni Ushuru</u>

Lau kama ingakuwa, madhali tuna uhuru

Watu kodi kutotowa, na kuifanya kufuru

Vipi nchi ingakuwa, taifa bila nduniru

Taifa halingakuwa, bilashi bila ushuru

Hivi taifa kumea , nakuendelea mbele

Kwamba lajitegemea, haliwategei wale

Yataka kujitolea, ushuru bila kelele

Taifa halingakuwa, bilashi bila ushuru

Wafanyikazi wa umma, mfano mwema walimu

Wauguzi mahashuma, daktari wahadimu

Bila hizi darahima, vipi wangalihudumu?

Taifa halingakuwa, bilashi bila ushuru

Si vyema kuombaomba, kwa wageni kila mara

Huwa twajifunga Kamba, na kujitia izara

Adha zinapotukumba, kujitegemea bora

Taifa halingakuwa,bilashi bila ushuru

Miradi ya maendeleo, yahitaji darahima

Ndo tufikie upeo, ulio dunia nzima

Wadogo na wenye vyeo, bila kodi tutakwama

Taifa halingakuwa, bilashi bila ushuru

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Ushuru si kwa wanyonge, wasokuwa na uwezo

Watozwe hata wabunge, na wengine wenye nazo

Yeyote asijitenge, kodi akalipa bezo

Taifa halingakuwa, bilashi bila ushuru

Kwetu kutoa ushuru,ndiko kujitegemea

Pasiwepo na udhuru, usio wa kuelea

Huwa ni kama kiguru, asenao kutembea

Taifa halingakuwa, bilashi bila ushuru

Maswali

(a)Tambua hadhira inayolengwa katika shairi hili.
(alama 1)

b)Huku ukitoa mfano,onyesha mbinu **tatu** ambazo mshairi ametumia kutosheleza uhuru wake.
(alama 3)

c)Bainisha aina **tatu** za urudiaji zinazojitokeza katika utungo huu.
(alama 3)

d)Eleza muundo wa ubeti wa sita.
(alama 4)

e)Andika ubeti wa **nne** katika lugha ya nathari/tutumbi
(alama4)

f)Kwa kutolea mfano,taja mbinu **tatu** za kimtindo zilizotumika katika shairi hili.
(alama 3)

g)Weka shairi hili katika bahari yake ukirejelea :
(alama 2)

i)Vipande

ii)Vina

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SEHEMU B:RIWAYA

A.Matei:Chozi la Heri

Jibu swali la 2 au la 3

2."Alijiona kama mfa maji ambaye anakabiliwa na mtutumo wa **mawimbi ya misiba** ,mmoja baada ya mwingine."

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

b)Ukimrejelea msemewa wa maneno haya na wahusika wengine kutoka kwenye riwaya,onyesha jinsi walivyokumbwa na mawimbi ya misiba.
(alama 16)

3.**Baada ya dhiki ni faraja**. Kwa hoja kumi, thibitisha ukweli wa kauli hii ukirejelea riwaya nzima.   (alama 20)

SEHEMU YA CH:HADITHI FUPI

MAPAMBAZUKO YA MACHWEO NA HADITHI NYINGINE

Jibu swali la 4 au la 5

4.CLARA MOMANYI :MAPAMBAZUKO YA MACHWEO

a) .Changanua mtindo katika dondoo lifuatalo
(alama 12)

"Mzee Makucha alipigwa kalamu kazini miaka mingi iliyopita. Shirika la reli alilohudumia tangu macheo ya maisha yake lilimtimua kazini ili kupunguza idadi ya waajiriwa. Alikwenda mahakamani kutaka arudishwe kazini lakini hata kabla kesi haijasikizwa, shirika hilo lilisambaratika kutokana na hali ngumu ya kiuchumi. Hivyo, hata marupurupu yake hakupata kulipwa ! Machungu yaliyompata ni sawa na yale ya kupigiliwa msumari moto kwenye kidonda kibichi.Shoka likamwangukia yeye miongoni mwa wengine. Matarajio yake ya kuwa na maisha mema yakaporomoka kama jabali la barafu juani. Bintiye wa pekee aliwatoroka akiwa na umri mdogo kwenda ughaibuni. Mzee Makucha aliketi kuchuuza vitu vyake lakini bado alikuwa akiwazia maneno ya mkewe. Kwa nini niendelee kumstahi mtu asiye na fadhila kama yule? Aliwaza.

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b) Kwa hoja **nane** onyesha jinsi haki za vijana zilivyokiukwa ukirejelea   hadithi ya '**MAPAMBAZUKO YA MACHWEO'**
(alama 8)

AU

5.   **WINNIE NYARURI OGENCHE :Sabina**

"Siwezi kususia jukumu hata moja kwa sababu nikifanya hivyo nitakuwa najipalia makaa.

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

b)Bainisha **toni** katika kauli hii.   (alama2)

ch)Tambua **tamathali ya usemi** iliyotumika katika dondoo hili.(alama 2)

d)Fafanua sifa **nne** za msemaji wa maneno haya .   (alama 4)

e)Taja majukumu yoyote **matatu** anayoyarejelea msemaji wa maneno haya .
(alama 3)

f)Jinsia ya **kike** hukumbwa na matatizo chungu nzima. Thibitisha ukirejelea hadithi hii.
(alama5)

SEHEMU D:TAMTHILIA

Timothy M Arege:Bembea ya Maisha

Jibu swali la 6 au la 7

6."Hata nikiitwa nitaondoka nikiwa nimeridhika."

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

b)Kwa hoja **tano**, eleza sifa za msemaji wa maneno haya .   (alama 5)

c)Tambua mbinu **moja** ya lugha iliyotumika katika dondoo hili. (alama 1)

d) Wahusika mbalimbali kwenye tamthilia wamekubwa **na majonzi na furaha**. Thibitisha.
(alama 10)

                   au

7"Sikiliza basi! Zamani mila zetu hazikuruhusu watoto wa kike kwenda skuli au kurithi kitu."

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

b)Bainisha mbinu **mbili** za lugha zilizotumika katika dondoo hili. (alama 2)

c)Eleza **umuhimu** wa mzungumzaji wa maneno haya katika tamthilia hii.
(alama 4)

d)Tambua maudhui yanayojitokeza katika dondoo hili. (alama 2)

e)Kwa kurejelea Tamthilia ya *Bembea ya Maisha*. Dhihirisha namna maudhui uliyoyataja
katika sehemu (d) hapo juu yalivyojitokeza kwingineko kwenye tamthilia.
(alama 8)

SEHEMU YA E:FASIHI SIMULIZI

8)Soma kifungu kifuatacho kisha ujibu maswali.

Malaika nakupenda Malaika

Malaika nakupenda Malaika

Nami nifanyeje?

Kijana mwenzio

Nashindwa na mali sina we!

Ningekuoa malaika

Pesa zasumbua moyo wangu

Pesa zasumbua moyo wangu

Nami nifanyeje?

Kijana mwenzio

Nashindwa na mali sina wee!

Ningekuoa malaika

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Maswali

a)Tambua utungo huu. (alama 1)

b)Thibitisha jibu la (a) (alama2)

c)Tambua **nafsineni** katika utungo huu. (alama 1)

d)Eleza **toni** inayojitokeza katika utungo huu. (alama 2

e)Umealikwa kuwasilisha utungo huu mbele ya wanafunzi wa shule yako. Taja mambo **sita** utakayozingatia ili kufanikisha uwasilishaji huu. (alama 6)

f)Tambua shughuli **mbili** za kijamii zinazojitokeza katika utungo huu. (alama 2)

g)Eleza sababu **nne** utakazowahimiza wanafunzi wenzako wadumishe utungo huu katika jamii. (alama 4)

h)Taja mbinu **mbili** za kimtindo zilizotumika katika utungo huu . (alama 2)

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PAPER 1

Name……………………………………………………………… Adm No……………………………….

School……………………………………………………………. Class……………………………………….

Signature……………………………………………………… Date………………………………………

INSTRUCTIONS:

1. Write your name, Index number in the space provided at the top of the page.
2. Sign and write the date of examination in the spaces provided above.
3. This paper consists of **Two** sections 1 and II.
4. Answer all the questions in section **1** and only **five** questions from section II
5. All answers and working must be written on the question paper in the spaces provided below each question.
6. Show all the steps in your calculation, giving your answers at each stage in the space provided.
7. Marks may be given for correct working even if the answer is wrong.
8. Non programmable silent electronic calculator and KNEC Mathematical table may be used, except when stated otherwise.

FOR EXAMINER'S USE ONLY

SECTION 1

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

SECTION 2

17	18	19	20	21	22	23	24	Total

SECTION 1 (50 MARKS) COMPULSORY

1. Without using calculators evaluate: (3 marks)

$$\frac{\frac{1}{2}+2\frac{4}{5}\,of\,8\div6(2\times4\frac{2}{5})}{\frac{1}{2}\,of\,6\left(8\div7\frac{1}{3}\right)}$$

2. Simplify the expression (3 marks)

$$\frac{y^4 - x^4}{y^3 - yx^2}$$

3. Solve for x in the equation (3 marks)

$$2^{(2x-1)} \times \left[\frac{1}{8}\right]^{(1-x)} = 4^{(3x+1)}$$

4. The marked price of a modern camera is Ksh. 24,000. A trader sold it to a customer at a 10% discount. If the trader still made a profit of 20% on the cost price, what was its cost price. (3 marks)

5. A two – digit number is such that the sum of the digit is 12. If the digits are interchanged the value of the new number formed is fifteen more than twice the value of the original number. Find the original number? (4 marks)

6. Using reciprocal and square – root tables only. Evaluate. (3 marks)
$$9.452^2 + \frac{1}{63.37}$$

7. Two similar container hold 2000cm^3 and 6.75 litres respectively. If the smaller container has a diameter of 15.50cm. What is the radius of the larger container correct to 1 decimal place? (3 marks)

8. Given that **OA** = i + 3j - 4k   and **OB** = 3i - j - k.   (3 marks)
   Find /AB/

9. Three schools A, B, and C are such that B is 12km due south of A and C is 15km from A.
   C is on a bearing of N30^{0}W from B. Calculate the bearing of C from A.   (3 marks)

10. Solve the inequality
$$3 - 2x < x \leq \frac{2x + 5}{3}$$

   State the integral values which satisfy these inequalities   (3 marks)

11. The gradient of a line L through A (2x, 4) and B (-1, x) is $\frac{1}{7}$. Find the equation of line perpendicular to L through B. (3 marks)

12. On the figure below LM is parallel to PQ. Angle MLN = 30^0 and Angle NPQ = 70^0. Find the value of X^0 (3 marks)
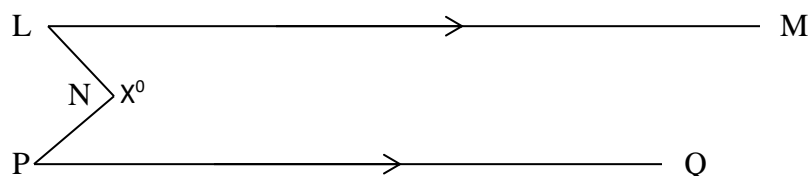
13. Complete the sketch below for the prism, ABCDEF (3 marks)
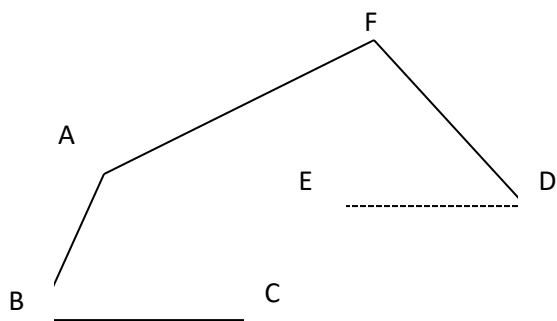
14. A Jua Kali artisan has 63000g of metal of density 7g/cm^3. He intends to use it to make a rectangular pipe with external dimensions 120mm by 150mm and internal dimensions of 100mm by 120mm. Calculate the length of the pipe in metres. (3 marks)

15. Jane and Mary started a business whereby contributed Ksh. 25000 and 20000 respectively. At the end of the year a profit of Ksh. 8100 was realized. From the profit funds for development, dividends and reserves were set aside in the ration 4:5:6 respectively. If the dividends were shared in the ration of their contribution, determine:
(a) The amount set aside for development (2 marks)

