# PROGRESSIVE STUDENTS F3 MID TERM 3 SERIES 1 EXAMS *(14 SUBJECTS TESTED)*




# PROGRESSIVE STUDENTS
# FORM THREE
# MID TERM 3 SERIES 1 EXAMS

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# ORDER OF THE 14 SUBJECTS TESTED

## *(ALPHABETICALLY ARRANGED)*

1. **AGRICULTURE**
2. **BIOLOGY**
3. **BUSINESS STUDIES**
4. **CHEMISTRY**
5. **COMPUTER**
6. **C.R.E**
7. **ENGLISH**
8. **GEOGRAPHY**
9. **HISTORY**
10. **HOMESCIENCE**
11. **I.R.E**
12. **KISWAHILI**
13. **MATHS**
14. **PHYSCIS**


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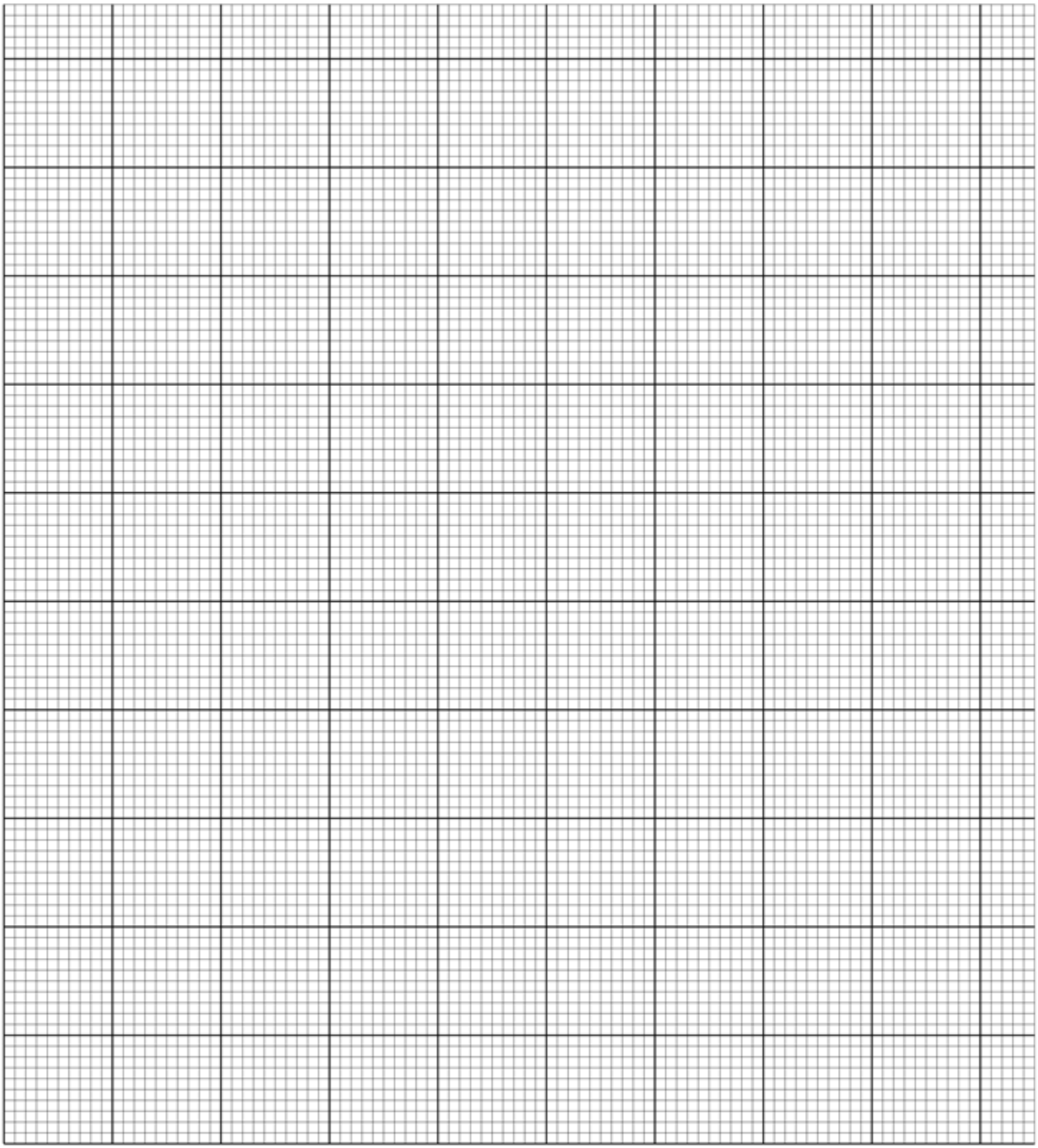
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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**FORM THREE**
**AGRICULTURE**
**PAPER 2**
**TIME: 2 HOURS**
**INSTRUCTIONS TO CANDIDATES:**

- *Write your **name** and **admission 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 | |

## SECTION A (30 MARKS)

**1.** Name **two** light breads of chicken. **(1mk)**

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**2.**Give **two** advantages of creep feeding of beef calves. **(1mk)**

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**3.** State **two** predisposing factors of coccidiosis in livestock. **(1mk)**

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4. Name **two** methods of selecting livestock for breeding **(1mk)**

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**5.** State **four** factors which affect digestibility of livestock feed. **(2mks)**

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**6.** State the length of gestation period in the following breeds of animals. **(1mk)**

**(i)** Sow**……..**

**(ii)** Rabbit**……..**

**7.** Differentiate between dominant gene and a recessive gene **(2mks)**

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**8.** Name **two** methods of livestock farming. **(1mk)**

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**9.** State **four** factors considered when selecting gilt for breeding. **(2mks)**

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**10.** Name **two** methods of stocking a hive. **(1mk)**

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**11.** List **four** harmful effects of keds. **(2mks)**

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**12.** Name **three** types of silos used for making silage. **(1½mks).**

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**13.** State **four** ways of vaccinating animals. **(2mks)**

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**14.** Name **two** species of camels. **(1mk)**

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**15.** Differentiate between drenching gun and bolus gun. **(2mks)**

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**16.** Name **four** equipment used during milking. **(2mks)**

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**17.** Differentiate between pork and bacon. **(2mks)**

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**18.** Name **three i**nternal parasites. **(1½mks)**

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**19.** State four ways of identifying farm animals. **(2mks)**

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**20.** Give the meaning of the term epistasis as used in livestock production. **(1mk)**

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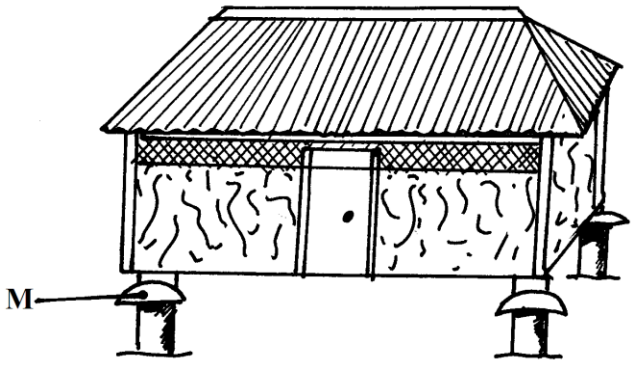
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## SECTION B: (20 MARKS)

***Answers all questions in this section in the spaces provided.***

**21.** Study the diagram of the farm structure below and answer the questions that follow.




**(a)** Identify the part labeled M. **(1mk)**

**M**……

**(b)** State the function played by the part labeled M in the above structure. **(1mk)**

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**(c)** List three maintenance practices that can be carried out on the above structure. **(3mks)**

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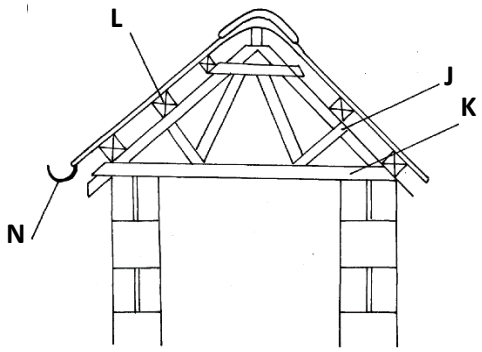
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**22.** Study the illustration below and answer the questions that follow.




**a)** Identify the parts labeled **J, K, L** and **N.** **(2mks)**

**J** ……

**K** ……

**L** ……

**N** ……

**b)** State **two** uses of part labeled **L.** **(1mk)**

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**c)** State **two** reasons why it is important to have the structure labeled N at the edge of the roofing materials. **(2mks)**

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**23.** The diagrams labeled A and B below show the teeth arrangement in hand workshop tools.

**A**




**B**






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**(a)** Identify the tools represented by the teeth arrangements **A** and **B**

**A……** **(½mk)**

**B ……..** **(½mk)**

**(b)** State **one** functional difference between tools represented by the teeth arrangement **A** and **B**. **(2mks)**

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**(c)** Give **two** maintenance practices for the tools represented by the teeth arrangements. Shown Above. **(2mks)**

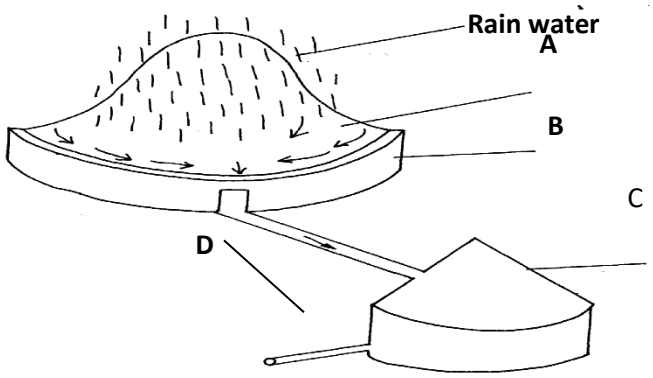
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**24.** The illustration below represented water harvesting method study it carefully and answer the questions that follow.




**(a)** Identify the water harvesting method illustrated above. **(½mk)**

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**(b)** Name the parts labeled **A,B C** and **D** **(2mks)**

**A……**

**B……..……**

**C……..……**

**D……**

(**c)** Name **two** other methods of water harvesting. **(2mks)**

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**(d)** Name **three** methods used to treat water harvested before use. **(1½ mk)**

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## SECTION C (40 MARKS)

***Answer any two questions in this section in the spaces provided after question. 27***

**25.** Describe bee keeping under the following sub –headings.

**(a)** Feeding bees **(2mks)**

**(b)** Causes of swarming of bees **(6mks)**

**(c)** Honey harvesting **(6mks)**

**(d)** Honey processing using heat method. **(6mks)**

**26.(a)** State five signs a farmer will observe before culling layers. **(5mks)**

**(b)**Describe the life cycle of a tape worm *(Taenia solium)* **(8mks)**

**(c)** List four functions of proteins in livestock production **(4mks)**

**(d)**Calculate how much feedstuff is required if a farmer wants to make100 kg livestock feed containing 18 % crude protein, using maize meal (8% crude protein) and sunflower seed cake containing (33% crude protein) using Pearson's square method. **(3mks)**

**27. (a)** Describe the life cycle of the two host tick. **(6mks)**

**(b)** Describe the maintenance practices carried out on a wheel barrow. **(6mks)**

**(c)** State **four** reasons why farm tools should be maintained. **(4mks)**

**(d)** Give **four** differences between large white boar and landrace boar. **(4mks)**

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# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**BIOLOGY**
**FORM THREE**
**Time: 2½ Hours**

**INSTRUCTIONS**

- All Questions are Compulsory
- Write your Answers in the Spaces Provided
- Wrong Spelling of Technical Terms shall be Penalized

| Max Score | Student's Score |
|---|---|
| **80** | |

**1.** Name the components of blood that are absent in the tissue fluid. **(2mks)**

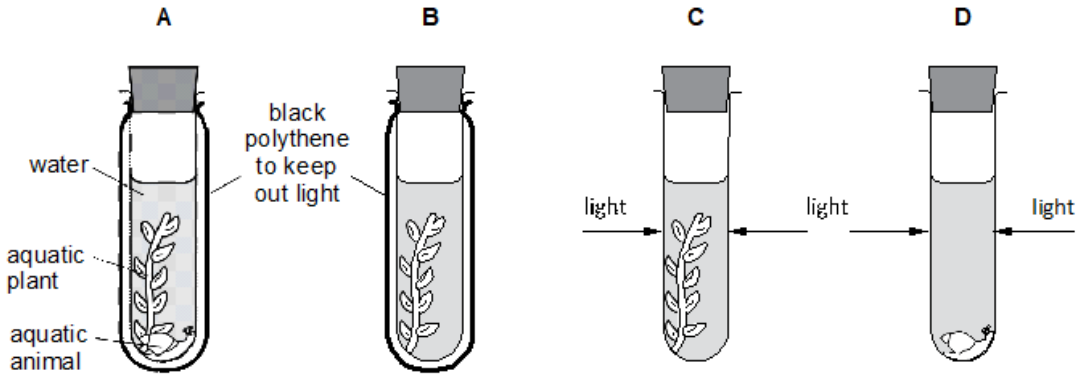
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**2.** The apparatus shown was used in an experiment. The carbon (IV) oxide content of the water in each test-tube was measured at the start of the experiment and again three hours later.





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**(i)** In which test-tube will the carbon (IV) Oxide concentration decrease? **(1Mk)**

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**(ii)** Account for your answer in 2 (i) above**.** **(2Mks)**

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**3. (i)** Name the association between leguminous plant and rhizobium bacteria. **(1mk)**

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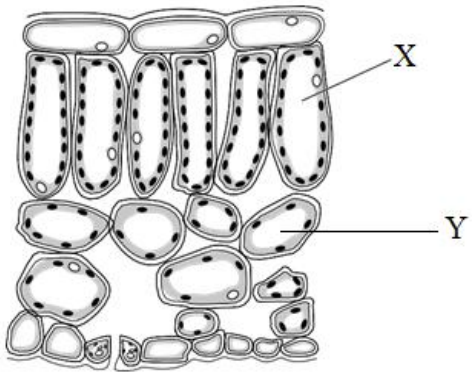
**(ii)** State the biological significance of the association named in 3(i) above in the environment**.** **(1Mk)**

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**4.** The diagram shows a cross-section of part of a leaf**.**




**(i)** Name the cell labelled X. **(1Mk)**

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**(ii)** Give **two** ways in which cell X and cell Y differ structurally. **(2Mks)**

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**5.** A certain solution was boiled in a clean test tube containing equal amount of Benedict's solution for three minutes. The color turned orange. Suggest the food material likely to be present**.** **(1mk)**

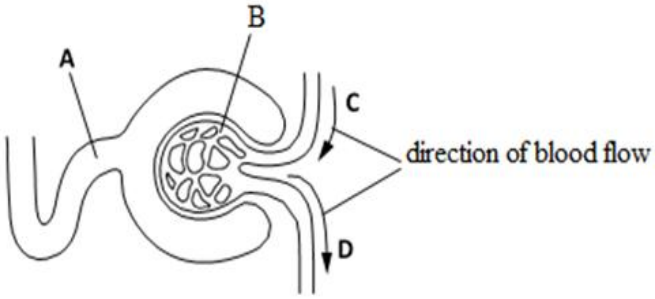
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**6.** The diagram shows the first part of a kidney nephron and its blood supply. During filtration, protein molecules do **not** pass through the wall of the glomerulus.




