GREENHILL ACADEMY SECONDARY
S 6 ART DEPARTMENT

INSTRUCTIONS

I. Attempt all assignments given.
II. Read each question carefully and answer in full sentences and paragraphs.
III. Your work should show understanding, explanation and analysis
IV. Use clear headings and subheadings to organize your work.
V. Include relevant images: Label each image, briefly explain what it shows
VI. Present your work neatly, good handwriting or typed, correct spelling and grammar
VII. Do your own research using books, notes, and the internet, do not copy directly
VIII. The work should be about 8–12 pages in total.
IX. Submit your work at the beginning of next term.

TOPIC: GOTHIC ART (CRITICAL ANALYSIS)

1. INTRODUCTION TO GOTHIC ART

Provide a well-developed introduction that:

- Defines Gothic Art
- Explains its origin and historical context
- Identifies its major characteristics

2. GOTHIC ART IN ENGLAND (ANALYSIS)

Analyze the development of Gothic Art in England by:

- Explaining why Gothic style emerged
- Examining its main features (e.g., pointed arches, ribbed vaults, stained glass)
- Interpreting how these features served both **structural and symbolic purposes**

3. STYLES OF GOTHIC ART IN ENGLAND (COMPARATIVE ANALYSIS)

For each style, analyze its characteristics and explain how it differs from the others:

i. Early English Gothic (c.1170–1250)

- Analyze simplicity and vertical emphasis
- Examine structural innovations
- Interpret its visual and spiritual effect

ii. Decorated Gothic (c.1250–1350)

- Analyze increased ornamentation and tracery
- Explain the shift toward complexity and beauty

- Interpret the artistic intentions

iii. Perpendicular Gothic (c.1350–1520)

- Analyze strong vertical lines and large windows
- Examine the use of light and space
- Compare with earlier styles

4. FORMS OF GOTHIC ART (CRITICAL STUDY)

Analyze the following forms across the Gothic period:

i. Architecture

- Examine structure, engineering, and design
- Analyze how form and function are combined

ii. Sculpture

- Analyze subject matter and style
- Examine changes from rigid to more natural forms
- Interpret the role of sculpture in communication

iii. Painted Glass (Stained Glass)

- Analyze use of colour and light
- Interpret symbolic meanings
- Evaluate its role in religious teaching

5. INFLUENCE OF GOTHIC ART IN UGANDA (APPLICATION & ANALYSIS)

Critically analyze:

- Gothic features present in Ugandan architecture
- Specific examples of buildings (e.g., churches and cathedrals)
- How Gothic ideas have been adapted to the Ugandan context
- Similarities and differences with European Gothic

SENIOR SIX LITERATURE POETRY HOLIDAY ACTIVITY

COMPARING POETIC FORMS

Write a comparison of the four 2 poems below, each of which exemplifies a poetic form, i.e *lyrical poems, narrative poems, sonnets and an ode.* Identify and explain the distinguishing features of each poetic form that sets one poem apart from the rest. You may wish to comment on anything that strikes you in the poems. Your answers will certainly include comments on: subject matter, attitude, rhythm, tone, mood and any other technical devices that the poets use.

I

Sonnet 116

By William Shakespeare

Let me not to the marriage of true minds

Admit impediments; love is not love

Which alters when it alteration finds,

Or bends with the remover to remove.

O no, it is an ever-fixèd mark

That looks on tempests and is never shaken;

It is the star to every wand'ring bark

Whose worth's unknown, although his height be taken.

Love's not time's fool, though rosy lips and cheeks

Within his bending sickle's compass come.

Love alters not with his brief hours and weeks,

But bears it out even to the edge of doom:

If this be error and upon me proved,

I never writ, nor no man ever loved

II

I WANDERED LONELY AS A CLOUD

By William Wordsworth

I wandered lonely as a cloud

That floats on high o'er vales and hills,

When all at once I saw a crowd,
A host, of golden daffodils;
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the milky way,
They stretched in never-ending line
Along the margin of a bay:
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.

The waves beside them danced; but they
Out-did the sparkling waves in glee:
A poet could not but be gay,
In such a jocund company:
I gazed—and gazed—but little thought
What wealth the show to me had brought:

For oft, when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with

Item 1

Many farmers in Uganda engage in production of both cash crops and food crops and when all resources are efficiently utilized, they produce a maximum of both. However, given the limited supply of resources, the economy at times produces a few cash crops and food crops and in some seasons, more resources are allocated in production of one compared to the other which leads to shortages of the other hence limiting economic growth.

Meanwhile, the consumers are worried of the shortages of goods on the market because they are likely to spend a lot of their incomes to access these commodities. Various producers have convened a meeting to find out the possible solutions to address the situation at hand. In this meeting, you have been requested as a student of economics to prepare a presentation.