(b) The dividends Mary received (2 marks)

16. The figure below is a velocity time - graph for car

Time in seconds
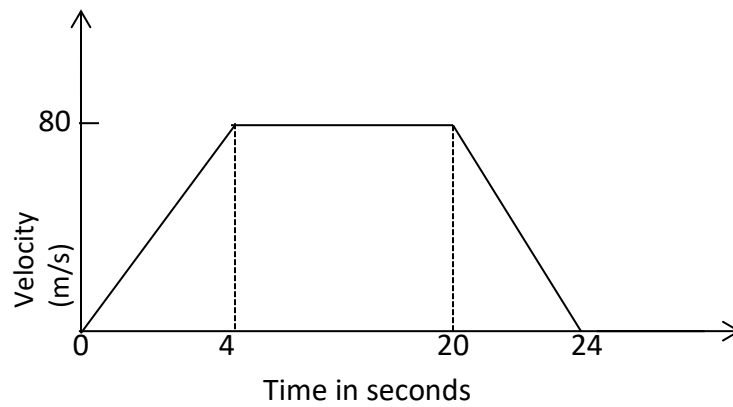
(a) Find total distance traveled by the car   (2 marks)

(b) Calculate the deceleration of the car.   (1 mark)

17. Five members of a self-supporting enterprise Peter, John, Esther, Brian and Caro were given a certain amount of money to share amongst themselves. Peter got 3/8 of the total amount while John got 2/5 of the remainder. The remaining amount was shared equally among Esther, Brian and Caro each of which received Ksh. 6,000;

(a) How much was shared among the five business women? (3 marks)

(b) How much did John get? (2 marks)

(c) Peter, John and Caro invested their money and earned a profit of Ksh. 12,000. A third of the profit was left to maintain the business and the rest was shared according to their investments. Find how much each got. (5 marks)

18. (a) On the grid provided draw the square whose vertices are A(6, -2), B(7, -2), C(7, -1) and D(6, -1)   (1 mark)
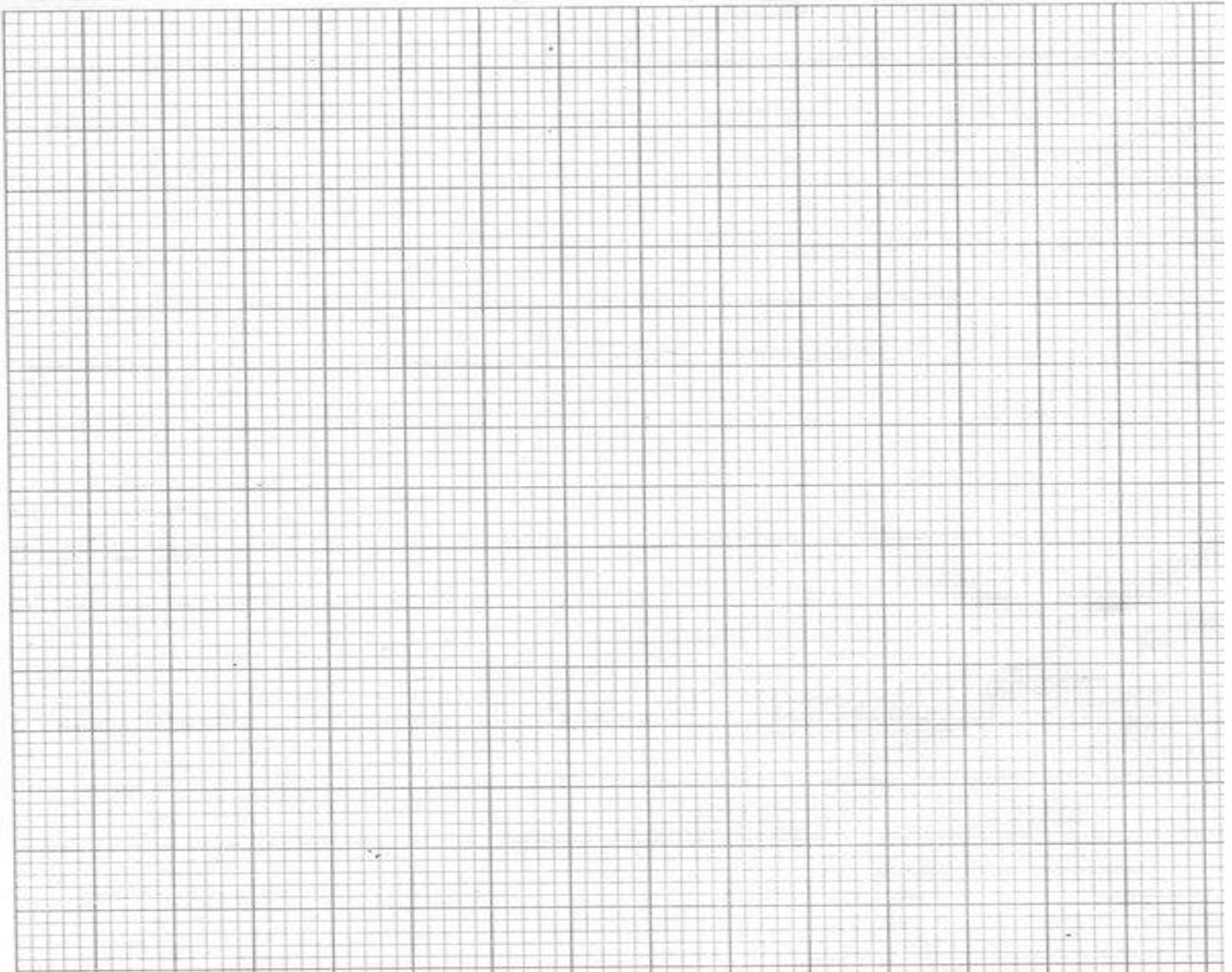
(b) On the same grid draw
  (i) $A^1B^1C^1D^1$ the image of ABCD, under an enlargement scale factor 3, Centre (9, -4) (3 marks)
  (ii) $A^{11}B^{11}C^{11}D^{11}$, the image $A^1B^1C^1D^1$ under a reflection in the line x = 0 (2 marks)
  (iii) $A^{111}B^{111}C^{111}D^{111}$, the image of $A^{11}B^{11}C^{11}D^{11}$ under a rotation of $+90^0$ about the origin.   (2 marks)

(c) Describe a single transformation that maps $A^1B^1C^1D^1$ onto $A^{111}B^{111}C^{111}D^{111}$. (2 marks)

19. The figure below shows a solid made up of a conical frustum and a hemispherical top. The dimensions are as indicated.

r = 3.5 cm

l = 8 cm

h cm
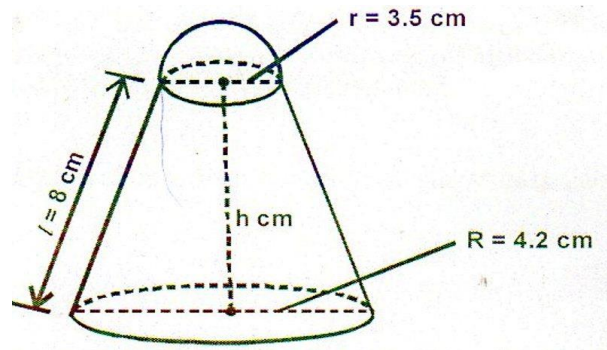
R = 4.2 cm

The top radius r = 3.5cm, bottom radius R = 4.2cm, slant height l = 8cm and the height of the frustum part is h cm.

(a) Find the surface area of the solid (Take $\pi = {}^{22}/_7$)   (5 marks)

(b) If a similar solid has a total surface area of 81.51cm², determine the radius of its base, to the nearest whole number   (1 mark)

(c) (i) Find the height h of the frustum.   (1 mark)

(ii) Hence determine the volume of the solid   (3 marks)

20. Two towns A and B are 80km apart. Juma started cycling from town A to town B at 10.00am at an average speed of 40km/h. Mutuku started his journey from town B to town A at 10.30am and traveled by car at an average speed of 60km/h
Calculate:
(i) The distance from town A when Juma and Mutuku met   (5 marks)

(ii) The time of the day when the two met   (2 marks)

(b) Kamau started cycling from town A to town B at 10.20am. He met Mutuku at the same
    time as Juma did. Determine Kamau's average speed.   (3 marks)

21.   The following data shows the sample of age distribution of the people who reside in a
      certain village in years, in Nandi County

Age group	Frequency
1 ……………….5	4
6 ………………10	8

11 ……………. .20	8
21 …………..30	6
31 …………..50	40
51 …………..55	3
56 …………….65	3

(a) Complete the histogram of the given data below   (6 marks)

Age (Years)
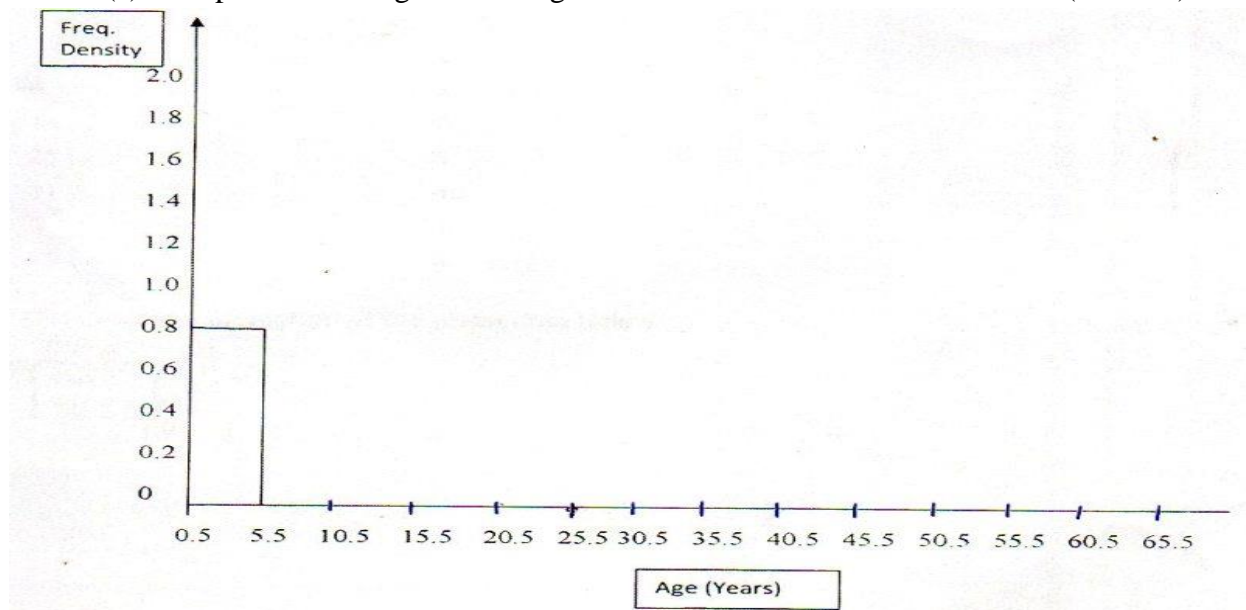
(b) Calculate the mean age of the given sample in the village   (4 marks)

22. The figure below shows two circles ABPQ and ABSR intersecting at A and B. PBS, QART and ABU are straight lines. The line UST is a tangent to the circle ABSR at S. Angle BPQ = 80^0, angle PBU = 115^0 and angle BUS = 70^0
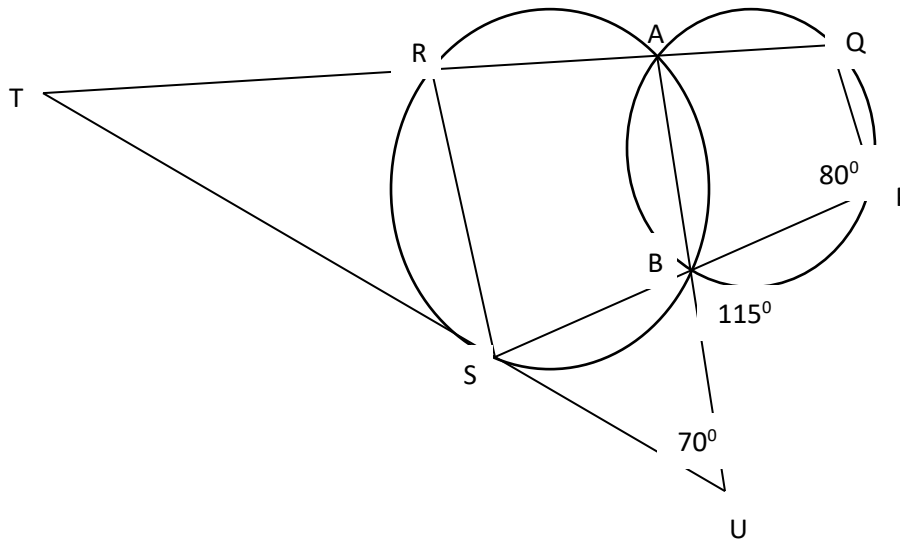
Find the values of the following angles, stating your reasons in each case.