**(i)** Give a reason for the absence of protein molecules in part A. **(1Mk)**

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**(ii)** Mention two factors that encourage high pressure at part B. **(2Mks)**

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**7.** The diagram below shows a fruit of a certain plant.



**(a)(i)** Name the likely agent of dispersal. **(1mk)**

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**(ii)** Give a reason for your answer in 7(i) above. **(1Mk)**

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**(iii)**Label any two parts on the diagram**.** **(2Mks)**

**8.** State functions of the following organelles.

(i) Centrioles **(1Mk)**

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(ii)Golgi bodies **(1Mk)**

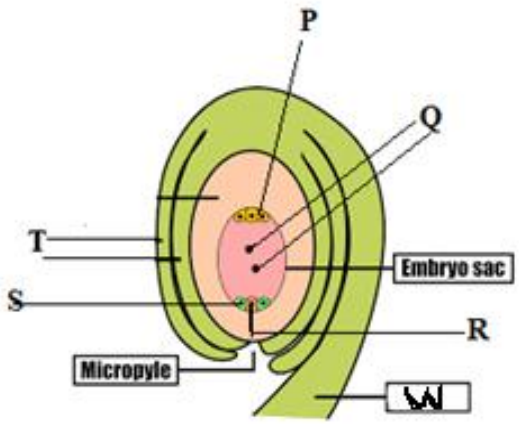
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**9.** The diagram below represents a mature embryo sac. Study it and answer the questions below.




**(i)** Identify the parts labeled P, W and S**.** **(3Mks)**

**P**……..

**W**……

**S**……..

**(ii)** What does part labeled T, R and Q change to after fertilization. **(3Mks)**

**T** ……

**R** ……..

**Q** ……

**10.** Name the specific structure where the following biological processes take place;

**(i)** Photolysis in the chloroplast. **(1Mk)**

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**(ii)** Carbon (IV) oxide fixation in the chloroplast. **(1Mk)**

……...

**(iii)**Glycolysis in cell respiration **(1Mk)**

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**11.** The main surfaces for gaseous exchange are known to have a large surface area. Identify the features that enhance the suface area in the following respiratory organs.

**(i)** The gill **(1Mk)**

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**(ii)**Mammalian lung **(1Mk)**

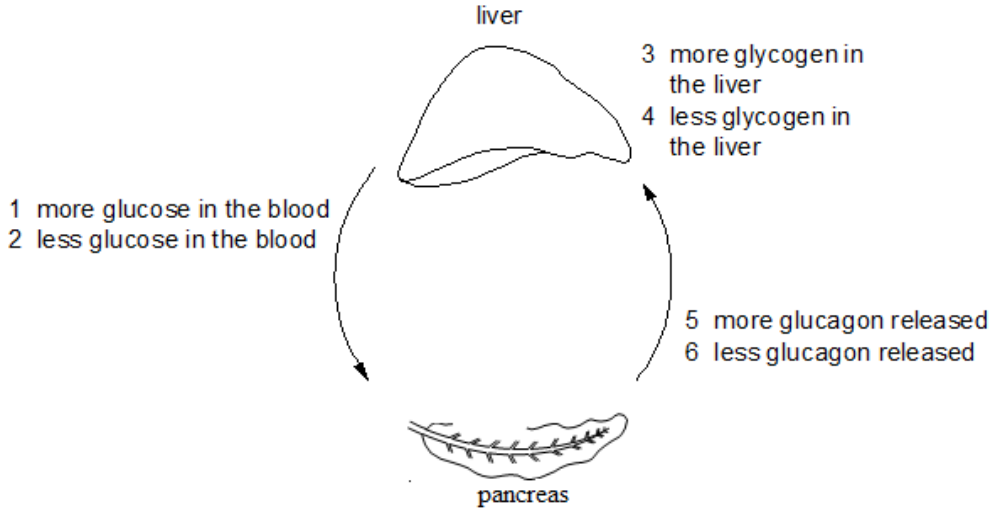
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**(iii)** Tracheal system in insects**.** **(1Mk)**

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**12.** The diagram shows part of the mechanism that controls blood sugar concentration.




**(a)** A person does one hour of exercise. Starting with the pancreas, what is the sequence of events in which the hormone glucagon is involved. **(1Mk)**

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**(b)** State the expected changes in the following at the time of vigorous exercise.

**(i)** Superficial arteries**.** **(1Mk)**

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**(ii)** Amount of urine formed. **(1Mk)**

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**(c)** Explain the answers given in 12 (b) above**.** **(2Mks)**

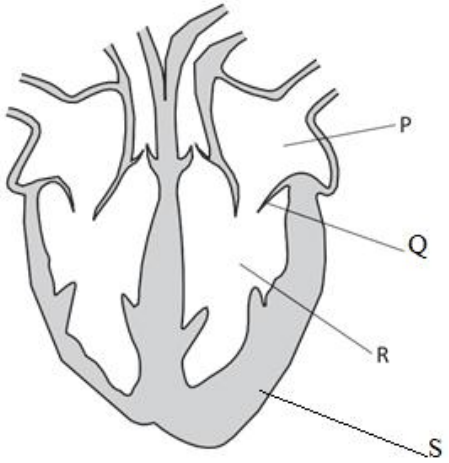
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**13.** The diagram shows a cross-section through the heart of a mammal.






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**(i)** Name the parts labeled P and R**.** **(1Mk)**

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**(ii)** Give the function of the part labeled Q. **(2Mks)**

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**(iii)**Account for the large size of the part labeled S. **(2Mks)**

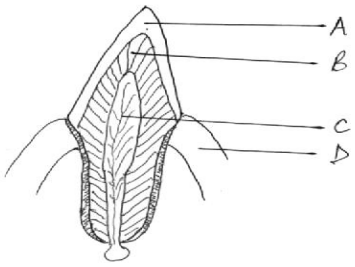
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**14.** The diagram below represents internal structure of a mammalian tooth.




**(i)** Name the parts labeled B and D **(2Mks)**

**B** ……

**D** ……..

**(ii)** Name the mineral that takes part in the formation part A. **(1Mk)**

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**(iii)** State two adaptations of section C for its functions**.** **(2Mks)**

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**15.** Suggest the most suitable population estimation method of grasshoppers in your school compound. **(1Mk)**

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**16.** State any two theories that explain the mechanism of opening and closing of stomata. **(2Mks)**

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**17. (i)** Name the secretion from sebaceous gland of mammals. **(1Mk)**

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**(ii)** Give two functions of the secretion named in 17(i) above**.** **(1Mk)**

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**18.** Explain the homeostatic function of sweat in mammals. **(2Mk)**

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**19.** Give the function of vascular bundles. **(2Mks)**

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**20.** The scientific name of organism that causes malaria is **PLASMODIUM OVALE**. How would a student write the name in her exercise book correctly? **(2mks)**

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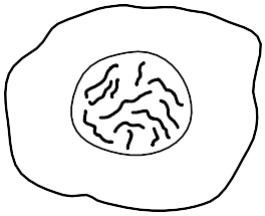
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**21.** In which part of the alimentary canal does ingestion take place. **(1Mk)**

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**22.** The diagram shows the cell of an organism. The nucleus contains 12 chromosomes.





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**(i)** After this cell divides by meiosis, how many chromosomes would be present in one of the daughter cells?**(1Mk)**

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**(ii)** List two events that take place in Anaphase I. **(2Mks)**

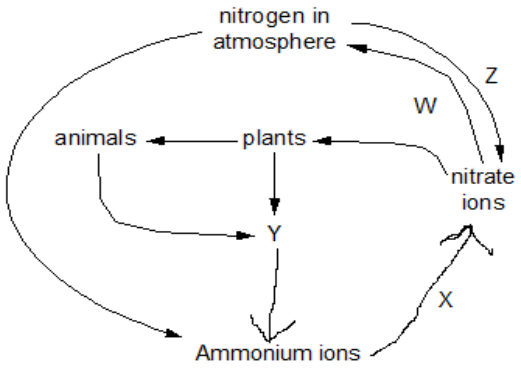
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**23.** The diagram shows part of the nitrogen cycle.




**(i)** Name the processes W, X and Z**.** **(3Mks)**

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**(ii)** Which two organisms make process Y successful. **(2Mks)**

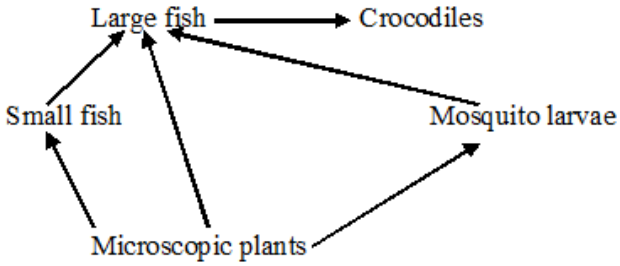
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**24.** The following diagram shows a feeding relationship in an ecosystem




**(a)** From the diagram, write down a food chain with crocodile as secondary consumer. **(1Mk)**

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**(b)** State two short term effects of removing large fish from the ecosystem. **(2Mks)**

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**(c) (i)**Which of the above organism would you expect to have the highest biomass? **(1Mk)**

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**(ii)**Give reason for your answer in 24(c) (i) above. **(1Mk)**

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**25.** A student drew a 3cm long diagram of a plant flower. If the actual length of the flower was 6cm, calculate the magnification of drawing made by the student. Show your working. **(2mks)**

**26.** State the economic importance of the following excretory products in plants **(2Mks)**

Nicotine

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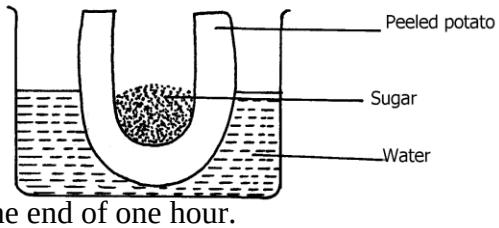
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Quinine

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**27.** An experiment was set-up as shown below and left for one hour




**(i)** State the expected result at the end of one hour. **(2Mks)**

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**(ii)**Explain the observations made in this experiment. **(3Mks)**

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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

***Kenya Certificate of Secondary Education***
**565/1**
**FORM 3**
**BUSINESS STUDIES**
**TIME: 2hours**

**INSTRUCTIONS**
*Answer ALL the questions in the spaces provided.*

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

| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | |
|---|---|---|---|---|---|---|---|---|---|
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**Answer all questions in Section A and any FOUR in Section B.**

**Section A: Answer all questions**

**1.** State the function of each of the following documents as used in home trade. **(4mks)**

| Document | Function |
|---|---|
| (a) Proforma invoice | |
| (b) Advice Note | |
| (c) Credit Note | |
| (d) Order | |

**2.** Jane has completed her secondary school studies. She wishes to engage in a small-scale retail business in her locality. Highlight **FOUR** types of business she can start. **(4mks)**

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**3.**Identify the type of goods described by the following statements given in the table below. **(4mks)**

| Statement | Type of good |
|---|---|
| (a) Used to create other goods. | |
| (b) Require further processing in order to have utility. | |
| (c) Government is obligated to provide them to her citizens. | |
| (d) Have utility but no monetary value. | |

**4.**The following statements refer to different office layouts. Identify the types of office layout explained in the following statements. **(3mks)**

| Statement | Office layout |
|---|---|
| (a) All staff members operate from the same room. | |
| (b) Senior managers are assigned separate rooms from where they coordinate activities. | |
| (c) High class office assigned to enhancing the image of the organization. | |

**5.**Identify the type of wholesalers described in the statements given below. **(4mks)**

| Description | Wholesaler |
|---|---|
| (a) Deal in a wide range of products but within one line. | |
| (b) Sells particular products to other specialized wholesalers | |
| (c) Use vehicles to go round selling goods to trades. | |
| (d) Sell their products to certain parts of the country only. | |

**6.** Identify four channels a Japanese manufacturer would use to distribute his goods to the customer. **(4mks)**

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**7.** Highlight four importance of a warehousing to a manufacturer. **(4mks)**

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**8.** Identify the office equipment described in each of the statements below. **(4mks)**

| | Description | Equipment |
|---|---|---|
| a | Used to make postage stamp impressions on envelopes. | |
| b | Used to transmit verbal messages. | |
| c | Used to store confidential documents and valuable items. | |
| d | Used to record and store information in audio tapes. | |

**9.** State four factors that determine fertility rate in a country. **(4mks)**

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**10.** State four reasons that can lead to the termination of an insurance contract. **(4mks)**

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11. Outline four measures that a firm should take to improve the performance of its labour force. **(4mks)**

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**12.** The participant in a two sector economy are households and firms. Identify the relevant participants in each of the statements given below. **(4mks)**

| | Statement | Participant |
|---|---|---|
| a | Payment for goods and services. | |
| b | Sale of factors of production. | |
| c | Payments of factors of production. | |
| d | Sale of goods and services. | |

**13.**Highlight four external business environment that would affect business operations negatively. **(4mks)**

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**14.** A monopoly is a market structure made up of only one supplier. State four features of such a market. **(4mks)**

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**15.** Fill in the blank spaces in the table below. **(5mks)**

| Capital | Long Term Liabilities | Short Term Liabilities | Fixed Assets | Current Assets |
|---|---|---|---|---|
| 666,250.00 | 230,775.00 | 344,545.00 | (a) | 455,670.00 |
| 53,221.00 | (b) | 34,423.00 | 54,435.00 | 56,554.00 |
| 447,510.00 | 122,345.00 | (c) | 344,544.00 | 677,543.00 |
| (d) | 12,345.00 | 23,441.00 | 23,342.00 | 34,432.00 |
| 2,016.00 | 3,453.00 | 3,423.00 | 1,234.00 | (e) |

**Section B: Answer any four questions from this section.**

**16.** Highlight **five** measures Kenyan government may put in places to reduce unemployment. **(10Mks)**

**17.** Outline **five** benefits to a business person who uses e-mail to communicate. **(10mks)**

**18.** Highlight **five** ways in which a business can interact with external environment to improve its operations. (10 Marks)

**19.** State **five** ways in which the government may influence the supply of a product in market. **(10mks)**

**20.** Explain **five** ways in which computers may be used in an office. **(10Mks)**



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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

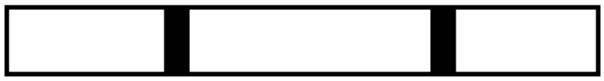
**CHEMISTRY**
**233/1**
**Time: 2 Hours**
*Kenya Certificate of Secondary Education*
**FORM THREE**
**Instructions to candidate**

**a)** Write your name, admission number, and stream in the spaces provided.
**b)** Answer **ALL** questions in the spaces provided.
**c)** All working **MUST** be clearly shown where applicable.
**d)** KNEC mathematical tables and silent non-programmable electronic calculators may be used.
**e)** The candidate 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 – 27 | 80 | |

**1.**A wooden splint was slipped through a given region of a Bunsen burner flame in the laboratory. The pattern shown in the diagram below was realised.