Task

a). Analyze the measures that can be taken to minimize the problem identified in the scenario.

b). Using the knowledge of the production possibility curve, describe the situation illustrated in the above scenario.

Item 2

Many firms have been blocked from entering production which has created negative implication out of the few dominate firms existing such as high level of unemployment that has created underutilization exploitation and so on. Many individuals in the country call out the government to also allow and empower other firms to enter production so that the numbers of firms in production will increase. This will also solve a macro economic problem of unemployment that has disturbed many of them now leading to the loss of their families.

Task

Analyze factors that made or caused the existence of the above few firms and discuss the measures that have been taken by the government to reduce the above macro-economic problem.

Item 3

The persistent quantitative increase in the volume of goods and services in reference to Uganda is still low as evidenced by excess capacity in many sectors of the economy and scarcity of output during some periods. This is attributed to various social, political and economic factors.

A report by international monetary fund 2024 further reveals that many sectors still contribute less to national output and calls for immediate intervention to address this economic situation.

Task

i) Examine the factors responsible for the above economic situation in the scenario.
ii) Suggest measures that the government of Uganda can adopt to address the above challenges

S6 ENTREPRENEURSHIP EDUCATION

HOLIDAY PACKAGE TERM 1 2026

ITEM 1:

Mute grain millers is a grain processing plant located in gayaza. After a successful 2025, the Managing Director, Ms Namutebi, needs to finalize the year-end reports and plan for a warehouse expansion in Quarter 1 of 2026.

Financial Data as of 31st December 2025 (All figures in UGX '000):

- Sales Revenue: 450,000
- Cost of Sales: 210,000
- Operating Expenses (Rent, Salaries, Electricity): 85,000

Interest on Bank Loan:	**5,000**
Machinery & Equipment (NBV):	320,000
Inventory (31/12/2025):	45,000
Trade Receivables (Debtors):	30,000
Cash at Bank:	12,000
Trade Payables (Creditors):	22,000
10% Long-term Bank Loan:	100,000
Share Capital:	250,000
Retained Earnings (1st Jan 2025):	50,000

Task:

a) Prepare the **Statement of Comprehensive Income** for Mute grain millers for the year ended 31st December 2025.
b) Calculate the **Gross Profit Margin** and **Net Profit Margin**.
c) Comment on the profitability of the business based on your calculations.
d) Prepare a **Statement of Financial Position** (Balance Sheet) for Mute grain millers as of 31st December 2025.

Item 2

Suubi owns Tendo Poultry Farm, located in Masaka. After completing her university degree in Agricultural Science, she used her personal savings to start a poultry business.

The farm specializes in selling broiler and layer birds as well as fresh eggs to both households and small restaurants in Masaka and neighboring towns.

As the farm grew, Suubi noticed that the current method of hatching chicks is slow

and inefficient, which limits her ability to meet customer demand. She is considering buying a new hatching machine to improve productivity. However, the market has many types of hatching machines with different capacities, features, and prices, and Suubi is unsure which one would best suit her farm.

- January started with a cash surplus of 5,000,000 shillings. This was carried forward from savings and early sales.
- Purchased poultry feeds worth 200 kilograms at 5,000 shillings per kg monthly. High- quality feed ensured good growth and egg production.
- 300 birds fell sick and a veterinary doctor was hired at 3,000 shillings per bird in January and February. Later, 50 birds required extra treatment at 1,000 shillings each in March and April.
- Employed five Shamba Boys at 500,000 shillings per month. After two months, two requested a 100,000-shilling increment due to increased workload.
- Obtained a loan of 12 million shillings to expand the poultry house and increase capacity.
- Monthly cash sales for birds were 20,000 shillings each (1,000 birds sold). In April, prices increased by 20% due to higher feed costs.
- Purchased five poultry cages at 100,000 shillings each in March from Maganjo Poultry Farm Supplies to improve bird management.
- Paid electricity bills of 50,000 shillings per month for lighting and equipment.
- Paid water bills of 30,000 shillings per month for drinking water and cleaning.
- Sold 20 trays of eggs at 12,000 shillings per tray monthly to local customers.
- Purchased vaccines for 150,000 shillings in February and March to prevent bird sickness.
- Spent 100,000 shillings on cleaning and maintenance in January and April to maintain hygiene and prevent disease.
- Hired a temporary worker in April at 40,000 shillings to handle increased workload from expansion and higher sales.

Task

Using skills acquired during the Business Club and the field trip, you have been assigned to assist Suubi.:

a) Determine the net cash position of Tendo Poultry Farm for the months of January, February, March, and April 2025.
b) Help Suubi choose the appropriate hatching machines for her poultry farm

Item 3

Mulungi owns a juice processing business in Kibuli. Her juice is well liked, especially by students who buy it when going back to school. Over time, her number of customers has been growing.