(a) <BAR   (2 marks)

(b) <STR   (2 marks)

(c) <BSU   (2 marks)

(d) <BRS   (2 marks)

(e) <SBU   (2 marks)

23. Using a pair of compasses and ruler only,

(a) Construct triangle XYZ such that XY = 8cm, YZ = 6cm and angle XYZ = 30^0

(3 marks)

(b) Measure the length of XZ   (1 mark)

(c) Draw a circle that touches the vertices X, Y and Z.   (2 marks)

(d) Measure the radius of the circle   (1 mark)

(e) Calculate the area of the circle outside the trangle to 2 d.p.   (3 marks)

24. The function $y = x^3 + x^2 - 3x + 2$ represents a curve.
   a) Find the gradient function of the curve   (1 mark)

   b) Find the turning points of the curve and distinguish between them.   (6 marks)

   c) Hence sketch the curve $y = x^3 + x^2 - 3x + 2$ (3 marks)

MID TERM 2 EXAM
MATHEMATICS (QUESTION PAPER)
FORM 4
TIME 2½ HOURS
PAPER 2

Name……………………………………………………………… Adm No……………………………….

School…………………………………………………………… Class…………………………………….

Signature………………………………………………………… Date……………………………………

Instructions to Candidates

(a) Write your name, admission number and class 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 any **five** questions from **Section II**

(e) **Show all the steps in your calculations, giving your answers at each stage in the spaces provided 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.

(h) **This paper consists of 14 printed pages.**

(i) **Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.**

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

1. A quadratic equation has roots as $x = -4$ and $x = \frac{2}{3}$. Write the equation in the form $ax^2 + bx + c = 0$, where a, b and c are integers. (3 marks)

2. Given that $2 \leq p \leq 8$ and $3 \leq q \leq 10$, find the maximum value of: (2 marks)
$$\frac{p - q}{q + p}$$

3. Without using a mathematical table or a calculator, write the expression below in the form $a\sqrt{3} + c$, where a and c are constants (3 marks)
$$\frac{2}{\sin 90^0 + \tan 60^0}$$

4. Solve for x in the equation $\log_2(x - 3) + 2 = \log_2(8 - x)$ (3 marks)

5. A truck is bought at Kshs. 1,800,000. It depreciates by 10% per annum in the first 2 years, thereafter its annual depreciation rate is 15%. Find the value of the truck after 5 years. (4 marks)

6. The position vectors of points A and B are $4\boldsymbol{i} - 5\boldsymbol{j} + 6\boldsymbol{k}$ and $-2\boldsymbol{i} + 3\boldsymbol{j} + 8\boldsymbol{k}$ respectively. Calculate the magnitude of $\boldsymbol{AB}$ correct to 3 decimal places. (3 marks)

7. The figure below shows the velocity-time graph of a particle that moves for 60 seconds and covered a distance of 852 metres.
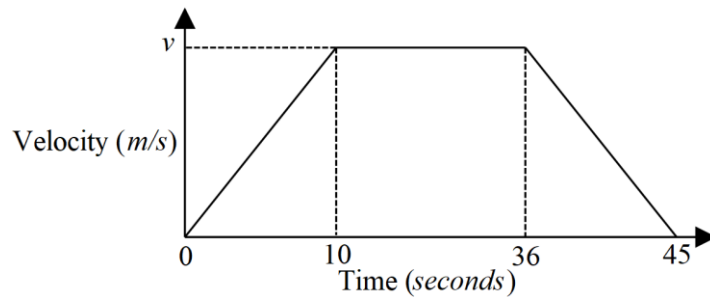
Calculate the value of v (2 marks)

8. Make x the subject of the formula: (3 marks)

$$px = \sqrt{x^2 + \frac{m}{Q}}$$

9. The equation of a circle is $x^2 + y^2 + 6x - 10y - 2 = 0$. Determine the co-ordinates of the centre and the area of the circle in terms of π (3 marks)

10. (a) Expand $(1 + 3x)^6$ in ascending powers of x up to the term in x^3 (1 mark)

    (b) Use your expansion to evaluate $(0.997)^6$ correct to 5 decimal places.   (2 marks)

11. (a) Complete the table below for the function $y = x^2 - 4x + 5$ for $1 \leq x \leq 5$ (1 mark)

y	1	1.5	2	2.5	3	3.5	4	4.5	5
x	2				2		5		

(b) Use the mid-ordinate rule with 4 strips to find the area bound by the function, the x-axis and the lines $x = 1$ and $x = 5$. (2 marks)

12. A town T lies on latitude 37^0N and longitude 50^0E. An airport is located on another town R whose longitude is 10^0W on the same latitude as T. An aeroplane leaves town T and flies westwards to R. Calculate the distance covered by the plane in km. (Take R = 6370km and $\pi = \frac{22}{7}$) (3 marks)

13. The diagram below shows a plot of land. Shade the region R enclosed under the following conditions:
(i)   CR ≥ 1.5 cm

(ii)   R is more than 2 cm from line AB

(iii)   ∠CRA ≥ ∠CRB

(iv)   R is nearer to CB than CA
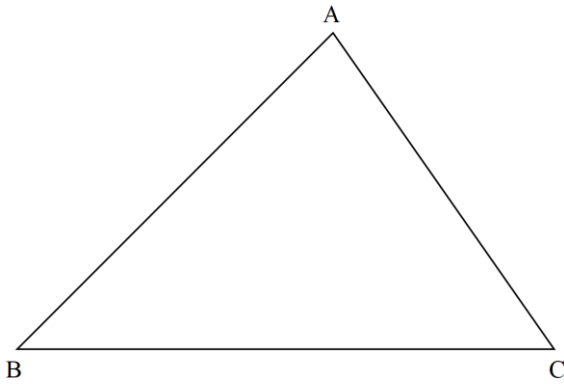
By construction and using a scale of 1 cm to represent 10 metres, shade the region where the borehole lies.

(5 marks)

14. In the figure below, O is the centre of the circle. AB is a tangent to the circle at C. AD=17cm and AO=24cm
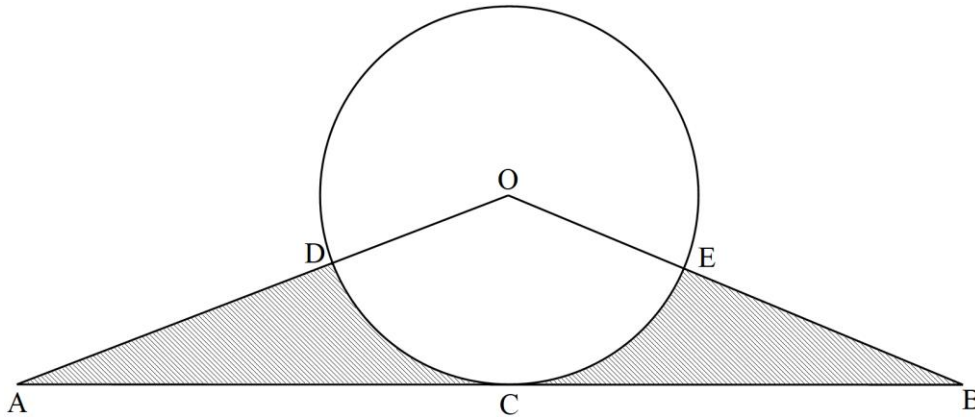
Calculate the shaded area correct to 4 significant figures.   (4 marks)

15. A trader makes two types of chairs; ordinary and special. The cost of each ordinary chair is Kshs. 300 while the cost of a special chair is Kshs. 700. He is prepared to spend not more than Kshs. 21, 000. It is not viable for him to make less than 20 chairs. Ordinary chairs must be less than twice the special chairs but more than 15. By taking the number of ordinary chairs as x and the special chairs as y; Write down all the inequalities representing the above information.   (4 marks)

16. A construction firm has two tractors; P and Q. tractor P completes a job in 4 days while tractor Q completes the work in 6 days. The two tractors start working together and after 2 days, tractor P breaks down. How long does it take Q to complete the remaining work?   (3 marks)

17. The graph below shows a triangle ABC with vertices $A(2, -1), B(4, -1)$ and $C(3, 2)$

   (a) $\Delta A'B'C'$ is the image of ΔABC under a transformation given by the matrix $\begin{pmatrix} 1 & 2 \\ 0 & 1 \end{pmatrix}$. Determine the coordinates of A', B' and C' (2 marks)

   (b) On the grid provided draw $\Delta A'B'C'$ and describe the transformation fully (3 marks)
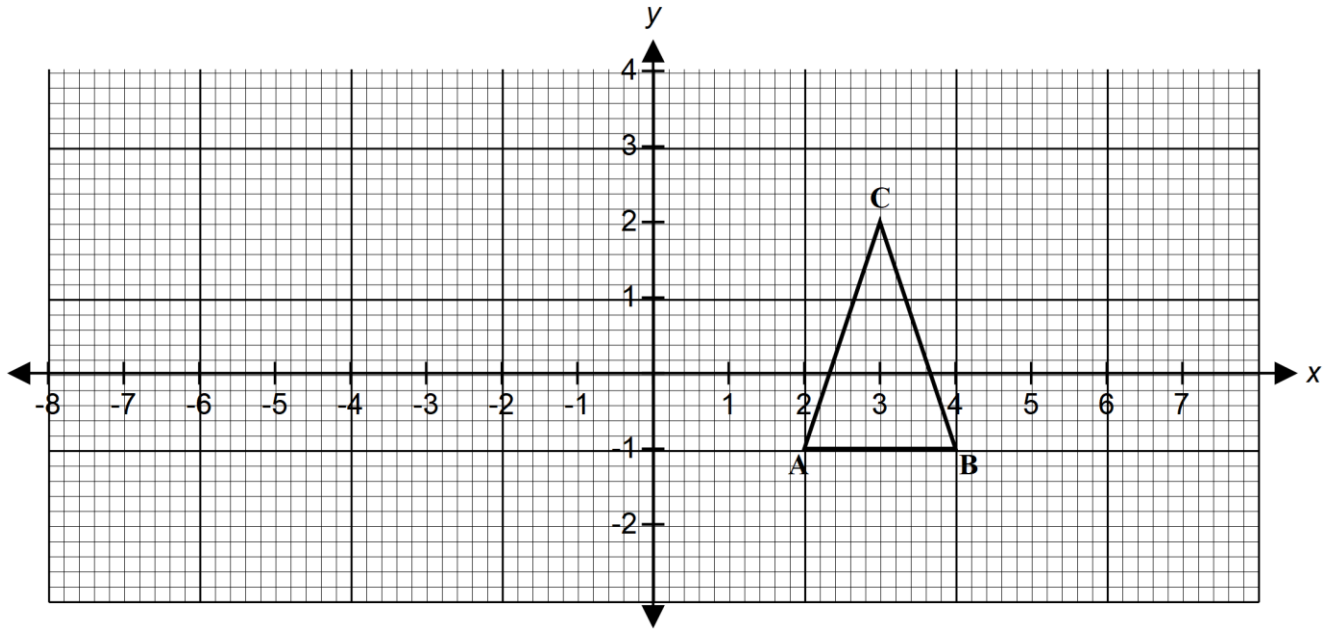
   (c) $\Delta A''B''C''$ is the image of $\Delta A'B'C'$ under a reflection along the line $y = 0$. Draw $\Delta A''B''C''$ on the same pair of axes and state its coordinates (2 marks)