**a)** Name the type of flame involved **(1mk)**

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……

**b)** Explain the observation made on the splint **(2mks)**

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**2.a)** State Gay Lussac's law **(1mk)**

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**b)** 20cm$^3$ of a gaseous hydrocarbon, $C_4H_y$ produced steam and 80cm$^3$ of carbon (IV) oxide when burnt in 110cm$^3$ of oxygen. Determine the value of **y**. **(2mks)**

**3.** The electron arrangement of ions $W^+$ and $Z^{3-}$ are **2** and **2.8** respectively.

**a)** In which groups do elements **W** and **Z** belong? **(1mk)**

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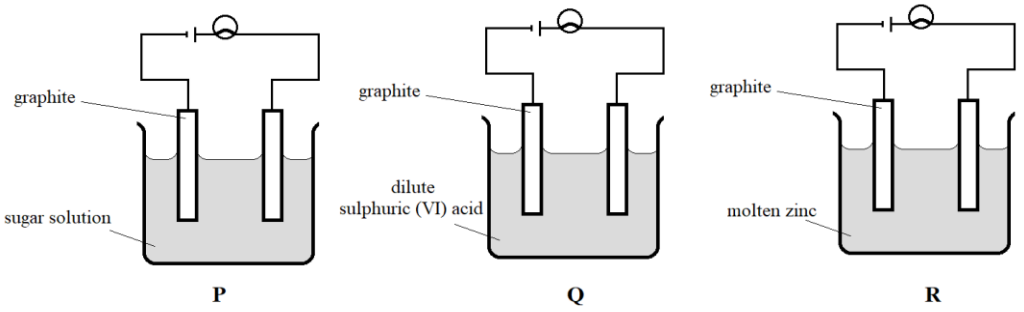
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**b)** Write the formula of the compound formed between **W** and **Z** **(1mk)**

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……

**4.** Kinuthia arranged three setups as shown in figure below, to investigate the effect of an electric current on three different substances.




Explain the following observations:

**a)** The bulb in **P** does not light and no electrolysis took place **(1mk)**

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**b)** The bulb in **Q** lit and electrolysis took place **(1mk)**

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**c)** The bulb in **R** lit but no electrolysis took place. **(1mk)**

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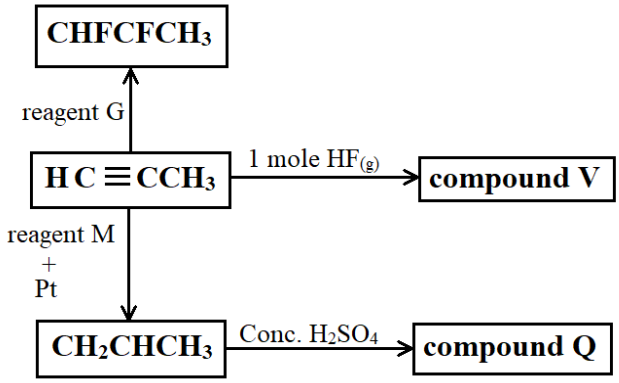
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**5.** The figure below indicates a reaction scheme that starts with propyne. Study it and use it to answer the questions that follow.




**a)** Name the following: **(2mks)**

Compound **V** ……

Compound **Q** ……

Reagent **G** ……

Reagent **M** ……

**b)** Name the process by which propyne reacts with **reagent G** **(1mk)**

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……

**6.** A sample of hydrated metal oxide $V_2O_3 \cdot 3H_2O$ has a mass of 11.7g. The substance was heated until all its water of crystallisation was lost. If the final mass of the residue was 7.65g, determine the atomic mass of **element V**. **(3mks)**

**7.** A **solid D** was subjected to heat and yielded a gas that forms a white precipitate when bubbled through calcium hydroxide solution. The resultant residue forms a colourless **solution J** when dissolved in nitric (V) acid. When dilute hydrochloric acid was added to **solution J**, a white precipitate that dissolves when warmed, to form a colourless solution is observed.

**a)** Write the formulae of:

The cation in **solid D** **(1mk)**

……

The anion in **solid D** **(1mk)**

……



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**b)** Write the equation for the reaction between the residue and dilute nitric (V) acid that forms **solution J** **(1mk)**

……

……

**8.** Equal masses of calcium granules were heated and crushed alternately in separate crucibles **I** and **II** containing pure oxygen and air, respectively until there was no more change in mass.

**a)** Comment on the final masses of the contents of crucibles **I** and **II**. **(1mk)**

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**b)** Write the equations for the reactions in the crucible with greater mass **(2mks)**

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**9.** You are provided with crystals of potassium chloride and lead (II) nitrate. If water is available in a wash bottle, describe how one can obtain a solid sample of lead (II) chloride. **(3mks)**

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**10.** Determine the volume of oxygen produced when 11.05g of silver nitrate undergoes thermal decomposition at r.t.p. (Ag = 108, N = 14, O = 16, Molar gas volume at r.t.p. = 24.0 L) **(3mks)**

**11.** Oxygen and sulphur are both group VI elements. However, the melting point of oxygen is -216$^{o}$C while that of sulphur is 44$^{o}$C. Explain this large difference in melting points **(2mks)**

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**12.**

**a)** Describe an experiment that could be used to distinguish a gas jar of carbon (IV) oxide from of carbon (II) oxide. **(2mks)**

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**b)** Explain the role of carbon (IV) oxide in fire extinguishing **(1mk)**

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**13.** A spatula of zinc granules was added to a beaker containing distilled water.

**a)** State **two** observations that were made during the reaction **(2mks)**

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**b)** State the observation made when two drops of methyl orange indicator is added to the resultant solution **(1mk)**

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**14.** $150cm^3$ of a **gas A** diffuses through a porous plug in 12.5 seconds while $150cm^3$ of oxygen gas diffuses through the same plug in in 7.5 seconds. Calculate the relative molecular mass of **gas A**. **(2mks)**

**15.** Methods **A** and **B** are used in protecting iron metal from rusting. **Method A** involves coating the iron surface with a layer of copper while in **Method B**, a thin layer of Zinc is sprayed onto the iron surface.

**a)** Name the methods used in protecting the iron surface from rusting: **(1mk)**

**Method A** ……

**Method B** ……

**b)** Which method is the most suitable? Explain **(2mks)**

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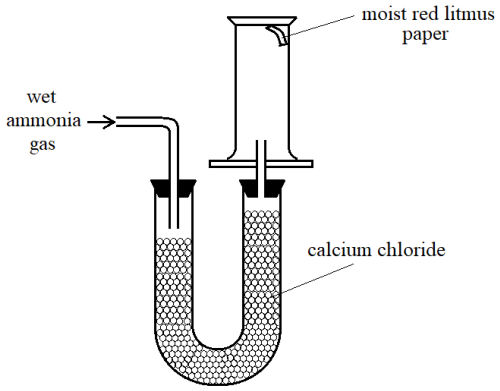
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**16.** A setup was arranged as shown in the diagram below to collect a dry sample of ammonia gas.




**a)** The moist red litmus paper remained red. Explain this observation. **(2mks)**

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**b)** Name the method of gas collection demonstrated by the setup **(1mk)**

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**17.**

**a)** A volume of concentrated sulphuric (VI) acid was added to a sample of sugar crystals. State and explain the observation made. **(2mks)**

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**b)** State **one** application of this process in the laboratory. **(1mk)**

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**18.** The grid below shows part of the periodic table

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |
| | | | | | | J | L | M |
| D | G | | | | | R | | T |
| E | | | | | | | | |
| | | | | | | | | |



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**a)** Identify the least reactive non-metal. Explain your answer. **(2mks)**

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**b)** How do the atomic radii of **D** and **R** compare? Explain. **(2mks)**

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**19.** When a student was stung by a nettle plant their teacher applied an aqueous solution of ammonia to the affected area of the skin and the student was relieved of pain.

**a)** Explain this observation **(2mks)**

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**b)** Sodium hydroxide is not preferred for this procedure. Explain. **(2mks)**

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**20.** When **solid W** is heated strongly in a combustion tube, a blue residue and droplets of a colourless liquid are observed on the cooler parts of the combustion tube.

**a)** Name the process described in the combustion tube **(1mk)**

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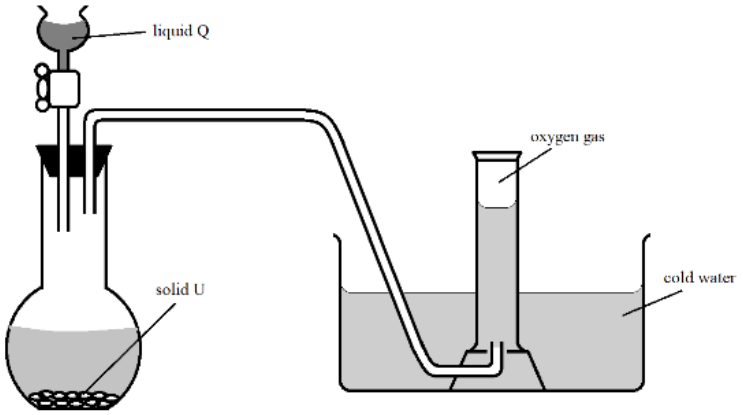
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**b)** Identify **solid W** **(1mk)**

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**21.** The setup below was used for the preparation of oxygen gas in the laboratory.






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**a)** If **liquid Q** is water, identify **solid U** and write an equation for the reaction that occurs in the flask.

**(2mks)**

Identity of **solid B**

……

Equation for reaction

……

**b)** Apart from density, state any **one** property of oxygen that allows it to be collected as shown in the diagram.

**(1mk)**

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**22.** Atomic representations of elements **U**, **V**, **W** and **X** are:

$^{33}_{16}U$, $^{12}_{5}V$, $^{22}_{11}W$, and $^{38}_{18}X$

Select the element which forms

**a)** An insoluble carbonate **(1mk)**

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**b)** A double charged anion **(1mk)**

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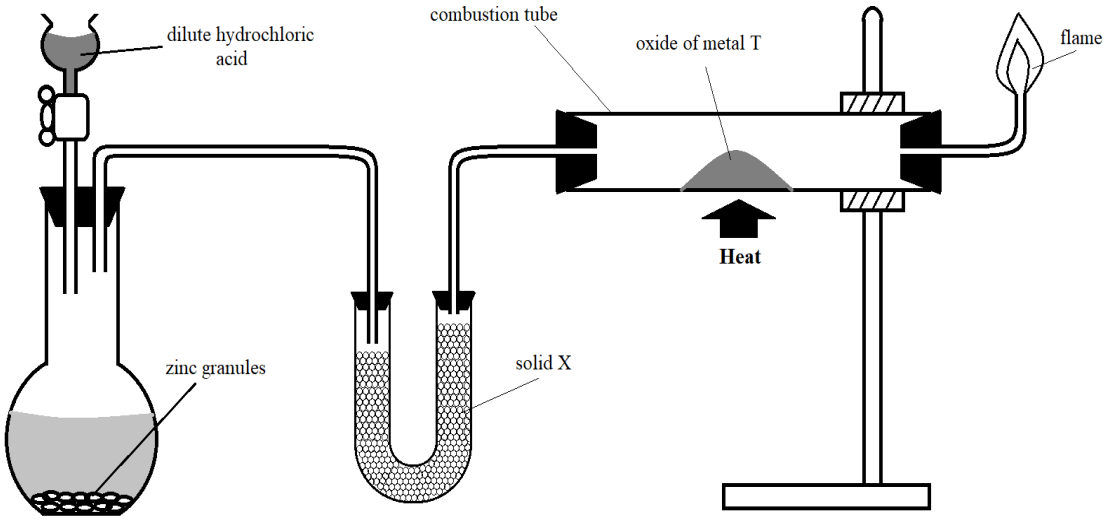
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**c)** The largest atomic radius **(1mk)**

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**23.** The apparatus arranged as shown in the diagram below was used to prepare hydrogen gas and to investigate its properties. **Metal T** is copper.






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**a)** State an observation that would be made in the setup if nitric (V) acid was used in the place of the dilute hydrochloric acid. **(1mk)**

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……

**b)** Identify **solid X** in the setup and state its function. **(1mk)**

Identity X ……

Function ……

**c)** State the role of the flame at the end of the combustion tube. **(1mk)**

……..

**24.** Hexane, butanol, and water are all liquids at room temperature. A mixture of water and hexane forms layers, while a mixture of butanol and water forms a homogenous solution. Explain this observation **(3mks)**

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**25.** The label on a bottle of hydrochloric acid in the laboratory has the following information printed on it

**Density: 1.134g/cm$^3$** **Percentage purity: 37%**

**a)** Determine the mass of hydrochloric acid in 10cm$^3$ of the stock solution **(2mks)**

**b)** Calculate the concentration of this stock solution in moles per litre. **(2mks)**



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**26.** Diamond and graphite both have giant atomic structures with strong covalent bonds. However, diamond is hard while graphite is soft. Explain this observation. **(3mks)**

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**27.** A hibiscus plant has red petals and is used to prepare simple acid-base indicator. Describe how:

**a)** A solution containing the red pigment may be prepared **(1mk)**

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**b)** The solution may be demonstrated to be an acid-base indicator **(2mks)**

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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

## EXAMINATION

**CODE 451/1 SUBJECT: COMPUTER STUDIES Paper 1**

**FORM THREE**

**– TIME $2\frac{1}{2}$Hours**

---

**INSTRUCTION TO CANDIDATES**

- Write your name and index number in the spaces provided above
- This paper consists of **Two** sections **A** and **B**
- Answer **ALL** 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

**FOR EXAMINER'S USE ONLY**

| 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.** For each of the following file organization methods state an appropriate storage medium **(2mks)**

(i) Serial

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(ii) Random

……



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**2.** State three criteria of choosing an operating system **(3mks)**

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**3.** Suggest how technological advancement in ICT can be used to make the computer more user friendly for persons that are **(2mks)**

**(i)** Blind

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**(ii)** Without hands

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**4.** Describe how each of the following would affect the suitability of a room for use as a computer room **(2mks)**

(i) Burglar proofed doors

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(ii) Availability of Taps and sinks

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**5.** Give three methods that are used to transform an object in DTP **(3mks)**

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**6.** A computer student from Mbita High school typed Smith instead of Simth and 3455 instead of 3456

**(i)** Identify the type of error in each case **(2mks)**

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**(ii)** Explain how the error can be controlled **(2mks)**

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**7.** Typing in Ms-Word is easier and efficient. Give three features that make this possible **(3mks)**

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**8.** Describe three reasons why primary storage is not used for secondary storage **(3mks)**

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**9.** List two arithmetic operations that can be performed on a row of numeric in a word processing table **(2mks)**

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**10.** One of the tasks of an operating system is to allow communication between the computer and the user. Give three platforms created by operating systems to allow users to communicate with the computer **(3mks)**

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**11.** Describe the following terms as used in data security **(2mks)**

(i) Threat

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(ii) Vulnerability

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**12.** Give three ways you can wrap text on an object in DTP publication **(3mks)**

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**13.** Name three change case options supported by Ms-publisher **(3mks)**

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**14.** Describe two reasons which make laptops suitable for personal computing **(2mks)**

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**15.** State three damages that a computer virus may cause to computer **(3mks)**

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## SECTION B (60 MARKS)

***Answer question number 16 and any other three questions***

**16.**

**(a)** Describe three language processors used in programming **(3mks)**

**(b)** Identify the programming languages represented by the source code show below **(3mks)**

```
<! DOCTYPE html
<Html>
<Head>
<Title> RIZZY
</Title></Head>
</Html>
```

*Figure 1*

```
program
writeDemo(output);
var
    X: integer;
begin
    x := 10;
  WriteLn(output,
```

*Figure 2*

```
MOV AL, 1h
MOV CL, 2h
MOV DL, 3h
```

*Figure 3*

**(c)** Draw a flowchart which can be used to design a program to work out the cost of covering the windows of a house with curtains given that; **(9mks)**

- Number of windows are six
- The area of the window is in square meters (SOW)
- The cost of material per square meter is (COM) is 400
- The length of a window is (L) and the breadth (B) in meters.