However, despite having good products, Mulungi has realized that her sales are not increasing as expected. She mainly sells her juice by moving door to door, which limits the number of customers she can reach. Some customers have shown interest in her products, but they find it difficult to access them regularly.

Mulungi is now worried that if she does not find better ways of reaching more customers and improving her sales, her business may not grow in a competitive market.

Task

Using knowledge from field trips or business club activities:

a) Suggest ways Mulungi could attract more customers and expand her market.
b) Prepare a simple document that can guide her in analyzing the current market situation and identifying new opportunities.

Item 4

Kapere owns a café known as "KAPE Busy Café" located along Kampala Road. The café is well known for selling spiced tea and a variety of snacks. In the past, the business performed well and attracted many customers.

However, in recent months, Kapere has started facing several challenges. The workers seem unhappy and less motivated. Some report late to work, others spend a lot of time on their phones, and customer service has greatly declined. This has led to slow service, reduced quality of products, and frequent customer complaints.

At the same time, many new cafés have opened up in the same area, offering better services, lower prices, and a wider variety of products. Because of this stiff competition, many customers have shifted to these competitors, causing a decline in Kapere's sales and reputation.

Task

Using knowledge acquired from field trips or business club activities:

a) Suggest practical ways Kapere can improve the attitude and commitment of his workers to enhance their performance at the café.
b) Advise Kapere on how he can attract and retain customers in such a highly competitive business environment.

Item 5

Bright Star Suppliers Ltd is a company in Uganda that supplies school materials like books and stationery. One of its customers, Sunrise Academy, made an agreement with the company to supply these items for one year at a fixed price. After three months, Bright Star started facing challenges because the cost of materials and transport increased. This reduced the company's profits. The sales manager, Mr. Lumu, then contacted the school's purchasing officer, Ms. Amina, to discuss changing the agreement.

They agreed to meet and talk about the issue. During the meeting, both parties explained their concerns, listened to each other, and asked questions to understand better. They remained calm and respectful throughout the discussion. In the end, they reached a fair agreement that satisfied both sides.

Task

a) Guide on the essentials of communication that would help the two parties to understand each other and reach a fair agreement.

b) Explain the principles that are likely to have guided the discussion between the two parties to ensure that the meeting remained focused and resulted in a fair agreement.

Item 6

Joan and Jane have obtained a loan from Stanbic bank to establish a poultry farm. They both agreed to first attend a workshop for some training. However, in one of the workshop sessions, one of the presenters told them that the business environment in which they are to operate is by surrounded by external factors and their organic integration is most likely to create an impact on the operation of their poultry business. The presenter also added that a stable economic environment can support the success of their firm in hand with different supporting organizations.
However, Joan and Jane need more guidance on the presentation made from the workshop.
Task

a) Describe the environment in which Joan and Jane's poultry business is likely to operate.
b) Advise Joan and Jane on how having a stable economic environment could help their poultry farm grow and succeed.

Item 7

Odworo has saved Shs 2,000,000 in a local village SACCO and wants to start a small business. She is thinking of either opening a boutique or a salon. Odworo lives opposite a university, so there are many students around who could become potential customers.

She is not sure which business will be more profitable or suitable for her location. She also needs to decide how to use her Shs 2,000,000 to buy the necessary equipment, furniture, and other items needed to start the business. Odworo wants a business that will attract customers quickly, cover her costs, and allow her to make a good profit.

Task.

a) Guide her on selecting a suitable business to start up, and highlight the likely obstacles to her success in business
b) Help Odworo estimate and allocate funds for the business

Item 8

Tendo operates a poultry business in his home town with a very busy schedule and sometimes shamba boys at the farm use that opportunity to pick pocket the eggs when he is not around.
Thieves frequently break the poultry premises and take the birds. Customers who take eggs on credit sometimes default. Sometimes employees sustain injuries while attending to birds. Tendo owns a motor van which he uses to deliver eggs to different customers but recently it got an accident due to over speeding. Tendo is now stuck with business challenges and needs technical advice.

Task

a) Advise him on the necessary insurance policies he can undertake
b) State and explain the guidelines to be followed when taking out the different policies

c) Mitigate the business risks faced by Tendo's poultry farm

Item 9

In a typical Ugandan town, there are many different types of businesses such as retail shops, salons, small restaurants, and mobile money services. Some of these businesses are very successful and attract many customers daily, while others struggle to make enough sales.

This situation shows that business success depends on how well the entrepreneur manages the business and responds to challenges in the environment.

Task

a) Explain why some businesses are thriving and attracting many customers.
b) Describe the challenges that some businesses face and how these challenges can affect their success.