   (d) Determine the matrix representing a single transformation that maps ΔABC onto $\Delta A''B''C''$ (3 marks)

18. (a) Write down the first three terms of the sequence whose n^{th} term is given by $T_n = 5n - 2$ (1 mark)

(b) The third and the sixth terms of a geometric sequence are 18 and 486 respectively. Find the first term and the common ratio of the sequence. (3 marks)

(c) The first and the last terms of an arithmetic progression are 8 and -190 respectively. If the sum of the first n terms of this arithmetic progression is -3094, find the number of terms in the progression (2 marks)

(d) The second, fourth and seventh terms of an arithmetic progression are the first three terms of a geometric progression. Find the common ratio of the geometric progression if the first term of the arithmetic progression is 2 (4 marks)

19. (a) Three variables P, Q and R are such that P varies partly as the square of Q and partly inversely as the square root of R. Determine:

(i) The relationship between P, Q and R given that when $P = 11\frac{1}{3}, Q = 2$ and $R = 9$ and also when $P = 14.75, Q = 5$ and $R = 64$ (4 marks)

(ii) Q when $P = 145\frac{11}{18}$ and $R = 1.44$ (2 marks)

(b) Four quantities A, B, C and D are such that A varies jointly with B, the square root of C and inversely as the square of D. Find the percentage change in A if B increases by 21%, C decreases by 36% and D increases by 10% (4 marks)

20. A particle moves along a straight line such that its displacement S metres from a given point $S = t^3 - 5t^2 + 4$ where t is time in seconds. Calculate:

(a) The displacement of the particle at $t = 5$ (2 marks)

(b) The velocity of the particle when $t = 5$ (3 marks)

(c) The values of t when the particle is momentarily at rest   (3 marks)

(d) The acceleration of the particle $t = 2$ (2 marks)

21. The figure below shows a right pyramid standing on a rectangular base ABCD. AB=8 cm, BC=15 cm and each slant edge is 12 cm long. N is the midpoint of BC
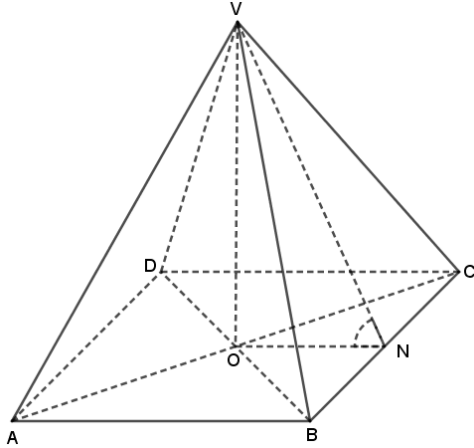
Calculate to two decimal places

(a) The vertical height of the pyramid (3 marks)

(b) The volume of the pyramid. (1 mark)

(c) The obtuse angle between the planes VBC and VAD of the pyramid (4 marks)

(d) The angle between line VD and the base (2 marks)

22. (a) Complete the table below giving the values correct to 2 decimal places. (2 marks)

x	0^0	30^0	60^0	90^0	120^0	150^0	180^0	210^0	240^0	270^0	300^0	330^0	360^0
$y = \sin(x + 30^0)$	0.50			0.87		0.00		-0.87			-0.50		0.50
$y = 2\cos(x + 30^0)$	1.73		0.00		-1.73		-1.73		0.00			2.00	1.73

(b) On the same set of axes, draw the graphs of $y = \sin(x + 30^0)$ and $y = 2\cos(x + 30^0)$ for $0^0 \le x \le 360^0$. Use the scales x-axis; 1 cm to represent 30^0 and y-axis; 2 cm to represent 1 unit. (5 marks)
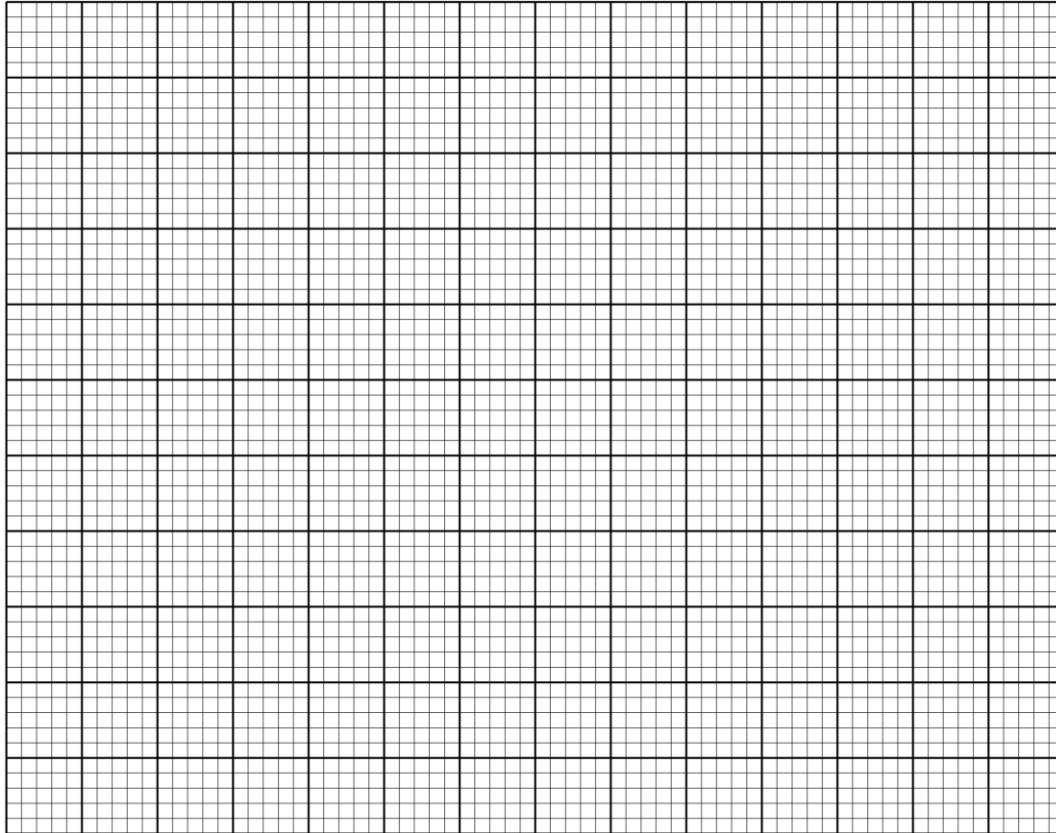
(a) Use you graphs to solve the equation $2\cos(x + 30^0) - \sin(x + 30^0) = 0$ (2 marks)

(b) State the amplitude of $y = 2\cos(x + 30^0)$ (1 mark)

23. A triangle OPQ, R and S are points on **OP** and **OQ** respectively, such that **OR**: **RP** = 2: 3 and **OS**: **SQ** = 2: 1. **PS** and **QR** intersect at T. Given that **OP** = **p** and **OQ** = **q**.

(a) Express in terms **p** and **q**

    (i)   **QR**   (1 mark)

    (ii)   **PS**   (1 mark)

(b) Given that $QT = hQR$ and $PT = kPS$, express OT in terms of

    (i) $h, \boldsymbol{p}$ and $\boldsymbol{q}$ (2 marks)

    (ii) $k, \boldsymbol{p}$ and $\boldsymbol{q}$ (2 marks)

(c) Find the values of h and k (4 marks)

24. The test scores obtained by 40 students were recorded as shown in the table below

Marks	No. of Students
61 – 65	4
66 – 70	5
71 – 75	9
76 – 80	8
81 – 85	8
86 – 90	6

(a) Using a working mean of 73, calculate

    (i)   the mean mark   (4 marks)

    (ii) the standard deviation   (3 marks)

(b) (i) On the grid provided, draw an ogive to represent the information in the table   (3 marks)
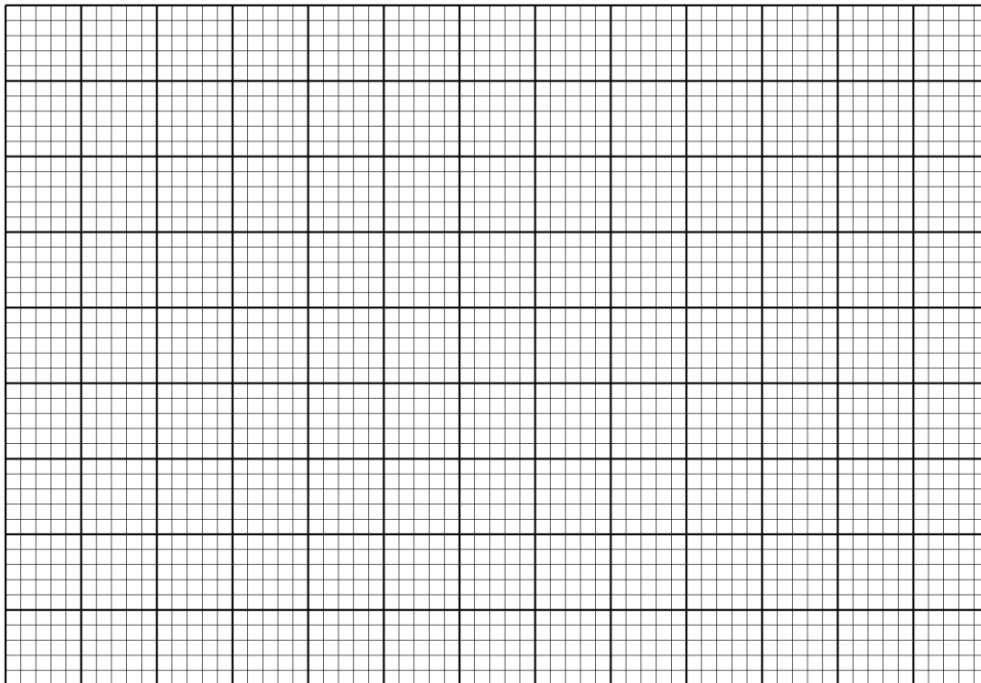
    (ii) Us the ogive to estimate the marks scored by the 25th student.   (1 mark)

Name: ……………………………………………. **Adm No**: ……………….

School: …………………………………………... **Class**: …………………..

Signature: ……………………………………….. **Date**: ……… …..

Instruction to candidates

- This paper consists of two sections: **A** and **B**
- Answer all questions in section **A** and **B** in the spaces provided
- All workings **must** be clearly shown, and Use the **CONSTANTS** given.
  - ✓ **Gravitational acceleration, 'g' = 10m/s^2**
  - ✓ **Atmospheric pressure = 76mmHg**
  - ✓ **density of water = 1000kg/m^3**
  - ✓ **density of mercury = 13600kg/m^3**
- Silent, non-programmable calculator may be used

FOR EXAMINER'S USE ONLY:

QUESTION	MARKS	CANDIDATES' SCORE
1-12	25	
13	13	
14	14	
15	15	
16	13	
TOTAL	80	

SECTION A (25 MARKS)

1. Distinguish between density and relative density of a substance   (1 mark)

2. Figure 1, below shows a wire loop with a string that has been dipped into soap solution.

   X

   Y

   — Soap film

   — String

   — Wire-loop
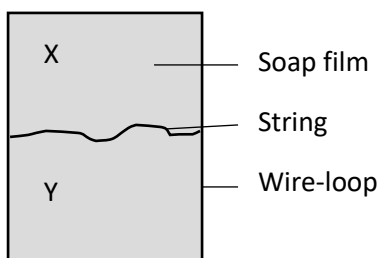
   Figure 1

   (i) On the space alongside figure 1, Sketch a similar diagram to show the observed effect if the soap film is punctured at X   (1 mark)

   (ii) Explain the observations made in **(i)** above   (2 marks)

3. State **two** reasons why gas particles diffuse faster than liquid particles   (2 marks)

4. A ball-bearing of mass 0.250 kg is held between the anvil and spindle of a micrometer screw gauge as shown in figure 2. The reading on the gauge when the jaws are closed without anything in between is 0.011cm. Use this information to answer the questions **(a)** and **(b)** below:
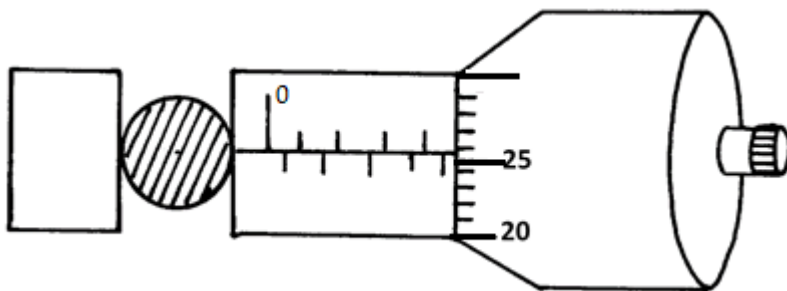
Figure 2

(a) What is the diameter of the ball bearing? (2 marks)

(b) Determine the density of the ball bearing (3 marks)

5. The diagram in figure 3, shows a system in equilibrium and at room temperature.

Light material

Air balloon

Small mass
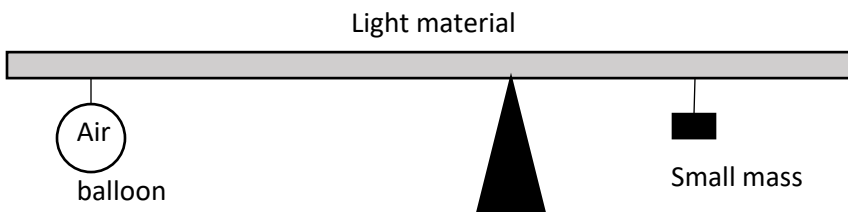
Figure 3

State and explain what is observed when the temperature of the room is raised by 25^0c.