The Program should;

- Calculate the Area in square meters (SOW) required for each window and the cost per window.
- Calculate the total cost for the six windows.
- Print the total cost of the material required



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**17.**

**(a)** Convert $\frac{12}{32}$ base 10 to binary number system **(3mks)**

**(b)** Convert $1001011.01010_2$ to decimal number **(3mks)**

**(c)** Subtract $1101.01111_2$ from $110111.11001_2$ **(3mks)**

**(d)** Using twos compliment subtract $29_{10}$ from $23_{10}$ leave your answer in decimal notation **(3mks)**

**(d)** Arrange the following numbers in order from smallest to largest **(3mks)**

**$110011_2$, 1FH, $67_8$ and $45_{10}$**

**18.**

**(a)** Describe the following database features

(i) Macro **(2mk)**

(ii) Module **(2mk)**

(iii) Table **(2mk)**

**(b)** Study Table A and B then use it to answer questions that follow

**Table: A**

| Field Name |
|---|
| ID Number(PK) |
| Last Name |
| First Name |
| Address |
| Town |

**Table: B**

| Field Name |
|---|
| ID Number |
| Product ID (PK) |
| Product Name |
| Unit cost |
| Quantity |
| Date of Birth |
| Total |

(i) Identify the most appropriate data type for ID Number, Product Name and Quantity **(3mks)**

(ii) Given that the data type for Total is calculated write an expression to be entered in the expression builder **(2mks)**

(iii) Suggest how date birth can be validated to accept dates in 2024 **only** **(2mks)**

(iv) Explain how a relation can be created between Table A and B **(2mks)**

**19.**

**(a)** Describe three component of a formula as used in spreadsheet **(3mks)**

**(b)** Explain why spreadsheet is suitable for the following applications

(i) Statistical **(2mks)**

(ii) Accounting **(2mks)**

**(c)** A form two student was feeding data in a Ms-excel table. He keyed in half in cell and then the cell displayed 02-Jan after pressing the enter key. State the cause of this anomaly and how it can corrected **(2mks)**

**(d)** The formula =$C1+$D$2 was typed in Cell G3. State how the formula will appear if it copied to cell H4 **(2mks)**

**(e)** The table below is an extract from a spreadsheet application used to capture remedial lessons a teacher cover per day in a school, use it to answer the questions that follow

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | Mon-Fri Rate | 300 | | | | | |
| 2 | Saturday Rate | 500 | | | | | |
| 3 | Teacher | **Mon** | **Tues** | **Wed** | **Thur** | **Fri** | **Sat** |
| 4 | Mr.Kimani | 1 | 0 | 3 | 2 | 1 | 2 |
| 5 | Ms. Wamalwa | 1 | 2 | 1 | 3 | 3 | 2 |
| 6 | Mr. Kizito | 2 | 1 | 1 | 1 | 1 | 1 |
| 7 | Mr.Mugambi | 1 | 1 | 1 | 1 | 1 | 3 |
| 8 | Mr.Kirui | 1 | 1 | 1 | 1 | 1 | 3 |



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(i) The school have a policy of paying for this service in two installments. Lessons taught from Monday to Friday are paid on Friday while Saturdays are settled on Sundays. Write a formula that will computer Amount paid to Teacher on Friday **(2mks)**

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Total Amount paid for week **(2mks)**

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**20.**

**(a)** What is Internet Service Provider **(2mks)**

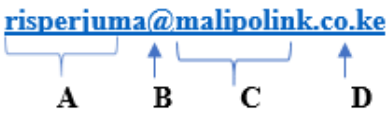
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**(b)** Below is an email address name the parts labelled A,B, C and D **(2mks)**




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**(c)** Give three ways which parents can protect their children from accessing inappropriate content from the internet **(3mks)**

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**(d)** Describe three ways in which the use of Internet make reporting of corruption easier **(3mks)**

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**(e)** Explain three problem associated with using email technology for communication **(3mks)**

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**(f)** Describe the following internet features **(2mks)**

**(i)** Inbox

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**(ii)** Junk

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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**CHRISTIAN RELIGIOUS EDUCATION**
**FORM 3**
**Time: 2 Hours**
**ANSWER ALL QUESTIONS**

1. **(a)** Explain how learning of Christian religious education in secondary school promote the goals of national development. **(6mks)**
   **(b)** State six similarities found in both biblical and traditional views on creation**.** **(6mks)**
   **(c)** Identify eight ways in which people in traditional African communities take care of God`s creation **(8mks)**

**2.a)** Outline Nathan's prophecies concerning the messiah (2nd Samuel 7:3-17 **).** **(6mks)**
   **b)** Describe four activities which took place during the dedication of Jesus in the temple (Luke 2:22-40). **(8mks)**
   **c)** List six virtues Christians acquire when celebrating the birth of Jesus. **(6mks)**

**3.(a)** Describe the events that took place from time Jesus was arrested up to when he was sentenced to death. **(7mks)**
   **(b)** Outline six Jesus teachings on the power of faith. **(6mks)**
   **(c)** Give ways through which Christians demonstrate their faith in God. **(7mks)**

4. a) Explain how the unity of believers is expressed in the body of Christ **(8mks)**
   **b)** How was the life of Peter transformed on the day of Pentecost**?** **(6mks)**
   **c)** Explain six ways in which the gifts of the Holy Spirit are abused in the church today. **(6mks)**

**5.a)** Explain the role of prophets in the Old Testament. **(6mks)**
   **b)** State seven ways in which the rich oppressed the poor during the time of Prophet Amos. **(7mks)**
   **c)** In what ways is the Church in Kenya promoting justice in the society. **(7mks)**


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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**Kenya Certificate of Secondary Education**
**101/1 – ENGLISH – Paper 1**

**(FUNCTIONAL SKILLS, CLOZE TEST AND ORAL SKILLS)**
**FORM THREE**

**TIME: 2 HOURS**

***INSTRUCTIONS***

**a)** Write your name and index number in spaces provided
**b)** Sign and write the date of examination in spaces provided
**c)** Answer ALL questions
**d)** All answers must be written in the spaces provided

**FOR EXAMINER'S USE ONLY**

| QUESTION | MAXIMUM SCORE | CANDIDATE'S SCORE |
|---|---|---|
| 1. | 20 | |
| 2. | 10 | |
| 3. | 30 | |
| TOTAL | 60 | |

**Q1.** Imagine that you are the secretary of Majengo youth group, the group has just held a meeting and discussed the following items; establishing tree nursery project, a visit to Kakamega Forest and starting a poultry farming project. Write a LETTER to the patron, Vihiga Youths Empowerment Officer requesting him to fund your projects**.** **(20mks)**

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**Q2. Read the passage below and fill in each blank space with the most appropriate word.**

To be an excellent leader, you need to be thoughtful. You should be **a……** to portray that you have a strategic vision in place. As a leader, you need to be conscious **…b……..** what is happening around you to make wise**…c……** . Leadership is about having a voice. You should be bold and confident enough to communicate clearly to people **…d……** you.

Dear young change makers, do not be fooled **…e……** believing that you are the only one with a say since **…f……** is about being the guiding voice. Many a times in this journey, leading will require you to listen and learn. This will **…g……** present you with an opportunity to groom other leaders. And when …**h……** an opportunity arises, do not be selfish. Share your skills. You do not dim your shine by lighting **…i……..**You cannot walk this journey of leadership **…J…….**

*(Adopted from English Demystified Revision Books- English Paper One)*

**Q3. (a) Read the item below and then answer the questions that follow**

**Watima:** Good morning?

**Nafula:** Good morning sir.

**watima:** I'm looking for a good chicken, but yours don't look too good. I'm going to have visitors, and this being the Christmas season, I really must give them a feast.

**Nafula:** These are the right kind of chickens for your visitors sir. They are healthy and well fed.

**Watima:** On the contrary, they look underfed. Anyway, what is your price?

**Nafula:** It depends, I charge more for cocks; they have more meat, you know (pointing at a red cock). This one for instance, goes for Sh. 400.00. As for the hens, I charge Sh. 250.00.

**Watima:** You are not serious! Much of the weight is a bundle of bones. I am giving you 150 for each hen and Sh. 300.00 for each cock for Sh. 900.00. This will give us a total of Sh. 1,350.00.

**Nafula:** You know I buy and sell. I don't get them from my shamba. Your figure does not give me any profit at all sir.

**Watima:** But you also know money is hard to come by, and especially during this Christmas season. Give me a reasonable price, unless you prefer, I go to another seller.

**Nafula:** Let me make it Sh. 225 for a hen and sh. 375.00 for a cock please.

**Watima:** It looks like you are not interested in selling your chickens.

**Nafula:** No, I am! Why would I be here? My children's fees come from this business.

**Watima:** Okay, take Sh. 175 .00 for each hen and 325.00 for each cock.

**Nafula:** No, there would be no profit for me. You can do better than that. You can surely promote my small business. Just give me Sh. 350.00 per cock and Sh. 225.00 per hen. This would be Sh. 675.00 for the three hens and Sh. 1,050 for the cocks.



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**Watima:** (Doing his mental arithmetic). That's a total of Sh. 1,725.00. Okay, at least I'll be able to feed my visitors. (*Handing over the money*) Here you are.

**Nafula:** Thank you. (as *the seller ties them together*). You are a good customer. Please come again. My name is Musimbi Nafula.

**Watima:** And I'm Karani Watima Thank you. See you then.

**(i)** Identify three elements that make this item a negotiation **(3mks)**

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**(ii)** What is the purpose of greeting in this conversation **(2mks)**

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**(iii)**Describe how you would deliver the last line effectively **(2mks)**

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**(iv)**What makes Nafula an excellent negotiator? **(3mks)**

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**(b)** Explain **the importance of the following during public speaking.**

**i.** Using gesture **(3mks)**

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**ii.** Maintain upright seating posture **(3mks)**

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**iii.** Maintaining meaningful eye contact with the speaker **(3mks)**

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**(c) i.** Give the homophone of the following words **(4mks)**

Queue ……..

Flower ……..

Hair ……..

Blue …….

**(ii)** State the intonation you will use when saying the following sentences **(3mks)**

Close the door!**.....**

Did you win?**.....**

Why are you late for class?**.....**

**(d)** You were unable to collect your home work in time because you took a lot of time training for the Rugby competition. Explain how you will hand in your homework to the teacher who is marking the collected books under the tree **(4mks)**

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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**FORM 3**

**312/1 GEOGRAPHY Paper 1**

**TIME: 2¾ Hours**

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**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)** All answers must be written in the spaces provided after Question 10.

**(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 | Candidate's Score | Maximum Score |
|---|---|---|---|
| A | 1 – 5 | | 25 |
| B | 6 | | 25 |
| | | | 25 |
| | | | 25 |
| | Total Score | | 100 |



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## SECTION A

*Answer **all** questions in this section*

**1.(a)** Name **two** planets without satellites revolving around them. **(2mks)**

**(b)** State **three** characteristics of the sun. **(3mks)**

**2.(a)** Identify the instruments used to measure the following weather elements.

**(i)** Humidity **(1mk)**

**(ii)** Wind direction **(1mk)**

**(b)** State **three** factors considered when siting a weather station. **(3mks)**

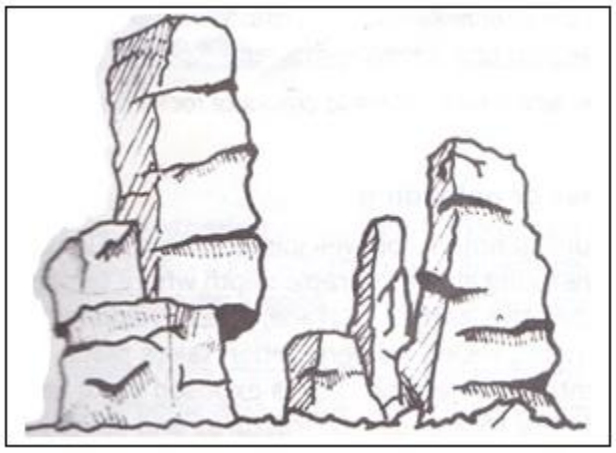
**3.(a)** What is earth movement? **(2mks)**

**(b)** Give **three** causes of earth movements. **(3mks)**

**4.(a)** Give **two** forms of landslides. **(2mks)**

**(b)** State **three** negative effects of mass wasting on the environment. **(3mks)**

**5.**The diagram below shows rocks which have undergone physical weathering.



**(a)** Identify the process represented by the diagram. **(1mk)**

**(b)** Describe how the process represented above occurs. **(4mks)**



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## SECTION B

*Answer **question 6** and any other **two** questions in this section.*

**6.** Study the map of Mumias 1:50,000 (sheet 101/2) provided and answer the following questions.

**(a) (i)** Name **two** map sheets to the eastern part of Mumias. **(2mks)**

**(ii)** Give six-figure grid reference of Buhuyi dam in the northern part. **(2mks)**

**(iii)** What is the bearing of Mungabo school from Tingolo school? **(2mks)**

**(b) (i)** -Give the general direction of flow of river Nzoia. **(2mks)**

**(ii)** Identify **three** human made features in grid square 5037. **(3mks)**

**(c)** Identify **three** types of natural vegetation in the area covered by the map. **(3mks)**

**(d)** Describe the relief of the area covered by the map. **(5mks)**

**(e)** Citing evidence from the map, identify economic activities carried out in Mumias. **(6mks)**

**7.(a) (i)** Differentiate between minerals and rocks. **(2mks)**

**(ii)** State **five** characteristics of minerals. **(5mks)**

**(b)** Describe how igneous rocks are formed. **(6mks)**

**(c)** Give **two** examples of each one of the following categories of sedimentary rocks.

**(i)** Mechanically formed rocks. **(2mks)**

**(ii)** Chemically formed rocks. **(2mks)**

**(d)** Explain the significance of rocks to the economy. **(8mks)**

**8.(a) (i)** State **three** causes of faulting. **(3mks)**

**(ii)** Differentiate between a normal fault and a reverse fault. **(4mks)**

**(b) (i)** A part from rift valley, give **two** other relief features formed due to faulting. **(2mks)**

**(ii)** With the aid of diagrams, describe how compressional forces can lead to formation of a rift valley. **(8mks)**

**(c)** Explain **four** effects of faulting on drainage. **(8mks)**



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**9. (a) (i)** What are ocean tides? **(2mks)**

**(ii)** Name **two** ocean currents along the western coast of Africa. **(2mks)**

**(b)** State **three** factors that determine the rate of coastal erosion. **(3mks)**

**(c)** With the aid of labelled diagrams, describe the formation of the following coastal features:

**(i)** Fringing reef **(5mks)**

**(ii)** Spit **(5mks)**

**(d)** Explain the significance of oceans to human activities. **(8mks)**

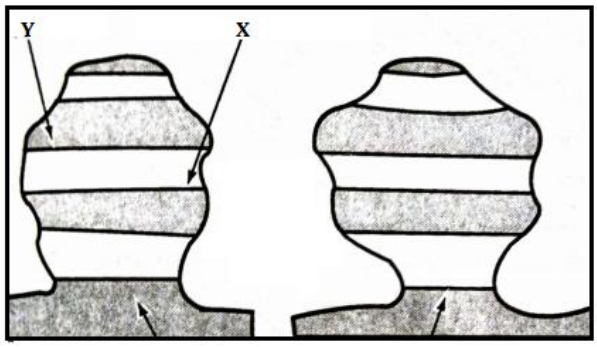
**10. (a)(i)** Give **two** classifications of deserts according to the nature of their surfaces. **(2mks)**

**(ii)** Name **three** hot deserts in the world. **(3mks)**

**(b)**State **three** factors that influence wind transportation in deserts. **(3mks)**

**(c)**The diagrams below show the formation of a feature of wind erosion in an arid area.

Use it to answer the questions that follow.