(2 marks)

6. *Figure 4,* shows two glass tubes of different diameters, dipped in a glass beaker half full of water
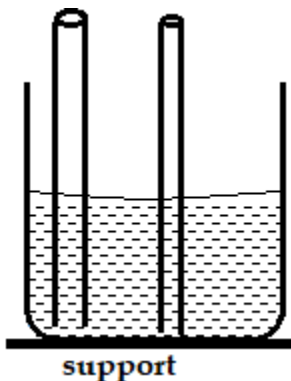
Figure 4

Complete the diagram to show how water will rise up in the two glass tubes   (1 mark)

7. State the conditions necessary for the law of conservation of linear momentum to hold
                                                                                          (1 mark)

8. The diagram in *figure 5,* below shows a steel ball bearing gently falling down through a viscous liquid contained in a tall cylinder
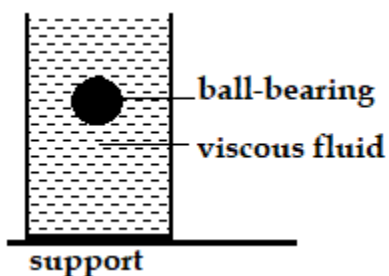
Figure 5

Label on the diagram (giving direction), the forces acting on the ball bearing as it moves down the cylinder   (3 marks)

9. A string vest keeps a person warm though it is a collection of holes bounded by strings. Explain   (2marks)

10. The figure 6, below represents a bimetallic strip of metals **X** and **Y** at room temperature (a) and when dipped into crushed ice (b) respectively. Sketch a diagram in the space alongside, to show the shape when the strip is heated to a temperature above the room temperature (1 mark)
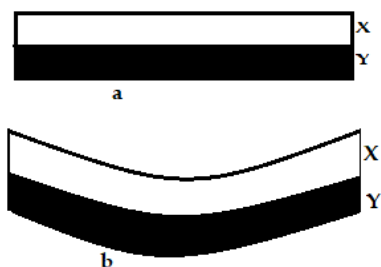
Figure 6

11. Figure 7, below shows the cross-section of an aero-foil, with the aero-plane moving in the direction shown by the arrow.
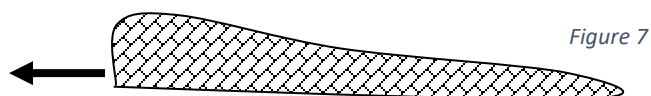
Figure 7

Using a sketch of the streamlines showing how air flows past the wing as the aero-plane moves, explain how the aero-plane achieves the dynamic lift (3 marks)

12. The diagram in figure 8, below shows a ball being whirled in a vertical plane at a uniform speed of 20m/s. If the maximum tension on the string is exceeded, suggest, by drawing on the diagram, the path which is likely to be taken by the ball. (1 mark)
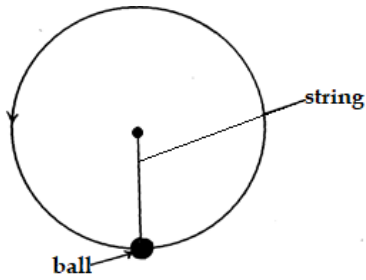
Figure 8

SECTION B (55 MARKS)

13. The diagram below represents a u-shaped glass tube sealed at one end and containing mercury.
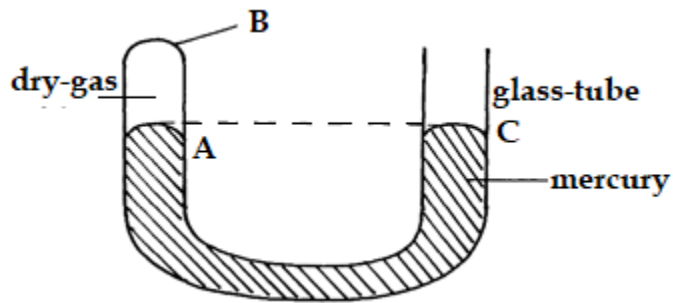
Figure 9

(a) Determine the pressure (in N/m²) of the dry gas as shown in the diagram above

(2 marks)

(b) Explain why the gas should be dry if it is to be used to verify a gas law (1 mark)

(c) Describe how the arrangement can be used to verify Boyle's law. (4 marks)

(d) Using the kinetic theory of gases, explain why the pressure of a gas increases with temperature increase (3 marks)

(e) Figure 10 below shows a measuring cylinder of height 30cm filled to a height of 20cm with water and the rest occupied by kerosene.
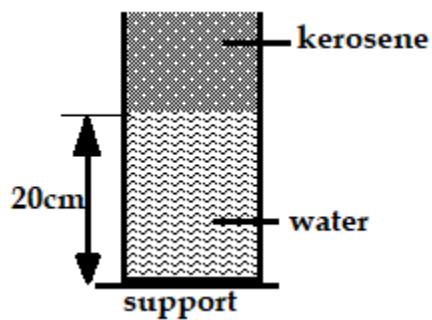
Figure 10

Given that density of water = 1000Kgm^{-3}, density of kerosene = 800Kgm^{-3} and atmospheric pressure = 1.03x10^5 Pascal, determine the total pressure acting on the base of the container (3 marks)

14.
(a) Distinguish between uniform velocity and instantaneous velocity (1 mark)

(b) The velocity-time graph in the figure 11, below illustrates the motion of a ball which has been projected vertically upwards from the surface of the moon. The weight of the object on earth's surface is 20N.
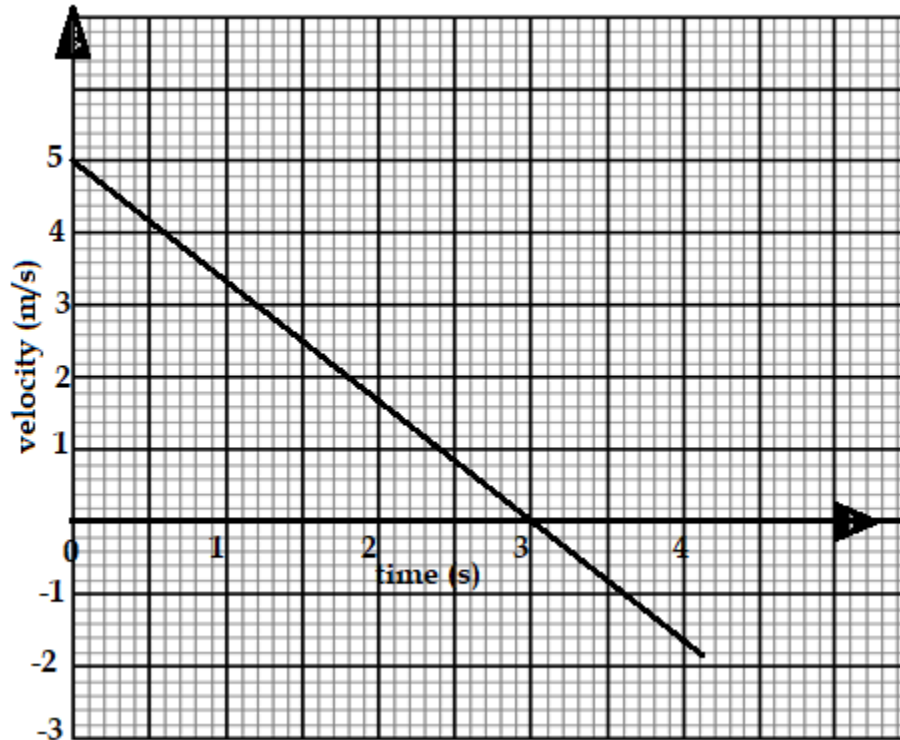
Figure 11

i.   State why the velocity becomes negative after 3seconds.   (1 mark)

ii. Determine the acceleration of gravity on the moon showing clearly your work (3 marks)

iii. Determine the total distance travelled by the ball in 4.0seconds   (3 marks)

iv.   Find the weight of the ball on the moon   (2 marks)

(c) A body starts from rest and attains a velocity of 10m/s after 4 seconds. Use the axes
     provided below to represent this motion   (2 marks)
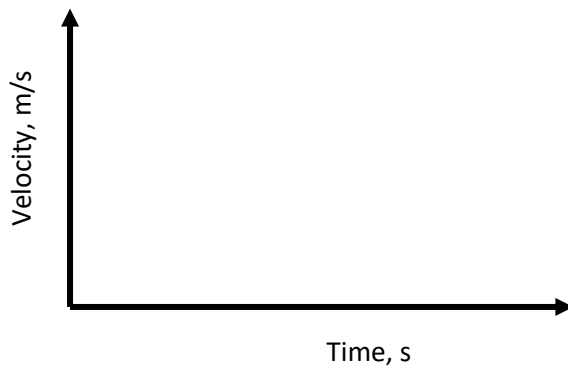
Figure 12

(d) Define angular velocity and state its SI unit   (2 marks)

15.

(a) Define the term "velocity ratio" as used in the working of machines   (1 mark)

(b) A civil engineer wanted to raise sand from the ground to the third floor of a house he was working on. He began by assembling the following pulley system in figure 13.

support
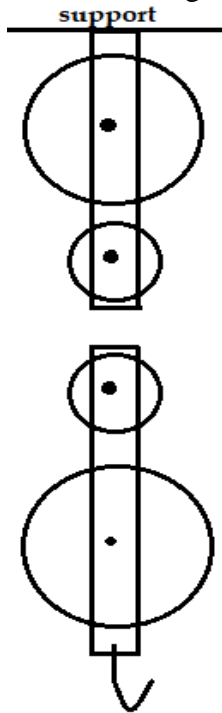
i. Complete the diagram in figure 13, by threading the pulley so that it can be used to raise the load **L** by applying an effort **E** from the third floor.

(2 marks)

ii. The pulley system has a mechanical advantage of 3. Calculate the total work done when a load of 600N is raised through a height of 9m

(3 marks)

Figure 13

(c) On the axes provided, sketch a graph of mechanical advantage against load for the pulley system (2 mark)

(d) The graph below shows the potential energy against displacements for a body of mass 80g.
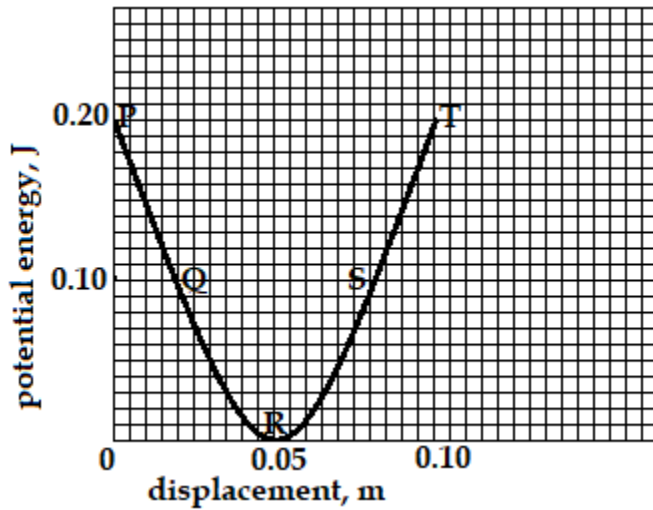
Figure 14

The body oscillates about point **R**. Calculate the velocity of the body at:

i. **P and T**   (3 marks)

ii. **Q and S**   (2 marks)

iii. at **R**   (2 marks)

16.

   (a) State Archimedes' principle   (1 mark)

   (b) A rectangular brick of mass 10kg is suspended from the lower end of a spring balance and gradually lowered into water until its upper end is some distance below the surface.
     i.   State and explain the changes observed in the reading of the spring balance during the process

                                                      (2 marks)

     ii.   If the spring reads 80N when the brick is totally immersed, determine the volume of the brick.   (3 marks)

   (c) The figure below shows a hydrometer.
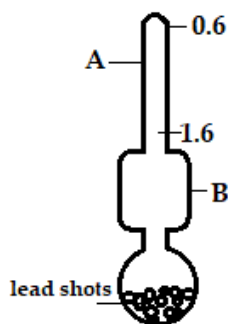
Figure 15

  i.   Identify the parts labelled A and B   (2 marks)

     A …………………………………………………………………………………

     B …………………………………………………………………………………

ii.   Explain why the bulb should be made wide   (2 marks)

iii.   State the function of the lead-shots   (1 mark)

(d) The diagram, *figure 16,* shows a block of wood floating on water in a beaker. The set-up is at room temperature before the Bunsen burner is lit. State and explain the changes that are likely to occur in depth **X** when the Bunsen burner is lit.   (2 marks)
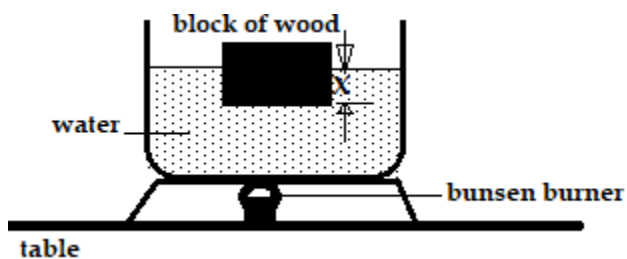
Figure 16

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MID TERM 2 EXAM
PHYSICS (232/2)
FORM FOUR (4)
PAPER 2
Time: 2 Hours

Name: …………………………………………………. **Adm No**: ……………….

School: …………………………………………….. **Class**: …………………..

Signature: …………………………………………..**Date**: ……… …..

Instructions to candidates

 (a) Write your name, index number in the spaces provided above.
(b) Sign and write the date of the examination in the spaces provided
(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.
(f) KNEC mathematical tables and silent non-programmable electronic calculators may be used.
(g) This paper consists of 13 printed pages
**(h) Candidates should check the question paper to ascertain that all the pages are printed as indicated
    and that no questions are missing**
(i) Candidates should answer the questions in English

For examiners use only

Section	Question	Maximum score	Candidates score
A	1-15	25	
B	16	11	
	17	11	
	18	10	
	19	11	
	20	12	
TOTAL SCORE		80	

Section A (25 marks)

1. The fig. 1 below shows a voltmeter before and after use to take the emf of a cell.

(a)   (b)
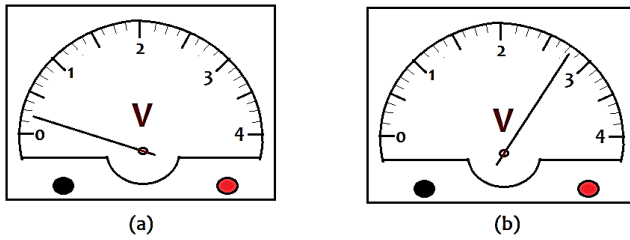
Record the value of emf of the cell.   (2 marks)

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

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

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

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

Radio wave	A	B	Visible light	C	D	Gamma Rays

(i) Name the radiation represented by **C**.   (1 mark)

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

(ii) Name a device that can be used to detect radiation **A**.   (1 mark)

…………………………………………………………………………………………………

3. Figure 2 below shows a set-up of a simple cell.
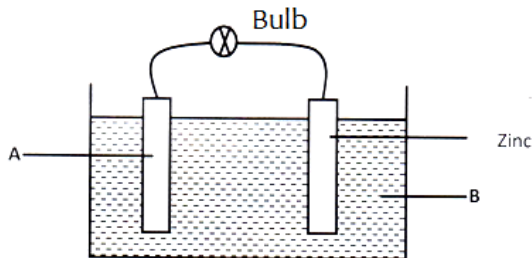
(a) Name the material used in part A   (1 marks)

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

(b) Name the electrolyte B.   (1 mark)

……

4. The fig. 3 below shows a ray incident to a concave lens.
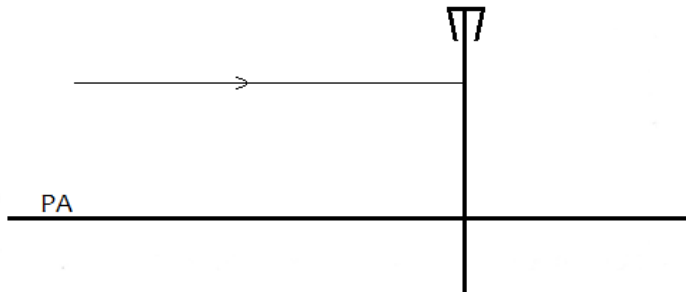
Draw on the diagram to show the resulting ray. (1mark)

5. The figure 4 below shows a magnet and a solenoid in relative motion.
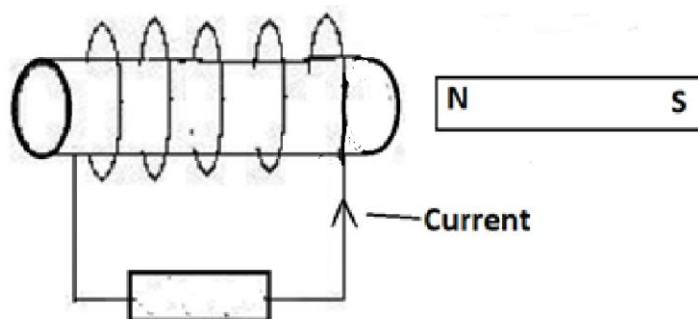
If the current shown was induced current indicate the motion of the magnet. (1mark)

6. Figure 5 represents a displacement – time graph for a wave.
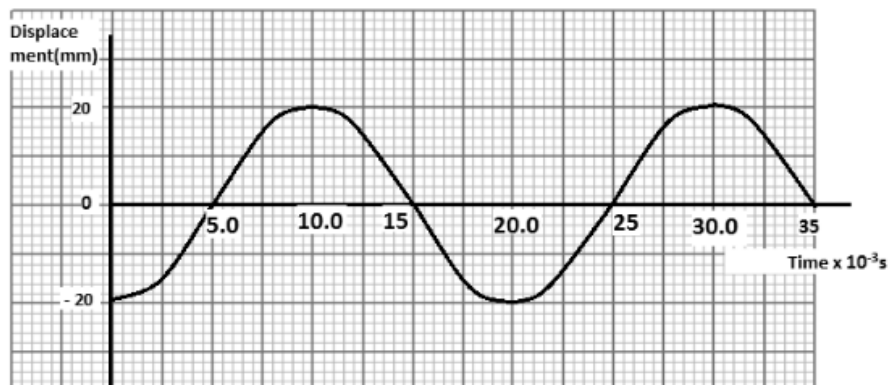
Determined the frequency of the wave. (2marks)

....

....

7. State the reasons for the following in the filament bulb:
    a) Inside is filled with inert gas at low pressure.   (1 mark)

    ....

    b) The filament is coiled.   (1 mark)

    ....

8. A girl standing at a distance claps her hands and hears an echo from a tall building 2 seconds
    later. If the speed of sound in air is 340m/s, determine how far the building is.   (3marks)

    ....

    ....

    ....

9. In an experiment to magnetize an iron bar by single stroke method, the graph below was plotted.
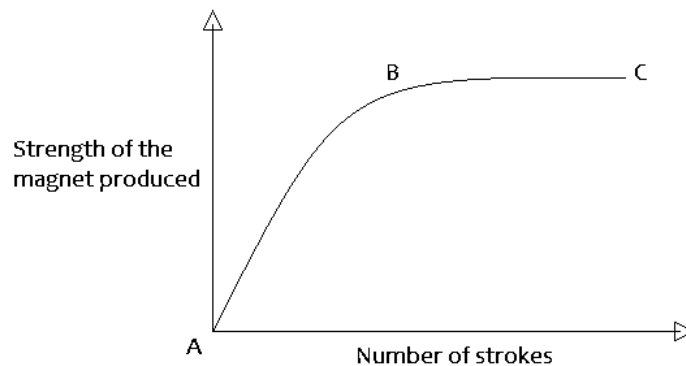
Explain what is happening between points AB and BC.   (2marks)
AB

....

BC

....

10. State two ways of confirming that an accumulator is fully charged. (2marks)

……

……

11. The fig. 6 below shows an electrical appliance with leads labelled Red, Black and Green.
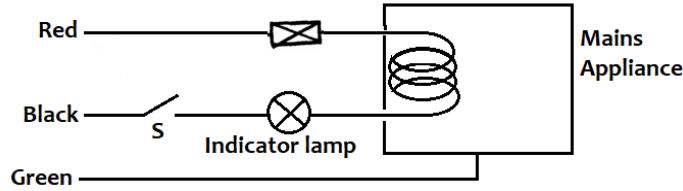
Identify one mistake in the connection. (1 mark)

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12. Figure 7 below shows a perfectly efficient transformer. The number of turns in the secondary coil S is six times that of the primary coil P.
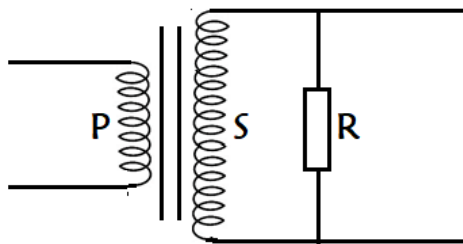
If a supply voltage of 4V d.c is connected across P, state with reason what happens to the voltage across R (2 marks).

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……

13. Explain what is meant by radioactive decay.   (1 mark)

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

14. A part from the field, state two ways of increasing the magnitude of current generated.
                                                                    (2 marks)

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

15. State one structural difference between a.c and d.c generators.   (1 mark)

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

Section B (55 marks)

16.   a. State one application of each of the following.   (2marks)

           i.   Convex mirror

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

           ii.   Parabolic mirror

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

    b. Fig. 9, which is drawn to a scale of 1:5, represents an object O and its image 'I' formed by a concave mirror.
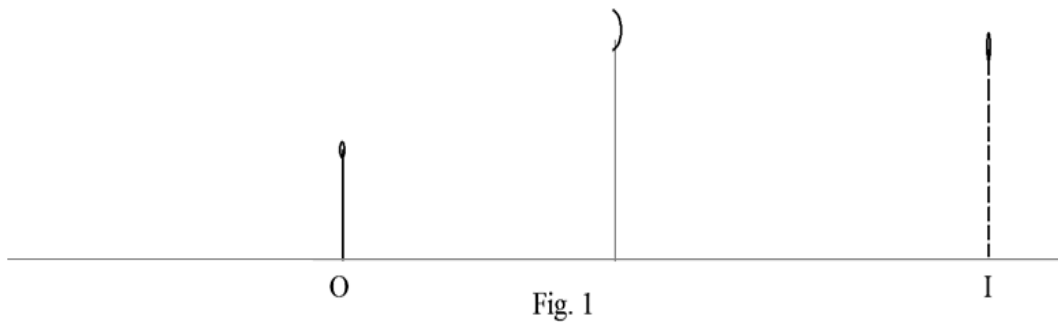
Fig. 1

        By drawing suitable rays, locate and mark on the figure the position of the principal focus 'F' of the mirror. Determine the focal length f.   (3 marks)

……

……

    c. The graph in Fig. 10 shows the variation of magnification, M with image distance, V for a concave mirror.
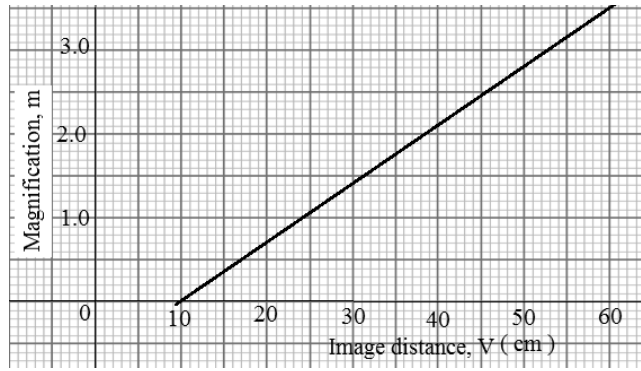
Determine:

I. The object position when the image position is 45cm. (3marks)

……

……

……

II. The focal length of the mirror. (1mark)

……

……

d) state two reasons why a concave mirror is used as a doctor's dental mirror. (2 marks)

……

……

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17. (a) State **two** factors that determine the capacitance of a parallel place capacitor. (2marks)

……

……

……

(c) A 5µF capacitor is charged to a potential difference of 200V and isolated. It is then connected to a 10µf capacitor.