**(i)** Name the parts labeled **X** and **Y**. **(2mks)**

**(ii)** Describe how the feature is formed. **(5mks)**

**(d)** Members of your class plan to conduct a field study in an arid area in northern Kenya.

**(i)** State **three** characteristics of arid areas they are likely to observe during the study. **(3mks)**

**(ii)** Identify **four** features of water erosion in arid areas you are likely to study. **(4mks)**

**(iii)**What problems are you likely to experience during the study? **(3mks)**



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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**HISTORY AND GOVERNMENT PAPER ONE**
**311/1 FORM THREE (3)**
**Time: 2½ Hours**

**Instructions to candidates:**

**a)** This paper consists of three sections A, B and C.
**b)** Answer all the questions in section A, three questions in section B and two questions in section C.
**c)** Answers to all questions must be written in the answer booklet provided.
**d)** Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing.
**e)** Answer all questions in English.

**For Examiner's use only**

| SECTION A | SECTION B | | | SECTION C | | TOTAL |
|---|---|---|---|---|---|---|
| 1-17 | | | | | | |
| | | | | | | |

**SECTION A (25 MARKS)**
**Attempt all the questions from this section.**

**1.** Identify the **main** source of History and Government of the Kenyan communities during the pre – colonial period. **(1mk)**

**2.** Mention **two** crops that the Portuguese introduced at the East African Coast. **(2mks)**

**3.** State **two** features of missionary education in Kenya during the colonial period. **(2mks)**

**4.** Mention the **main** ideological difference between Kenya African National Union and Kenya African Democratic Union**.** **(1mk)**

**5.** Give **two** reasons why Africans in Kenya were not willing to provide labour in settle farms during the colonial period**.** **(2mks)**

**6.** State **two** natural calamities that influenced the migration of the Eastern Cushites into Kenya. **(2mks)**


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**7.** Name the species that was first discovered at Fort Ternan in 1961. **(1mk)**

**8.** Identify **two** written documents that contain the history of East Africa Coast before 1500 AD. **(2mks)**

**9.** State **one** reason why the Akamba lost dominance in the long distance trade during the 19th C. **(1mk)**

**10.** Give the immediate reason for declaration of the state of emergency in 1952 in Kenya. **(1mk)**

**11.** Define the concept "Conflict Resolution". **(1mk)**

**12.** Identify the type of constitution used in Kenya. **(1mk)**

**13.** Identify **two** social interactions that can promote national unity in Kenya. **(2mks)**

**14.** The constitution of Kenya was promulgated on 27th August 2010. What is promulgation? **(1mk)**

**15.** State **two** circumstances under which an unknown child granted citizenship by birth by birth can have the citizenship revoked. **(2mks)**

**16.** State the **main** declaration of Devonshire White Paper of 1923. **(1mk)**

**17.** Identify **two** ways in which Kenyan communities responded to British invasion and occupation. **(2mks)**

## SECTION B (45 MARKS)

**Attempt any three questions from this section.**

**18. a)** Name **three** communities that belong to the Highland Bantu**.** **(3mks)**

**b)** Explain **six** effects of the migration and settlement of the Bantu. **(12mks)**

**19. a)** Give **five** factors that facilitated plantation Agriculture by Seyyid Said in East Africa Coast. **(5mks)**

**b)** Explain **five** effects of Long Distance Trade. **(10mks)**

**20.** a) State **five** causes of Agiryama Resistance. **(5mks)**

b) Explain **five** reasons why Armed Resistance failed in Kenya **(10mks)**

**21.** a) Identify **five** causes of the rise of independent churches and schools in Kenya. **(5mks)**

b) Explain **five** problems faced by Independent churches and schools. **(10mks)**

## SECTION C (30 MARKS)

**Attempt any two questions from this section.**

**22. a)** State **three** limitations to the Right to Assembly, Demonstration, Picketing and Petition. **(3mks)**

**b)** Explain **six** responsibilities of a citizen. **(12mks)**

**23. a)** Identify **five** aspects/features of the independence constitution of Kenya . **(5mks)**

**b)** Explain **five** characteristics of a good constitution. **(10mks)**

**24. a)** Give **five** rights of an arrested person**.** **(3mks)**

**b)** Explain **five** functions of the Kenya National Human Rights and equality commission. **(12mks)**



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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

## 441/1
## HOME SCIENCE
**(Theory)**
**Time: 2 hours**

**Instructions to students**

- Write your name, class, and admission number in the spaces provided.
- Sign and write the date of the exam in the spaces provided.
- The paper consists of three sections: **A, B** and **C.** Answer all the questions in section A and B and any two questions in section C. Answers to all questions must be in the spaces provided.
- The paper has 13 printed pages. Check to see that all the pages are printed and no questions are missing.

**For examiner's use only**

| Section | Question | Maximum Score | Student's Score |
|---|---|---|---|
| A | 1-19 | 40 | |
| B | 20 | 20 | |
| C | | 20 | |
| | | 20 | |
| Total Score | | 100 | |

**SECTION A** (40 marks)

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

**1.**List down **four** shaping and molding tools**.** **(2mks)**

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**2.**State **two** ways vitamin B1 is important in the body**.** **(2mks)**

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**3.**Give **two** points to consider when steeping clothes. **(2mks)**

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**4.**What **two** remedies would a pregnant mother use to deal with morning sickness. **(2mks)**

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**5.**Suggest **two** characteristics of foods that have been overcooked by prolonged boiling. **(2mks)**

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**6.**Give the function of each of the following pattern markings used in garment instruction.

**a)** Darts **(1mk)**

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**b)** Place on fold **(1mk)**

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**7.**Outline **two** practices that ensure feet remain healthy. **(2mks)**

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**8.**Differentiate between open fracture and closed fracture**.** **(2mks)**

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**9.**List down **two** stitches used to transfer pattern markings. **(2mks)**

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**10.** Give the functions of the following needlework equipment**.** **(3mks)**

**a)** Bodkin

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**b)** Crewel needles

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**c)** Push pin cushions

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**11.** Give **two** reasons why silk is not used by beginners during garment construction. **(2mks)**

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**12.** Mention **two** disadvantages of impulse buying. **(2mks)**

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**13.** Give the reasons for putting naphthalene balls in storage cupboards of woolen articles. **(2mks)**

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**14.** Suggest **two** advantages of using an egg slicer. **(2mks)**

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**15.** Suggest **two** reasons why weaning dishes are basically prepared using boiling method. **(2mks)**

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**16.** State **two** factors that influence the choice of gathers as a method of disposing fullness. **(2mks)**

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**17.** Name **four** accessories that a young woman should include in her wardrobe. **(2mks)**

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**18.** Highlight **three** qualities of well-made hems. **(3mks)**

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**19.** What is a snack as used in meal planning**?** **(2mks)**

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**SECTION B (20 marks)**

***Compulsory.***

**Answer this question in the spaces provided.**

**20.** Your mother has asked you to assist her during the half term break with some household tasks.

**a)** Outline the procedure you would use to launder her viscose rayon dress. **(10mks)**

**b)** Write down the procedure you would use to thorough clean your green canvas bag. **(10mks)**



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## SECTION C (40 marks)

**Answer any two questions from this section.**

**21. a)** State **four** measures taken to ensure a room where meals are taken is appropriate and comfortable. **(4mks)**

**b)** Discuss **four** factors to consider before setting a table. **(8mks)**

**c)** Explain **four** points to consider in order to make good gathers**.** **(8mks)**

**22. a)** State **four** factors that may interfere with the family budget**.** **(4mks)**

**b)** Explain **three** reasons that can make a lactating mother turn to bottle feeding. (**6mks)**

**c)** State **four** pieces of information found at the front of a commercial paper pattern. **(4mks)**

**d)** Highlight the remedies of the following machine faults. **(6mks)**

**i)** Stitches looping

**ii)** Machine feeding the fabric through badly

**23. a)** Highlight **six** factors to bear in mind when preparing food for an HIV/AIDS patient. **(6mks)**

**b)** State **four** disadvantages of play items in the development of a child. **(4mks)**

**c)** Explain **three** problems a consumer may face while purchasing a body lotion. **(6mks)**

**d)** Outline **four** points to observe on the care of a sewing machine**.** **(4mks)**

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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**ISLAMIC RELIGIOUS EDUCATION/314**

**FORM THREE**

**TIME: $2^1/_2$ HRS**

**INSTRUCTIONS:**

1. This paper contains six (5) questions.
2. Answer ALL the questions
3. Write your answers in the answer sheet provided.
4. All answers must be in English.

**1 a)** State the importance of Qur'an to Muslims. **(8mks)**

**b)** Explain the benefits of memorizing the Holy Quran **(8mks)**

**c)** Identify the code of conduct prescribed in Surah Al-Nuur (Q24). **(4mks)**

**2 a)** The prophet (p.b.u.h) said: "Searching knowledge is essential for every Muslim male and female." In reference to the hadith, state the Islamic teachings on seeking of knowledge **(7mks)**

**b)** State the reasons for the emergence of forged hadith. **(7mks)**

**c)** Why did human beings need divine guidance? **(6mks)**

**3 a)** Explain the types of Sijdahs (prostrations). **(8mks)**

**b)** Hussein Kassim, a form four student is aspiring to become a Mujtahid. Identify five Qualities he must possess to qualify as a Mujtahid. **(5mks)**

**c)** Explain seven factors that led to the emergence and growth of schools of thought (Madh-habs). **(7mks)**

**4 a)** List down six forbidden foods and drinks according to the Quran. **(6mks)**

**b)** Ali and his friends are about to have lunch. List down seven Islamic manners of eating they should observe. **(7mks)**

**c)** Mwanaidi and her husband have been divorced after eight years of marriage. Highlight how their children can be affected by the divorce? **(7mks)**

**5 a)** State five terms of the Madina Constitution. **(5mks)**

**b)** Discuss how the coastal City states aided the spread of Islam in East Africa between 1700-1900 AD. **(10mks)**

**c)** Explain five lessons that a Muslim can learn from the life of Sheikh Abdallah Swaleh Al-Farsy. **(5mks)**



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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**JINA: ……..……**

**SHULE: ……..……**

**NAMBARI YA SAJILI: ……...……. SAHIHI:……..……..… TAREHE: ……..**

**KIDATO CHA 3**
**102/2**
**KISWAHILI**
**Karatasi ya 2**
**LUGHA**
**MUDA: SAA 2 ½**

**Maagizo**

**a.** Jibu maswali **yote**

**b.** Majibu yote yaandikwe katika nafasi ulizoachiwa katika karatasi hii ya maswali

**c.** Majibu yote **lazima** yaandikwe kwa lugha ya Kiswahili

**d. Watahiniwa ni lazima wahakikishe kuwa kurasa zote za karatasi hii zimepigwa chapa sawasawa na kuwa maswali yote yamo.**

**Kwa matumizi ya mtahini pekee**

| Swali | Upeo | Alama |
|---|---|---|
| 1 | 15 | |
| 2 | 15 | |
| 3 | 40 | |
| 4 | 10 | |
| Jumla | 80 | |

## 1. UFAHAMU

**Soma makala yafuatayo kisha ujibu maswali.**

Bwana Ngurumo alikuwa mlevi wa kutajika kijijini mwake. Hakuna aliyekosa kusimulia kisa cha mzee huyu. Ngurumo hakusifiwa tu na wapiga maji wenzake kwa umahiri wake katika kuubugia uji mchachu bali pia alisifiwa na watoto na vijana wa kijijini kwa sauti yake ya ninga hasa alipokuwa ameonja zake mbili tatu.

Ngurumo alikuwa mfanyikazi katika shamba moja la mkwasi aliyepanda chai kwa madhumuni ya kuiuza ughaibuni. Mshahara wake haukuwa mdogo mno, kwani ndiye aliyekuwa msimamizi wa shamba hili. Kipato alichopata kingeweza kuikidhi familia yake ya watoto na mke mmoja ambaye pia alifanya kazi katika shamba la mkwasi huyu.


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Hata hivyo bwana Ngurumo alikuwa daima yu waya. Kila mwisho wa mwezi ulimwengu mzima ulimtambua. Alikuwa na hulka ya kuamka alfajiri na mapema Ijumaa ya mwisho wa mwezi kuelekea posta kuutwaa mshahara wake. Mara tu baada ya kuupokea mshahara wake, angeshika njia hadi kwa mgema mashuhuri katika mtaa wao na kupiga kachombe kwenye vidimbwi vya pombe hadi misuli ya tumbo lake ilipochoka na kulalamika. Baada ya kuogolea huko, Ngurumo angekuwa hana hanani na kumrudia maskini mkewe uso kauinamisha kwa hayaturi. Nyumbani mkewe angepata kibarua kingine cha kumuuguza simba wake kwa siku kadha kabla yeye Ngurumo hajarudi kazini. Ilimbidi mke kuyatibu maradhi ya Ngurumo ambayo hayakuskia dawa nyingine ila mchuzi wa nyama. Alijibadilisha kwa vyovyote vile kumtibu mumewe huyu. Hasa siku za mwanzo. Baadaye stahamala ilianza kumwishia hasa baada ya kugundua kuwa mzigo wa malezi ya mwanawe ulimlemea yeye. Alianza kumsihi mumewe aache mchezo huo ambao ulitishia kumfanya amwage unga wake na kudhoofisha zaidi afya yake ambayo tayari ilikuwa inadidimia. Hata hivyo, maneno ya Ridhaa yaliangukia moyo wa jabali lisilosikia la mwadhini wala la mteka maji msikitini. Ngurumo alikataa katakata kuacha uraibu wake huku akidai kuwa mume asiyeonja vileo hayamudu maendeleo na kwamba hawezi kukubali kudhibitiwa na mwanamke asilnai.