Find ;
(i)   The resultant potential difference across the combination   (3marks)

………………………………………………………………………………………………………
………………………………………………………………………………………………………
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(ii)   Energy stored before connection   (3marks)

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

(iii)   Total energy in the capacitors after connection.   (2marks)

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(c)   Give two applications of capacitors   (2 marks)

………………………………………………………………………………………………………
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18.   a)   In an experiment to observe interference of light waves a double slit is placed close to the source. See figure 12
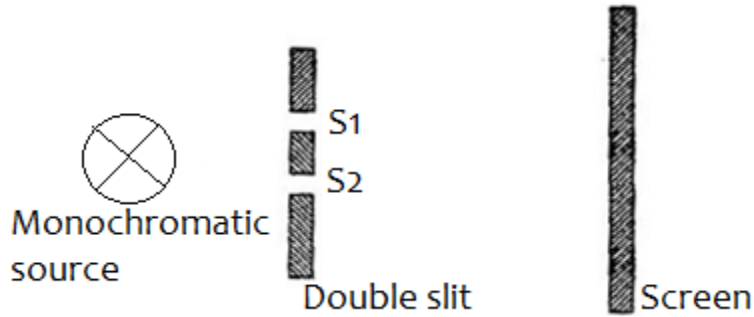
(i) What is a monochromatic source of light. (1 mark)

……
……

(ii) State the function of the double slit (1 mark)

……
……

(iii) Describe what is observed on the screen (1marks)

……
……
……

(iii) State what is observed on the screen when
I. The slit separation S_1S_2 is reduced (1 mark)

……
……

II. White light source is used in place of monochromatic source (1 mark)

....

....

b) During physics lesson, the teacher noticed that Joe had to sit behind in order to see the writings on the board clearly.

    I.   Name the eye defect experienced by Joe.   (1 mark)

....

    II. State one possible cause of the defect.   (1 mark)

....

....

    III.   On the diagram in fig 11 below, draw to show how the defect can be corrected by use of a lens.   (3 marks)
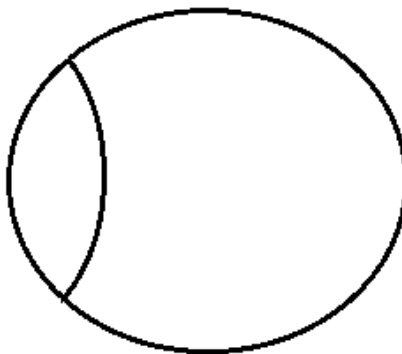
19. (a) Distinguish between an ohmic and non-ohmic conductors.   (1 mark)

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(b) Figure 16 shows a circuit with resistors and voltmeter connected to a battery
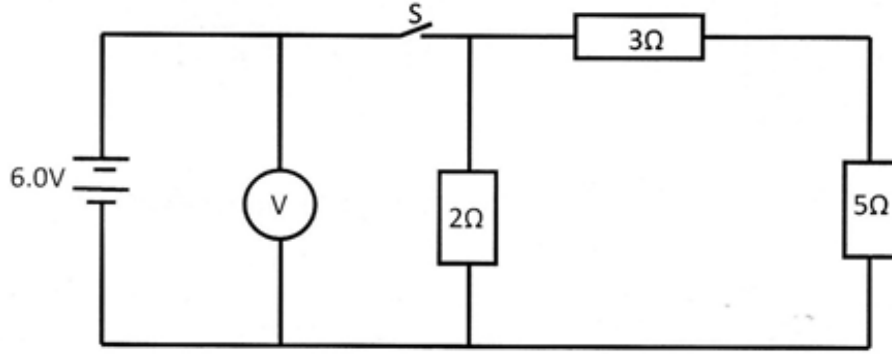
i). If each cell has an internal resistance of 0.7Ω, determine the total resistance in the circuit.
(3 marks)

....

....

....

ii). Calculate the value of current flowing through the 3Ω resistor when the switch is closed?
(2 marks)

....

....

....

iii). What is the reading of the voltmeter when the switch S is
  I.   Open   (1 mark)

....

  II.   Closed   (3 mark)

....

....

....

iv). Account for the difference between the answers in (I) and (II) above   (1 mark)

....

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....

20. (a) The figure below shows a waveform on a CRO screen: Given that the Y-gain control is set at 20 V/cm and the time-base set to 10 ms/ cm,
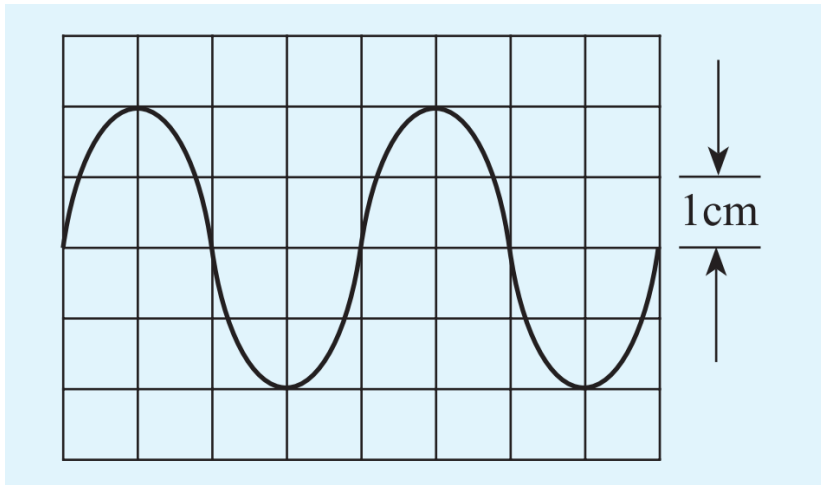
Calculate the:

(i)   Periodic time of the wave.   (2 marks)

....

....

....

(ii)   Frequency of the wave.   (2 marks)

....

....

....

(iii)   Peak voltage   (2 marks)

....

....

....

(b) Calculate the frequency of X-rays produced by an X-ray tube operating at 20 kV, assuming that no energy is dissipated as heat. (Planck's constant h = 6.63 x10⁻³⁴ Js, and the electronic charge is 1.6 x10⁻¹⁹ C)   (3 marks)

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(c) Calculate the energy of photons associated with radiation of frequency 4.8×10^{14} Hz, stating your answer in eV   (3 marks)

……

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THE LAST PRINTED PAGE

MID TERM 2 EXAM
PHYSICS (232/3)
CONFIDENTIAL REPORT
FORM FOUR (4)

Every candidate is expected to be provided with the following apparatus:
QUESTION ONE
You are provided with the following:

- Copper wire   (approximately 35 cm long and 1 mm thick)
- A retort-stand, boss and clamp
- An optical pin mounted on a cork
- A stop watch
- Wire cutters (to be shared)
- A metre-rule or half-metre rule
- A cylindrical container (approximate height of 20 cm)
- Some water
- A stop watch
- A metre ruler or half metre rule
- A boiling tube (approximate: diameter of 2.5 cm and height 15 cm)
- Some sand
- A rubber band

QUESTION TWO

- Constantan wire (of approximate 0.33mm thick) mounted on a mm scale
- Ammeter (0 – 1) A
- Voltmeter (0 –2.5) V
- A jockey
- 6 connecting wires with crocodile clips
- A switch
- A new dry cell and a cell holder
- Micrometer screw gauge (to be shared)
- Rectangular glass block (approximately 10cm by 6 cm by 2 cm)

- 3 optical pins

- A soft board.

- A plane paper

- 4 paper pins.

- Four tuck pins

- 30 cm ruler (to be provided by the candidates)

MID TERM 2 EXAM
PHYICS (232/3)
FORM FOUR (4)
PAPER 3 (PRACTICAL)
Time: 2 ½ Hours

Name: ……………………………………………………. **Adm No**: ……………….

School: ………………………………………………….. **Class**: …………………..

Signature: …………………………………………..**Date**: ……… …..

INSTRUCTIONS TO CANDIDATES

a) Answer all questions in the spaces provided in the question paper.
b) You are supposed to spend the first 15 minutes reading the whole paper carefully before commencing your work.
c) Candidates are advised to record their observations as soon as they are made.
d) Marks are given for observation actually made, their suitability, accuracy and the use made of them.

FOR EXAMINER'S USE ONLY

QUESTION	MAXIMUM SCORE	CANDIDATE'S SCORE
1	20	
2	20	
TOTAL	**40**	

This paper consists of 9 printed pages. Candidates should check the question paper to ensure that all the pages are printed as indicated and no questions are missing.

Contact Kenya Educators 0768321553/0795491185 for Marking Schemes

QUESTION ONE

PART A

You are provided with the following:

- Copper wire
- A retort-stand, boss and clamp
- An optical pin mounted on a cork
- A stop watch
- Wire cutters (to be shared)
- A metre-rule or half-metre rule

(a) Clamp the cork so that the optical pin is horizontal. Hang the copper wire from the pin by the loop as shown in figure 1. Ensure the wire is straight and the length X between the lower tip and the optical pin is 32 cm. If the length exceeds 32 cm reduce by cutting at the lower tip using the wire cutters provided.
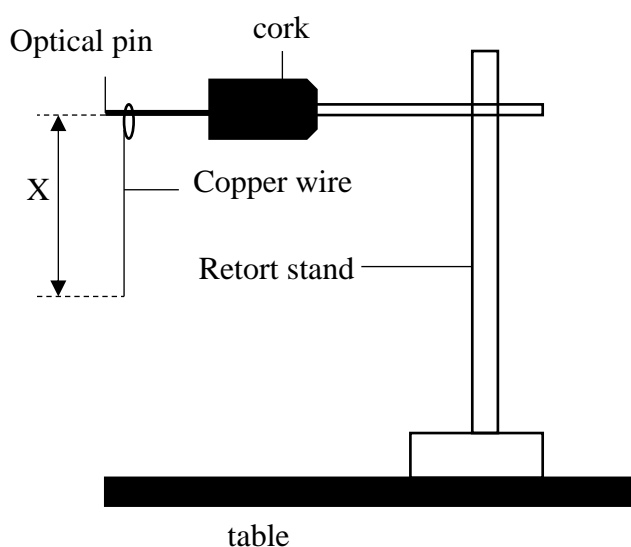
Figure 1

(b) Displace the lower tip of the wire slightly in a plane perpendicular to the optical pin and then release it. Measure the time t for 20 oscillations of the wire and record the value in table.