Mkewe alizungumza naye hadi **alipokata tamaa na kukata kauli** kumwendea mshauri aliyekuwa na kliniki yake hapo mtaani kulilia hali yake. Mshauri huyu alipozugumuza na Bwana Ngurumo, Ngurumo alijawa na hamaki kubwa. Akalalamika kuwa mkewe alikuwa amemvua nguo hadharani na kuapa kumpatiliza. Jioni hiyo nyumbani mwa Ngurumo kulisikika kilio kikubwa zaidi ya kile cha kawaida. Majirani ambao walikuwa wameizoea hali ya Ngurumo kumpiga mkewe mara kwa mara, walikuwa wameamua kutoyaingilia masuala yasiyowahusu. Hata hivyo vilio vya watoto viliwatia imani, wakaamua kumkabili hasidi huyu. Ngurumo alipoombwa kufungua mlango wa nyumba alikataa, akidai kwamba haikufaa majirani kuingilia mambo yake ya unyumba. Hata hivyo baada ya shinikizo la majirani, alifungua, akatoka na kujiendea zake na kumwacha mkewe kuwamwagia kuku mtama. Mtima aliwaeleza majirani masaibu aliyokuwa ameyapata. Alisema kwamba Bwana Ngurumo alikuwa ameitelekeza familia yake. Hakujua njaa wala shibe yao. Hakulipa karo ya watoto ambao walifukuzwa shule, ulevi wa Ngurumo ulikuwa umemtia kwenye madeni mara kwa mara. Baaada ya kusikiliza kisa cha mkewe Ngurumo, mmoja wa majirani alimshauri Ridhaa kumwendea mwajiri wa Ngurumo ili kushtakia hali. Aliandamana na mke hadi kwa tajiri wa Ngurumo.

Tajiri huyu alisikitika sana na kukashifu kutowajibika kwa Ngurumo. Alimwita Ngurumo mbele ya mkewe na jirani yake na kumwambia kuwa ingebidi aidha akubali robo tatu ya mshahara wake uwaendee wanawe hadi pale atakapobadilika au ajiuzulu kazi. Ngurumo hakuwa na budi. Alikubali shingo upande kumpa mkewe robo tatu za mshahara wake kila mwezi ili kukidhi mahitaji ya familia yake. Robo iliyobaki Ngurumo aliitwaa yeye kwa mahitaji yake binafsi. Baada ya kisa hiki cha kufedhehesha, Ngurumo aliapa kuacha ulevi. **Alimtupa jongoo na mti wake**; akaacha kuandamana na marafiki waliomhimiza kulewa kila mara. Hali ya familia yake ikaimarika, watoto wakaacha kufukuzwa shule, naye Ngurumo **siha** yake ikaanza kunawiri.

**Maswali**

**a.**Taja mambo mawili yaliyomfanya Ngurumo kusifiwa katika mtaa wake **(alm2)**

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**b.** Kulingana na taarifa, ulevi ulimwathiri vipi Ngurumo? **(alm4)**

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**c.**Mtima alifanya nini kumsaidia mumewe kuacha ulevi? **(alm2)**

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**d.** Majirani na mwajiri wa Ngurumo walimsaidiaje mkewe kupata haki? **(alm2)**

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**e.**Maneno "alipokata tamaa na kukata kauli?'' ni mbinu ipi ya mtindo **(alm1)**

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**f.** Taja njia mbili ambazo Ngurumo alitumia kuacha ulevi**.** **(alm2)**

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**g.**Eleza maana ya maneno yafuatayo kama yalivyotumika katika kifungu. **(alm2)**

**(i)** siha

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**(ii)** Alimtupia jongoo na mti wake

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## A. UFUPISHO

**Soma makala haya kisha ujibu maswali**

Ni dhamira ya mwanafunzi yeyote kupata matokeo mazuri katika mtihani wa kitaifa punde tu anapojiunga na shule iwe ni ya sekondari au msingi.Matokeo hayo hutokea baada ya miaka minane katika shule za msingi na miaka minne katika shule za sekondari. Hata hivyo, punde tu matokeo yanapotangazwa, wengine hujipata wanyonge kwa kugundua kuwa wamefeli au wameambulia nunge kwa mtihani wao wa mwisho.

Miongoni mwa mambo yanayosababisha hali kama hii ni mwelekeo mbaya wa wanafunzi katika baadhi ya masomo. Tunajua kweli kuwa palipo na ushindani lazima kuwe na mshindi na mshindwa. Iwapo ungemwuliza mtahiniwa akueleze jinsi anavyohisi baada ya kushindwa kwenye mtihani wa kitaifa, hatakuwa na la ziada ila kukueleza kuwa hajaridhishwa na matokeo.

Wengine wao hata huvuka mipaka na kuyataja matokeo yao mabaya kusababishwa na vizingiti fulani au kuwakashifu walimu kwa kudai kuwa kulikuwa na hali ya kuonewa darasani. Unapochunguza zaidi, utakuta ya kuwa wanaodaiwa kuwa werevu ni walio stadi katika masomo ya sayansi yanayofikiriwa kuwa magumu.
Wakati wanaofikiriwa kuwa werevu wanapofanya vyema katika mitihani yao, wale wanaokisiwa kuwa wajinga ambao wamefeli hujipata wakiomboleza kwa huzuni kwa muda mrefu.

Swali la miaka mingi kuhusu elimu limekuwa ni kwa nini wanafunzi wote hawawezi wakafanya vyema na kufaulu katika mitihani ya kitaifa. Utafiti uliofanywa umebainisha wazi kwamba kunazo sababu kadhaa zinazochangia matokeo mabaya.
Mojawapo ya sababu hizo, na ambayo ni muhimu sana ni ukosefu wa nidhamu shuleni. Mwanafunzi wa aina hii hajali anachoambiwa na walimu na aghalabu muda wake mwingi unapotelea katika adhabu.

Wakati mwanafunzi anapokosa nidhamu iwe kwa wazazi au walimu wake, masomo yake huathirika. Matokeo yake katika mitihani hayatakuwa mazuri. Ni Lazima tabia ya mwanafunzi iambatane na matokeo yake. Sababu nyingine ni mshituko unaowapata punde tu wanapoketi kwenye viti vyao kufanya mitihani ya kitaifa. Mtahiniwa anapojikuta katika hali hii, kuna uwezekano asifaulu katika masomo yake.Kuna uwezekano wa wanafunzi aliyefeli katika mtihani wa darasa la nane kufanya vyema katika shule ya upili na kupita mtihani wake wa kidato cha nne. Ilibainika pia kuwa wale waliofaulu katika mtihani wa darasa la nane hulegeza juhudi zao masomoni na huwa hawapati alama zinazoambatana na zile walizopata katika shule za msingi.

Sababu nyingine ya kuwafanya wanafunzi kutofanya vyema katika mtihani ni kubaguliwa kwa wanafunzi hafifu na walimu na kukosa kushughulikiwa ipasavyo. Baadhi ya walimu wanapogundua kuwa wanafunzi fulani hawafanyi vyema katika masomo fulani, hawatumii muda wao mwingi kuwasukuma ili kuyaboresha matokeo. Badala yake huwashughulikia wanaoelewa haraka darasani.Kuna wanafunzi wengine wanaochukua muda mrefu kuelewa, si ya kwamba ni wajinga, la, ni katika somo moja tu. Ni wajibu wa mwalimu kuhakikisha mwanafunzi kama huyu anapata nafasi ya kuelewa anachofunzwa.

Wanafunzi wengine hawafanyi vyema kwa sababu wazazi wao hawamudu kuwalipia karo kwa sababu ya umaskini, hawawezi hata kulipia masomo ya ziada kwa shule zinazosomesha wanafunzi wakati wa likizo.Kulingana na takwimu za elimu, muda wa kawaida hautoshi kukamilisha mtaala wa masomo ya mfumo wa 8-4-4, kwani ni mpana sana. Walimu wanaombwa kushughulikia mafunzo ya ziada.

## MASWALI


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**a)** Bila kubadilisha maana, fupisha aya tatu za mwanzo. Maneno (55 – 60). **(Alm7)**

**Matayarisho**

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**Jibu**

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**b).** Fafanua sababu zinanzowafanya wanafunzi kutofua dafu katika masomo yao. Maneno ( 50 – 55) **(Alm6)**

**Matayarisho**

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**Jibu**

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## C: MATUMIZI YA LUGHA (alama 40)

**a)** Andika neno linaloundwa kutokana na sauti zifuatazo; Kipasuo sighuna cha kaakaa laini, Irabu ya nyuma kati, kipasuo sighuna cha midomoni, irabu ya chini kati. **(alm1)**

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**b)** Tambua muundo wa silabi katika neno chimbua. **(alm1)**

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**c)** Tia shadda katika maneno yaliyokolezwa ili kuleta maana iliyokusudiwa. **(alm2)**
Barabara zote zilisakafiwa **barabara**

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**d)** Ainisha mofimu katika neno lifuatalo. **(alm3)**
Hawatasamehewa

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**e)** Tunga sentensi moja kudhihirisha matumizi mawili ya alama ya kibainishi **(alm2)**

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**f)** Tunga sentensi itakayodhihirisha wakati uliopo hali ya kuendelea. **(alm2)**

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**g)** Tunga sentensi ukitumia kivumishi cha a-unganifu pamoja na nomino wema. **(alm2)**

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**h)** Ainisha virai vilivyopigiwa mstari katika sentensi ifuatayo. **(alm2)**
<u>Yule mdogo sana</u> alisafiri <u>asubuhi kwa gari.</u>

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**i)** Tunga sentensi kwa kutumia kishazi tegemezi kama;

**(i)** Kiwakilishi

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**(ii)** Kielezi

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**j)** Andika sentensi ifuatayo upya ukianza kwa shamirisho kipozi. **(alm2)**
Wageni wetu walikula chakula kitamu kwa kijiko.

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**k)** Tunga sentensi zenye miundo ifuatayo. **(alm4)**

**(i)** KN (N+RV) + KT(t+v)

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**(ii)** KN(Ø) + KT (T+T)

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**l)** Kanusha sentensi ifuatayo. **(alm1)**
Mama ndiye aliyenitembelea shuleni jana..

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**m)** Andika sentensi upya ukitumia neno lililopigwa mstari kama kielezi. **(alm1)**
Mwalimu wetu aliandika kitabu <u>kizuri</u> akatupa tusome.

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**n)** Geuza sentensi ifuatayo iwe aktika usemi wa taarifa.
Lo! Unasoma nini ilhali wenzako wanafanya mtihani huu?" Mwalimu aliuliza. **(alm3)**

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**o)** Dunisha sentensi ifuatayo.
Sahani zilizonunuliwa zitahifadhiwa kwa ndoo hizi.

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**p)** Andika maana mbili zinazojitokeza katika sentensi ifuatayo.


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Shangazi aliletewa wanawe. **(alm2)**

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**q)** Andika kinyume cha sentensi ifuatayo. **(alm2)**

Kaasisi alimbariki mwumini karimu

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**r)** Bainisha matumizi ya na katika sentensi ifuatayo. **(alm2)**

Musa na Abdala wamepatwa na msiba

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**s)**Unda kitenzi kutokana na nomino zawadi.

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**t)** Tunasema thurea ya nyota,..... ya milima na ..... ya ndizi. **(alm2)**

**u)** Mtu ambaye amekosea wenzake heshima anaweza kuambiwa methali gani ili kumwonyesha kuwa hakuna hasara katika kuheshiu wenzake? **(alm1)**

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## 4. Isimu Jamii (Alama 10)

*...marehemu ametuacha bila sisi kutarajia. Kweli kifo haina huruma. Tulimpenda sana lakini Mungu alimpenda zaidi kwa hivyo japo tuna machungu mno, tunamwachia Mola kwani ana sababu zake na atatulinda yeye without fail…*

**a)** Tambua sajili ya makala haya. **(alm2)**

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**b)** Eleza sifa nane ambazo zimejitokeza katika kifungu hiki **(alm8)**


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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**121**

## FORM 3
## Mathematics
## TIME: 2½ HOURS

**Instructions**

- Write your name, class and admission number in spaces provided above.
- The paper contains **two** sections **A** and **B.**
- Answer **ALL** questions in section **A** and **any five** from section **B** in the spaces provided below each question.
- Marks may be given for correct working even if the answer is wrong.
- Non-programmable silent electronic calculator and KNEC mathematical tables may be used, except where stated or otherwise.