(c) Repeat the procedure in (b) above for other values of X shown in the table. (Note that each length X is obtained by cutting off an appropriate length from the lower tip of the wire. For example, to get X= 28cm cut off 4 cm from the lower end). Complete the table. (6 marks)

Table 1

Length X (cm)	32	28	24	20	16	12
Time t for 20 oscillations (S)						
Period (T = $\frac{t}{20}$ (S)						
T^2 (S^2)						

(d) Plot a graph of T^2 (y- axis) against X   (5 marks)
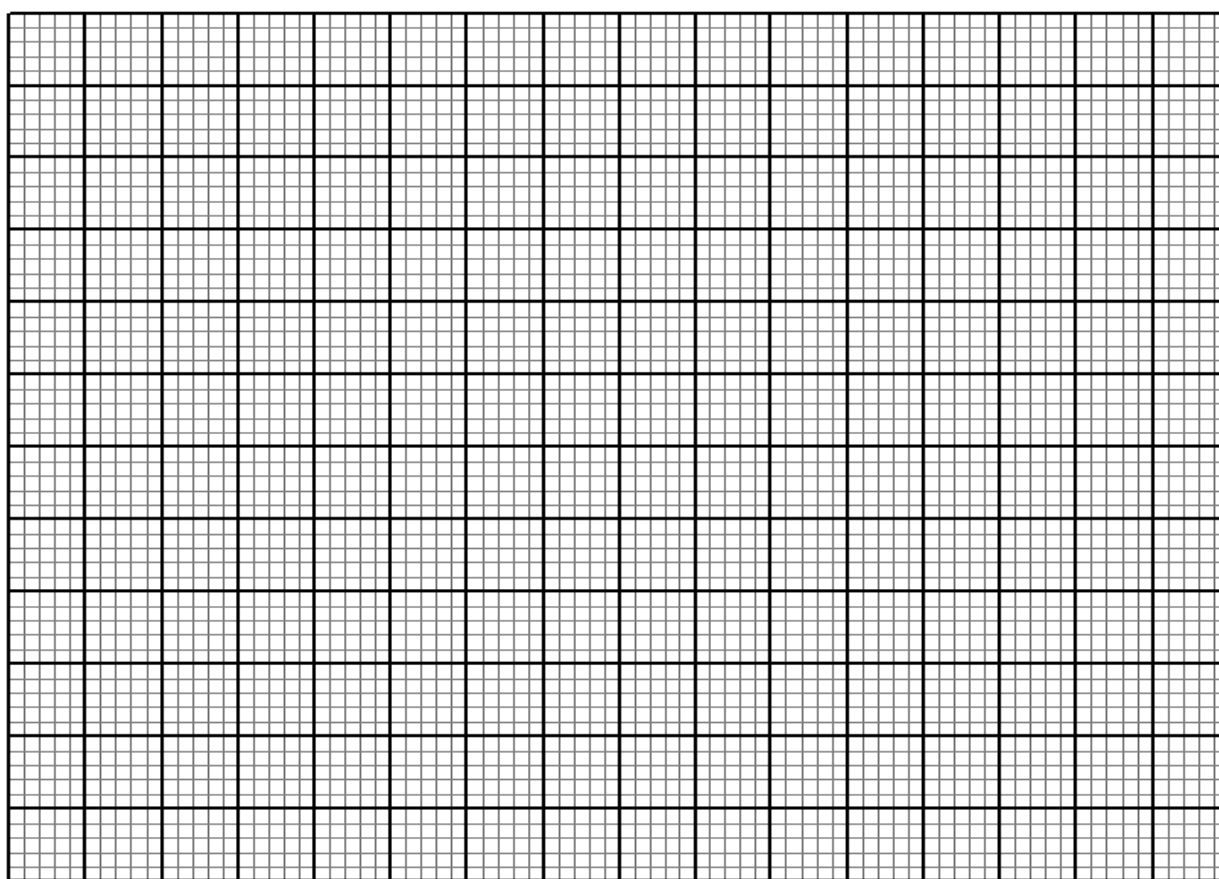
(e) (i) Determine the slope, S, of the graph   (3 marks)

(ii) Obtain the value of k in the equation: $S = \frac{8\pi}{3K}$ (2 marks)

PART B

You are provided with the following:

- A cylindrical container
- Some water
- A stop watch
- A metre ruler or half metre rule
- A boiling tube
- Some sand
- A rubber band

Proceed as follows:

(f) Tie the rubber band round the boiling tube so that it is at a distance L= 12 cm from the bottom of the tube (see fig 2. a). Pour water into cylindrical container until the level is about 2.0 cm from the top of the beaker. Float the boiling tube in the water in the container. Add sand gradually into the boiling tube until the tube sinks to the 12 cm mark. See figure 2 (b).

Figure 2
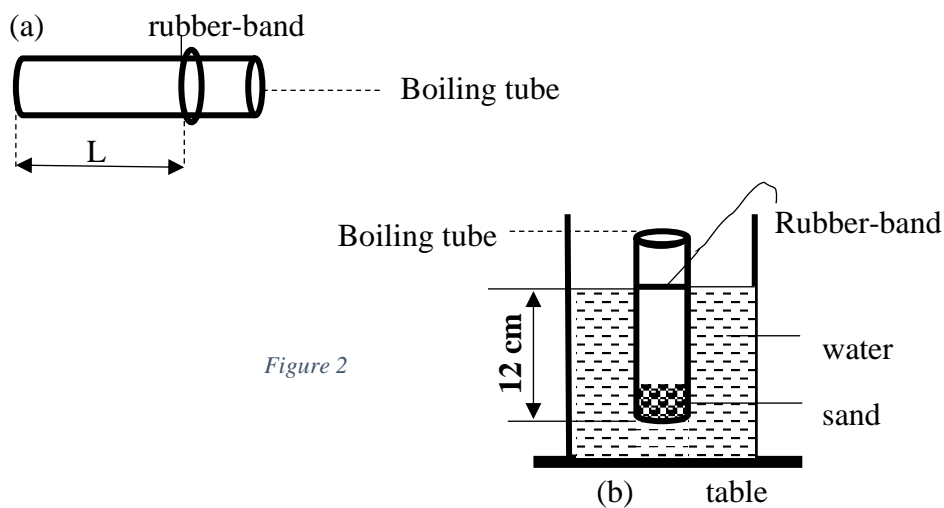
(g) Depress the boiling tube slightly and release so that is oscillates vertically without touching the sides of the container. Measure and record in table 2 the time t_1, for five oscillations of the boiling tube, Repeat the procedure two more times to obtain t_2, and t_3 and record the values in table 2. Complete the table. (3 marks)

Table 2

t_1 (S)	t_2 (S)	t_3 (S)	Average, t (S) $t = \dfrac{t_1+t_2+t_3}{3}$	$T = \dfrac{t}{5}$ (s)

(h) Evaluate PT = 40L given that L is the length of the tube up to the rubber band in (f) and T is the value obtained in (g) above. (1 mark)

P = _____

QUESTION TWO

You are provided with the following apparatus:

PART A

- Constantan wire SWG 28 mounted on a mm scale
- Ammeter (0 – 1) A
- Voltmeter (0 –2.5) V
- A jockey
- 6 connecting wires with crocodile clips
- A switch
- A new dry cell and a cell holder
- Micrometer screw gauge to be shared

Proceed as follows:

(a) Connect the apparatus provided as shown in the circuit below. Measure the voltmeter reading, E when the switch is open.

E = …………………   (1 mark)
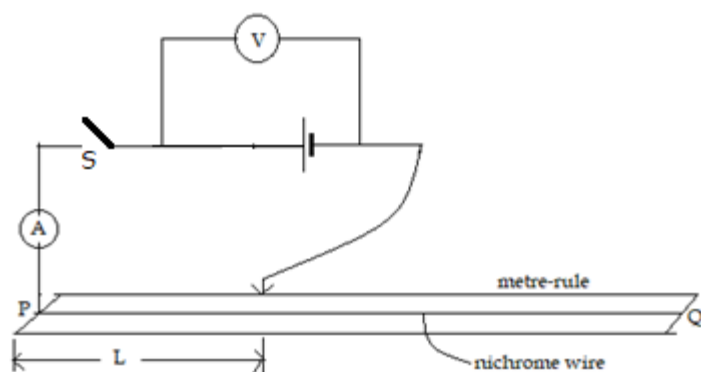
Figure 3

(b) With the crocodile clip at L = 10 cm, close the switch S and record the ammeter and voltmeter reading.

A = ………………………….   (1 mark)

V = …………………….   (1 mark)

(c) Repeat the procedure in (b) for other values of l = 15cm, 20cm, 25cm, 30cm, 35cm and record the readings in the table below. (5 marks)

Table 3

Length. L. (cm)	10	15	20	25	30	35
Voltmeter reading, V (volts)						
Ammeter reading, I(A)						

(d) Given that V = X – 0.3.I, determine the value of X when L is 20cm (2 marks)

(e) Measure the diameter d of the wire x using the micrometer screw gauge.

d = _____ m (1mark)

(f) Dismantle the apparatus and set up the circuit as shown below
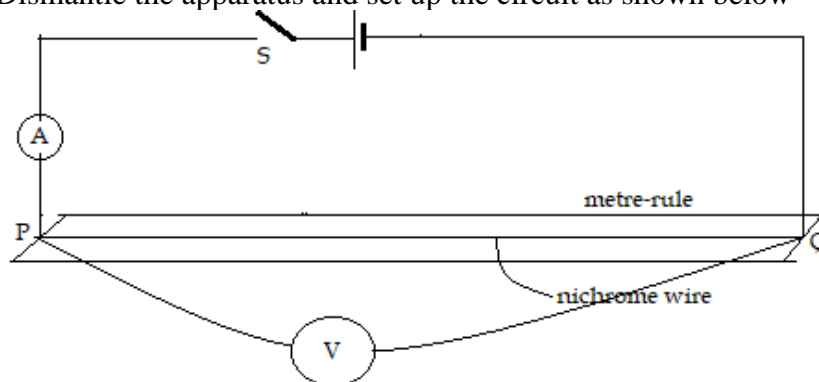
Figure 4

(i) Close the switch S and record the ammeter and the voltmeter readings

I = _____ A (1 mark)

V = _____ V (1mark)

Hence find R, the resistance of the wire.

R = _____ (1mark)

(ii) Given that: $R = \dfrac{4\rho}{\pi d^2}$, determine ρ (2 marks)

PART B

You are provided with the following apparatus.

– Rectangular glass block

– 3 optical pins

– A soft board.

– A plane paper

– 4 paper pins.

– Four tuck pins

Proceed as follows:

(g) Using the tuck pins, fix the plane paper on the soft board.

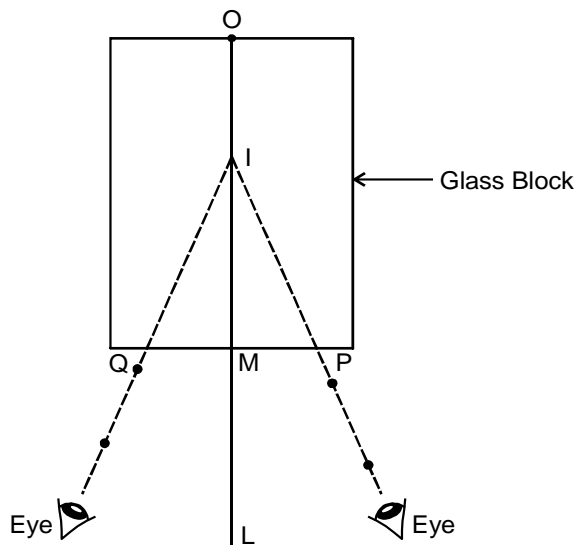Place the rectangular glass block in the middle of the plane paper and trace its outline (as shown in figure 5). Using a pencil. Remove the block.

Figure 5

(h) Construct a perpendicular line LMO bisecting the shorter sides of M and O.

Mark points P and Q such that PM = MQ = 2cm.

Measure OM.. ($\frac{1}{2}$ **mark**)

(i) Place the plane paper on the soft board and carefully replace the glass block so that it fit the outline. Press the object pin on O such that it is upright and touching glass block and the second pin on P also upright and touching the block.

(j) Press the third pin P_1 a short distance from the block such that P_1, P and I lie on a straight line when viewed through the block with one eye. I is the image of the object pin O.

(k) Repeat the experiment with now on Q. Press the third pin P_2 a short distance from the block such that when viewed P_2, Q and I lie in a straight line.

(l) Remove the pins and glass block; draw the lines P_1PI (PI dotted) and P_2 QI (QI) doted meeting OM at I.

IM = ...cm   ($\frac{1}{2}$ **mark**)

(m) Using the above information, determine, k, given that: $A = \frac{l}{k}$, where l is the length OM and A is the length IM   **(1 mark)**

(n) State the significance of k (1 mark)

NB - Hand in your work on the plane paper as proof of having done the experiment.

(1 mark)

This is the last printed page