## For Examiner's Use Only
## SECTION A

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

## SECTION B

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

**GRAND TOTAL**



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## SECTION A (50 MARKS)

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

**1.** Translation T is represented by the column vector $\begin{pmatrix}5\\4\end{pmatrix}$ and another translation U by column vector $\begin{pmatrix}-3\\2\end{pmatrix}$. A point P is mapped to a point Q by T and then Q is mapped to a point R by U. If R has coordinates $(7,-4)$ determine the coordinates of P. **(3mks)**

**2.** Solve for x in $\log(2x+4)-\log(x-1)=3\log 2$. **(3mks)**

**3.** The average of the first and fourth terms of a GP is 185. Given that the first term is 27, find the common ratio. **(3mks)**

**4.** The equation $3x^2 - 8px + 12 = 0$ has real roots. Find the value of P. **(3mks)**



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**5.**Simplify without using tables or calculators: **(3mks)**

$$\frac{\sin 480^0 - \cos 765^0}{\tan 225^0 - \cos(-330)^0}$$

**6.**Solve the inequalities and represent the information on a number line. **(3mks)**

$$-3+2x<3x+2<2(x+2)$$

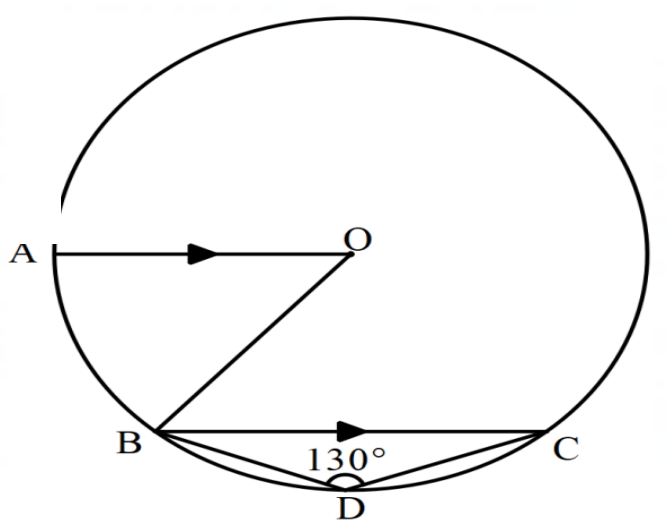
**7.**Make h the subject of the formula $n = \sqrt[3]{\frac{yx^2h}{m-h}}$ **(3mks)**

**8.**Given x = 13.4cm and y = 4.3 cm. calculate the percentage error in $\frac{x}{y}$ correct to 4 d.p **(3mks)**


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**9.** A hollow cylindrical alloy of length 40mm has a mass of 352g. If its internal radius is 3cm and its 0.01m thick; calculate the density of the metal used to make the alloy in kg/m$^3$. Take pi as 22/7. **(3mks)**

**10.** In the figure below, O is the centre of the circle. AOis parallel to BC and angle BDC $= 130°$.




A polygon whose exterior angle $\angle AOB$ above is formed. Find;

**(a)** Sum of interior angles of the polygon. **(3mks)**

**(b)** Name of the polygon. **(1mk)**

**11.** Solve for x in the equation; **(3mks)**

$$25^x - 5^{2x-1} = 500$$


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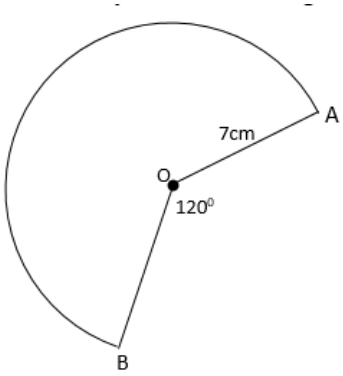
**12.** Using a ruler and pair of compasses only. Draw parallelogram ABCD in which AB = 8 cm, BC = 5cm and $< ABC\ is\ 105^0$. Construct circle touching edges AB, AD and DC and measure its radius. **(4mks)**

**13.** A line $L_1$ whose equation is $5x - 3y - 15 = 0$ passes through the points A and B. Point A is on the x-axis while point B is equidistant from x and y-axes and ties in the fourth quadrant of a Cartesian plane. Calculate the exact coordinates of points
A and B. **(3mks)**

**14.** Given that $6\cos(x + 15)° - 6\sin(2x - 30)° = 0$, find $\tan(2x - 10°)$ leaving your answer in surd form. **(3mks)**

**15.** A cone is made from a sector whose dimensions are given below. Calculate the volume of the cone. $\left(Take\ \pi = \frac{22}{7}\right)$. OA = OB = 7cm radius of the sector and
$< AOB = 120^0$.Give your answer to 3 significant figures. **(3mks)**


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**16.** The cash price of a music system is kshs. 30,000. It can be bought under hire purchase terms by paying a deposit of kshs. 10,000 and twelve monthly installments of Kshs. 3,200 per month. Determine the percentage rate of interest per month. **(3 marks)**

## SECTION B (50 MARKS)

*Answer any **FIVE** questions from this section in the space provided*

**17.** The frequency distribution table below shows the mass in kilograms (kg) of parcels delivered by a courier company to their office in Lubao.

| Mass (kg) | 50 – 99 | 100 – 199 | 200 – 249 | 250 - 349 |
|---|---|---|---|---|
| Number of parcels | 380 | 230 | 160 | 170 |
| Frequency density | | | | |

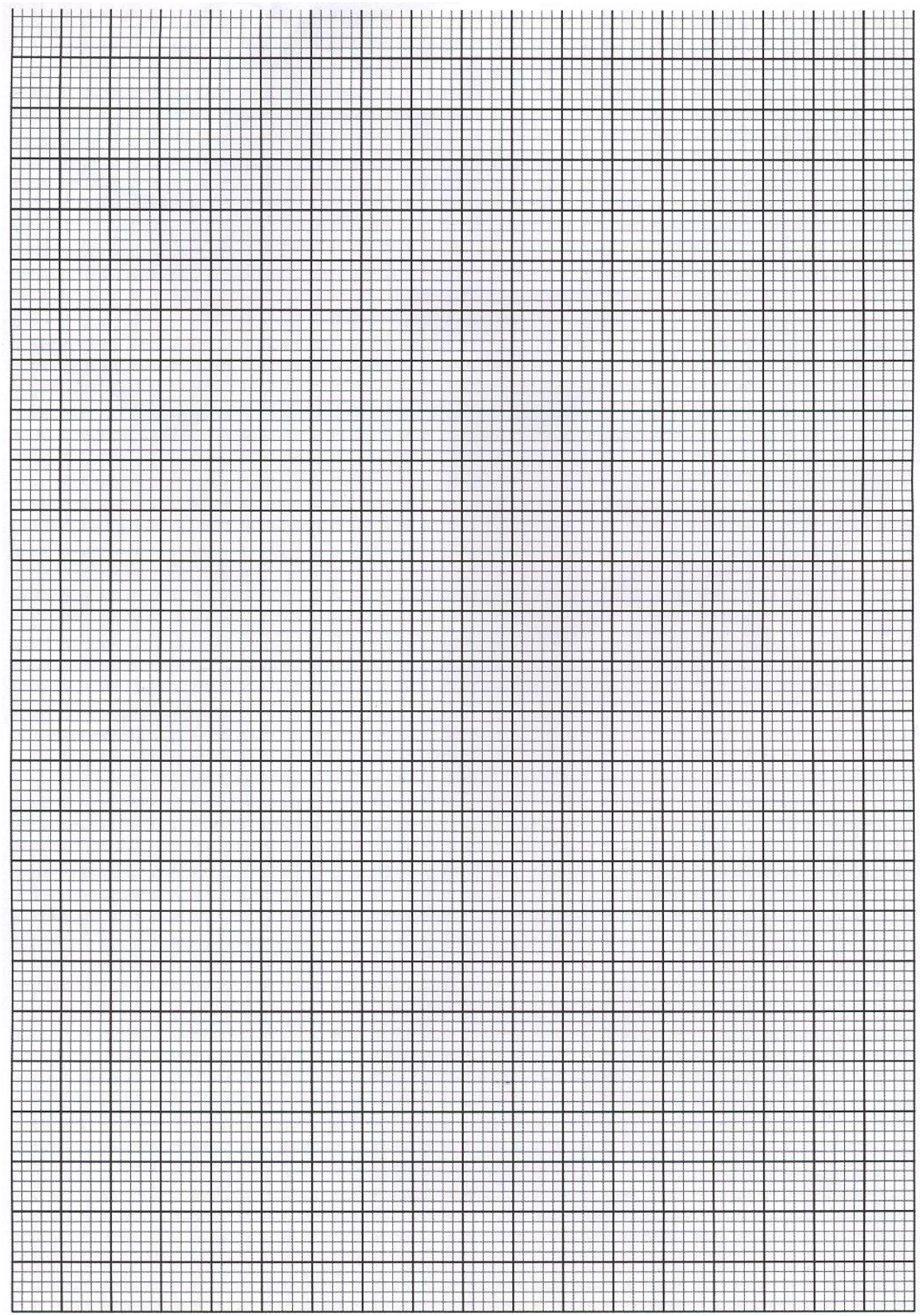
**(a)** Complete the table above to 1dp. **(2mks)**

**(b)** On the grid provided below, draw a histogram to represent the information shown in the table above. **(3mks)**

**(c)** Draw a vertical line in the histogram where the median lies. Show your calculations using the graph. **(3mks)**

**(d)** Use the histogram to determine the number of parcels with a mass of 300kg or more delivered by the courier company. **(2mks)**


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**18.** Given that $P = \begin{pmatrix} 8 & 5 \\ 6 & 9 \end{pmatrix}$ ,find $P^{-1}$ **(2mks)**

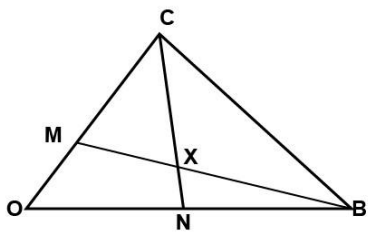
**(a)** Dayan bought 8 T – shirts and 5 pairs of shorts at a total cost of kshs. 4400. Had he bought 6 T – shirt sand 9 pairs of shorts, he would have spent ksh. 1000 more.

**(i)** Form two equations to represent the above information. **(2mks)**

**(ii)** Use matrix method to determine the cost of a T – shirt and a pair of shorts. **(3mks)**

**(b)** Three months later the price of a pair of shorts went up. Dayan bought 5 T – shirts and 5 pairs of shorts at a total cost of ksh. 3650. Find the percentage increase in the price of a pair of shorts. **(3mks)**

**19.** The figure below shows a triangle OAB with O as the origin. ***OA=$\underline{a}$ OB = $\underline{b}$, OM 2/5$\underline{a}$ and ON = 2/3$\underline{b}$.***





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**a)** Express in terms of $\underline{a}$ and $\underline{b}$ the vectors

**(i)** BM **(1mk)**

**(ii) AN** **(1mk)**

**b)** Vector OX can be expressed in two ways: OB + KBM or OA + hAN, where K and h are constants.

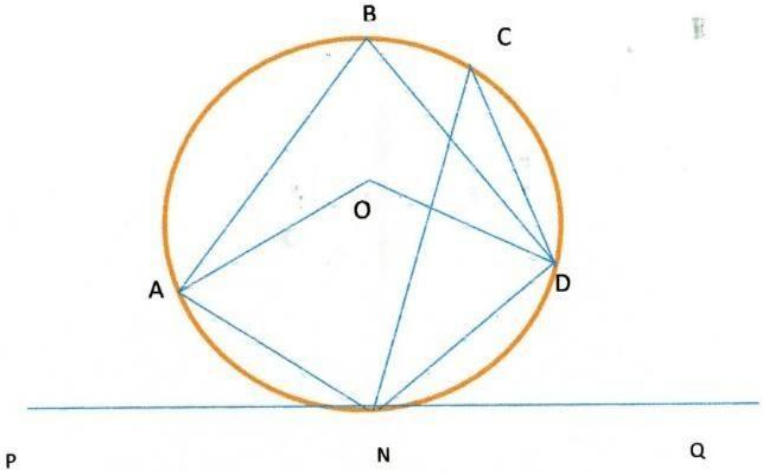
Express OX in terms of:

**i.** $\underline{a}$, $\underline{b}$ and k. **(2mks)**

$\underline{a}$, $\underline{b}$ and h. **(2mks)**

**c)** Find the values of k and h. **(4mks)**

**20.** In the figure below, O is the center of the circle. PQ is a tangent to the circle at N. Angle NCD is $10^{o}$ and angle ANP is $30^{o}$






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Giving reasons find;

**a)** Angle DON **(2marks)**

**b)** Angle DNQ **(2marks)**

**c)** Angle **DBA** **(2marks)**

**d)** Angle ONA **(2marks)**

**e)** Angle ODN. (**2marks)**

**21.** The table below shows the income tax rate for a certain year

| Income in Ksh. p.m | Tax rate(%) |
|---|---|
| 1 – 11180 | 10 |
| 11181 – 21714 | 15 |
| 21715 – 32248 | 20 |
| 32249 – 42781 | 25 |
| 42782 and above | 30 |


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In a certain month, Mr GenZ paid a net tax of Ksh 26416. He was entitled to a monthly personal relief of Ksh 1648. He also paid insurance premiums amounting to 18200 and was entitled to an insurance relief at 15% of premiums paid, subject to a maximum of Ksh 2000 per month. He also lived in a company house for which he paid a nominal rent of 5200 per month. Other taxable allowances amounted to sh. 22400.

**a)** Calculate Mr GenZ's monthly gross tax **(2mks)**

**b)** Calculate Mr Genz's total taxable income in that month **(4mks)**

**c)** Calculate Mr Zakayo's net monthly income. **(4mks)**

**22.** Point B is 110km on a bearing of $S60^0E$ from point A. Point C is 90km on a bearing of065 from B. Point D is 075 from A and $336^0$ from C.

**(a)** Using a scale of 1cm to represent 20km, draw a diagram to show the relative positions of A, B, C and D. **(5mks)**



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**(b)**Use your diagram to determine;

**(i)** the distance and the bearing of B from D. **(2mks)**

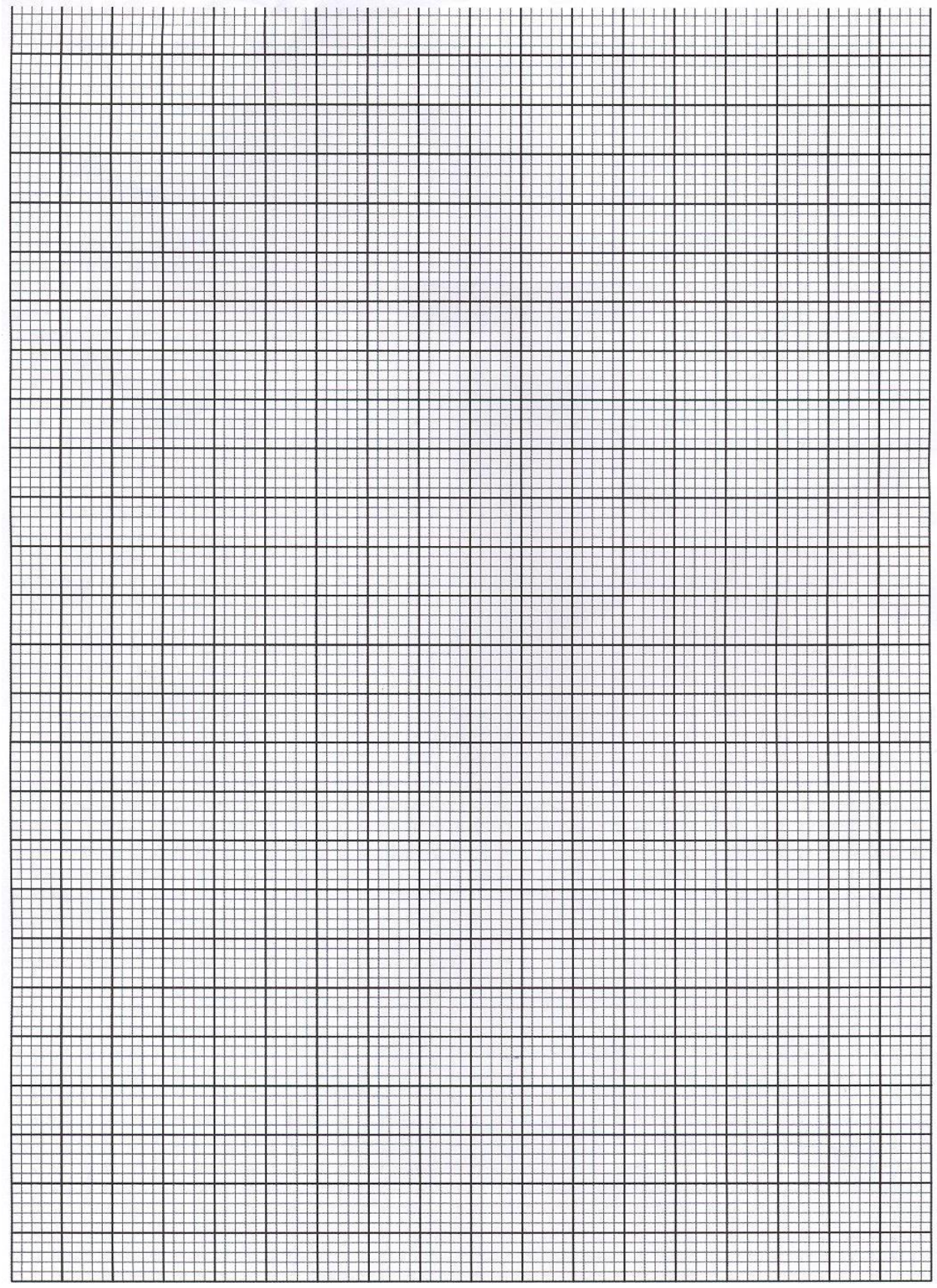
**(ii)** the distance and compass bearing of A from C. **(3mks)**

**23.** (a) A quantity **p** varies directly as the square of **q** and inversely as the square root of **r**. If **q** increases by 20% and **r** decreases by 36%, find the percentage change in **p.** **(3mks)**

**(b)** The velocity of water flowing through a pipe is inversely proportional to the square of the radius of the pipe. If the velocity of the water is 30cm/s when the radius of the pipe is 2cm. Find the velocity of water when the radius of the pipe is 4cm. **(3mks)**

(c) Three quantities X and Y and Z are such that X varies partly as Y and partly as the inverse of the square of Z. When X= 6, Y= 3 and Z = 2. When X = 8, Y=5 and Z = 1. Find the value of X when Y = 10 and Z = 8. **(4mks)**


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**24.(a)** On the grid provided, draw a square (s) with vertices (6,3), (7, 0), (9, 4) and (10, 1). Draw also two straight lines AB and AC where the coordinates of A, B and C are $(1, -2)$. (3, 2) and (0, 1) respectively. $S^1$ is the image of S under reflection in the line AB and $S^{11}$ is the image of $S^1$ under reflection in the line AC. Draw $S^1$ and $S^{11}$. **(7mks)**

**(b)** Describe the transformation which maps S onto $S^{11}$ if the transformation is;

**(i)** Translation **(1mk)**

**(ii)** Rotation **(2mks)**


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# PROGRESSIVE STUDENTS FORM THREE
# MID TERM 3 SERIES ONE EXAMS

**NAME: ……..……**

**SHOOOL: ……..……**

**ADM NO: ……..……. SIGN:……..……..… DATE: ……..**

**Physics paper one**
**232/1**
**Form 3**
**2 hours**

**Instructions to candidates**

- This paper consists of two sections ***A*** and ***B***.
- Answer **all** the questions in the two sections in the spaces provided after each question
- All working **must** be clearly shown.
- Electronic calculators, mathematical tables may be used.
- All numerical answers **should be expressed** in the **decimal** notations.
- You may use:
  - ‘gravitational acceleration, g, as $10m/s^2$
  - Atmospheric pressure = 100, 000 Pa
  - Density of water = $1g/cm^3$
  - Density of air = $1.25kg/m^3$
  - Density of mercury = $13\ 600kg/m^3$

**For Examiner use only**

| SECTION | QUESTION | MAX MARKS | ANDIDATE'S SCOR |
|---|---|---|---|
| A | 12 | 25 | |
| B | 13 | 10 | |
| | 14 | 14 | |
| | 15 | 13 | |
| | 16 | 09 | |
| | 17 | 09 | |
| | TOTAL | 80 | |

**SECTION A (25 MARKS)**

**1.** Figure 1 shows a micrometre’s screw gauge scale with negative zero error of 0.02mm used for measuring the diameter of a ball bearing. Determine the actual diameter of the ball bearing **(2mks)**

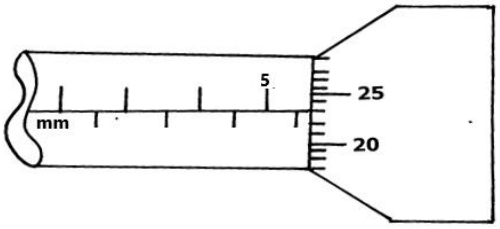



***Figure 2***


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**2.**A Bunsen burner in the laboratory can be tilted over a large angle and still get back to its original position once the tilting force is withdrawn. State two factors that are responsible for this observation **(2mks)**

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**3.**A bullet of mass 20g moving with a velocity of 30m/s penetrates a sand bag and is brought to rest in 0.05s. Find the average retarding force of the sand **(3mks)**

**4.**Explain what is meant by streamline flow. **(1mk)**

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**5.**The figure, 2a below represents a bimetallic strip of metals **X** and **Y** at room temperature. The figure, 2b, below shows its shape when dipped into crushed ice.

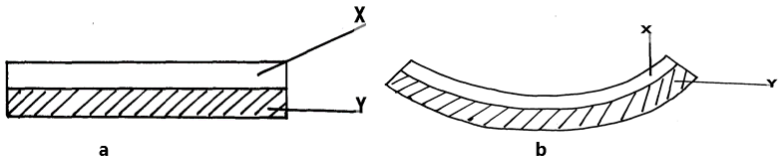



***Figure 3***

Sketch a diagram in the space given below to show the shape when the strip is heated to a temperature above the room temperature **(1mk)**


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**6.**A high jumper lands on saw dust. Explain how the saw dust helps in reducing the impact of force. **(2mks)**

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**7.**Figure 3 shows some air trapped by mercury in a glass tube. The tube is inverted in a dish containing mercury.

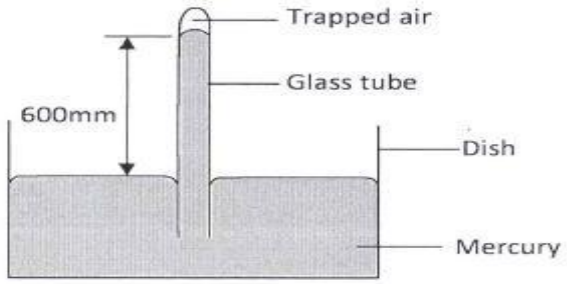



**Figure 4**

Given that the atmospheric pressure is 760 mmHg and the height of mercury column in the tube is 600 mm, determine the pressure of the air trapped in the tube in mmHg. **(3mks)**

**8.**Explain o**n**e advantage of mercury over alcohol as a thermometric liquid**.** **(2mks)**

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

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**10.** Two horizontal strings are attached to a block, resting on a frictionless surface, as shown in figure 4.

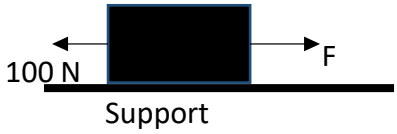



***Figure 5***



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A force of 100N pulls on one string. The block does not move. Find the value of the force, F on the other string. **(2mks)**

**11.** A wooden bench feels neither warm nor cold when touched by your bare hands. Explain this observation. **(2mks)**

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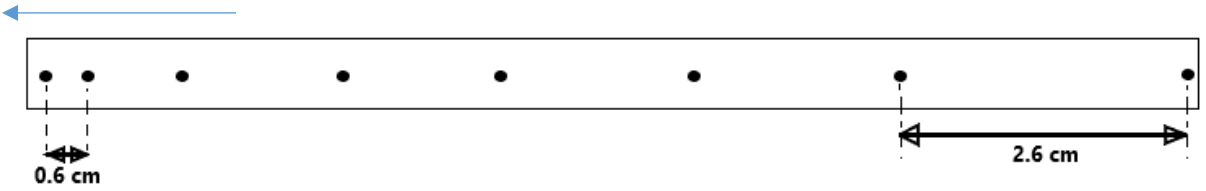
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**12.** The figure below represents part of a tape pulled through a ticker-timer by trolley moving down an inclined plane. If the frequency of the ticker-timer is 50Hz, calculate the acceleration of the trolley. **(3mks)**

***Figure 6***




## SECTION B (55 MARKS)

**13.** In an experiment to determine the diameter of oil molecule, two wooden planks were used on the surface of water sprinkled with lycopodium powder as shown in the figure 6 below.

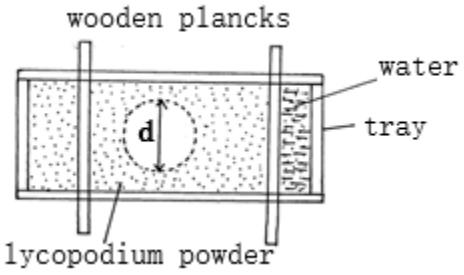



**Figure 7**


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**a)** State the function of the lycopodium powder and the wooden planks in the experiment **(2marks)**

**i)** Lycopodium powder:

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**ii)** Wooden planks:

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**b)** During the experiment, the diameter of the patch was measured to be 20cm for an oil drop of radius 0.25mm. Determine:

**i)** The area of the patch **(2mks)**

**ii)** The volume of the drop **(2mks)**

**iii)** The diameter of one molecule of oil **(2mks)**

**c)** State any two assumptions you have made in your estimation of the diameter of the oil molecule **(2mks)**

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**14.**

**a)** Define the term '**uniform velocity**' **(1mk)**

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**b)** The graph ***figure 7*** below shows displacement –time graph of a body in motion.

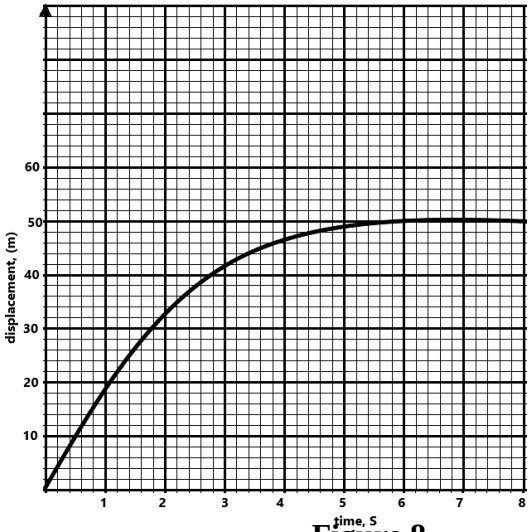



**Figure 8**

**i)** Determine the instantaneous velocities at time, t = 3s and time, t = 4s **(2mks)**

**ii)** Calculate the acceleration of the body between the times, t = 3s and t = 4s **(2mks)**

**iii)** Describe the motion of the body between time, t = 6s and time, t = 8s. **(1mk)**

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**c)** A ball of mass 100g is kicked horizontally from the top of a cliff. If the ball takes 4 seconds to hit the ground, determine the height of the cliff **(3mks)**



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**d)** On the axes provide below, sketch a graph of velocity, V against time, (t) for uniformly accelerated motion given that when t = 0, V is greater than zero. **(1mk)**

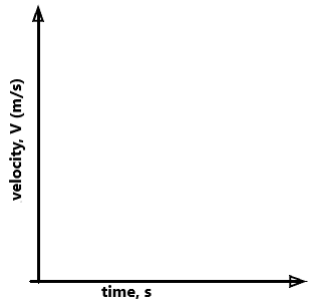



***Figure 9***

**e)** The figure below shows a sphere moving through a section of a viscous liquid in a tall measuring cylinder.

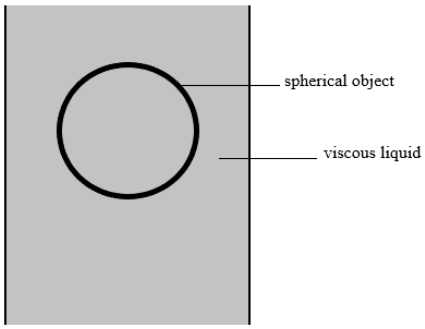



**Figure 10**

**i)** Show on the diagram the forces acting on the sphere immediately the sphere is released into the liquid. **(3mks)**

**ii)** State the relationship among the forces in part (i) above **(1mk)**

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**f)** A ball at rest is dropped from the top of a high building and it hits the ground after t, seconds. If the downward acceleration is taken as positive, sketch the velocity-time graph for the motion of the ball between the time when it is released and when it hits the ground. **(2mks)**

**g)** State Newton's second law of motion. **(1mk)**

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**h)** A minibus of mass 2000kg traveling at a constant velocity of 36km/h collides with a stationary car of mass 1000kg. The impact takes 2 seconds before the two move together at a constant velocity for 20 seconds. Calculate:



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**i)** The common velocity **(3mks)**

**ii)** The distance moved after impact **(2mks)**

**iii)** The impulse force **(3mks**)

15.

**i)** Two identical strings A and B are attached to a large mass M as shown below. String A is attached to a fixed point while string B is free. State and explain what happens when string B is suddenly pulled downward with a large force. **(2 marks)**

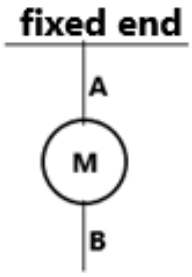



*Figure 11*

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**16.** Figure **11** shows a car braking system.

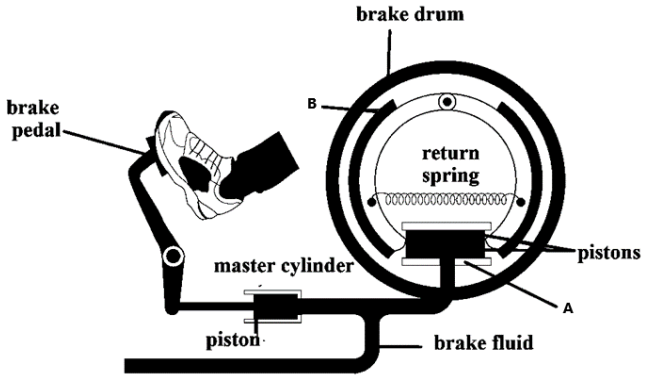



***Figure 12***

**a)** Identify the parts labelled A and B **(2mks)**

**A: ……**

**B: ……**

**b)** Briefly describe how the system works. **(3mks)**

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**c) STATE** any two properties of the fluid used in the above system **(2mks)**

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**d)** Trucks which carry heavy loads have many wheels. Explain **(2mks)**

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**17.**

**a)** Define the following terms used in machines **(2mks)**

**i)** Velocity ratio

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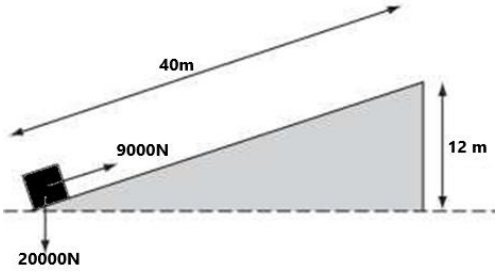
**ii)** Mechanical advantage

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**b)** A constant force of 9000N, parallel to an inclined plane, moves a body of weight 20000N through a distance of 40 m along the plane at constant speed as shown below. The body gains 12 m in height. Determine:

*Figure 13*




**i)** Work done by effort **(2mks)**

**ii)** Work done on load **(2mks)**

**iii)** Efficiency of the inclined plane **(2mks)**

**c)** Suggest a reason why the efficiency of the inclined plane is not 100% **(1mk)**

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