Item 10

a) Kampala Traders Ltd is a business that imports and sells various merchandise. The company employs four staff members: Debbie, Annette, Rachel, Sophie and Janie. During March 2025, each employee received different types of income, including salaries and various allowances.

- Debbie earned a salary of Shs 10,500,000 for the month. In addition, she received a housing allowance of Shs 150,000, a transport allowance of Shs 50,000, a medical allowance of Shs 1,000,000, and an entertainment allowance of Shs 30,000.
- Annette received a salary of Shs 800,000 for March. She was also given an education allowance of Shs 100,000, a transport allowance of Shs 50,000, and a medical allowance of Shs 100,000.
- Rachel earned a salary of Shs 200,000. She received an education allowance of Shs 50,000 and a medical allowance of Shs 50,000.
- Sophie earned a salary of Shs 150,000. In addition, she received an education allowance of Shs 50,000 and a medical allowance of Shs 50,000.
- Janie earned a salary of shs 120,000, a transport allowance of shs 20,000 and medical allowance of shs 60,000

The company has not yet filed taxes for the month of March with the Uganda Revenue Authority.

Note:

The table below shows the monthly PAYE tax rates in Uganda.

Chargeable monthly Income (shs)	Tax rate (shs)
0 – 235,000	Nil
235,001 – 335,000	10% of the amount by which chargeable income exceeds shs 235,000
335,001 – 410,000	Shs 10,000 plus 20% of the amount by which chargeable income exceeds shs 335,000
410,001 and above	a) Shs 25,000 plus 30% of the amount by which chargeable income exceeds shs 410,000
	b) Where the chargeable income of an individual exceeds shs 10,000,000 an additional 10% is charged on the amount by which chargeable income exceeds shs 10,000,000

Task:

a) Imagine you are a tax specialist; you are hired to compute the Tax liability for each employee for March 2025 so that the company can file taxes correctly.

b) While at the bank, Uganda Revenue Authority discovered that he was not paying taxes and he was warned about not paying taxes. However, he plans on dodging them again ignoring the effects of his actions. Advise him on the effects of his actions.

c) Help URA determine total VAT on Bwaita given he imported clothes from Turkey worth ugx 11,000,000 he sold them to a wholesaler at ugx 14,300,000. They were all retailed at a total of ugx 16,000,000 all VAT inclusive. Use VAT rate 18%

END

SENIOR SIX GEOGRAPHY

HOLIDAY WORK 2026

Agriculture remains the backbone of Uganda's economy, employing over 60% of the population. However, agricultural productivity and rural development vary greatly from one district to another. Some areas experience high yields and improved livelihoods, while others struggle with low production, poor infrastructure, and food insecurity.

The Ministry of Agriculture, Animal Industry and Fisheries has noted that development interventions have not been equally effective across all regions. The Ministry believes this is partly due to limited analysis of agricultural production systems, population distribution, and settlement patterns before implementing development programs.

To address this gap, Advanced Secondary Geography learners were tasked to carry out a fieldwork study in Kisoro District, a highland agricultural area. The learners collected data on agricultural land use zones, production systems, population distribution, and access to infrastructure. Their findings are presented in Tables 1.0 and 1.1.

The Ministry has requested you, as a Rural Development Geographer, to analyse this data and recommend appropriate development strategies for the district.

Table 1.0: Agricultural Land Use Zones and Characteristics in Kisoro District

Altitude (m)	Highland zone (2,000–2,500m)	Midland zone (1,500–1,999m)	Lowland valley zone (1,200–1,499m)
Main activities	Irish potatoes, wheat, dairy farming	Bananas, beans, maize, coffee	Rice growing, vegetable farming, fish farming
Farm size	Very small fragmented plots (0.5–1 acre)	Small to medium farms (1–3 acres)	Medium farms (3–5 acres)
Farming system	Intensive subsistence farming	Mixed farming (subsistence + small scale commercial)	Semi-commercial farming
Technology used	Hand hoes, limited fertilisers	Hand hoes, ox ploughs, some fertilisers	Ox-ploughs, irrigation canals, some improved seeds
Settlement pattern	Densely populated nucleated settlements	Dispersed rural homesteads	Linear settlements along valley roads
Soil condition	Fertile volcanic soils but prone to erosion	Moderately fertile soils	Alluvial soils, occasionally waterlogged

Road network	Narrow, steep murram roads	Fair murram roads	Main tarmac road passes through valley

Table 1.1: Population Distribution by Agricultural Zone

zone	Population	Percentage of Total Population
Highland zone	210,000	42%
Midland zone	180,000	36%
Lowland valley zone	110,000	22%
Total	500,000	100%

Employment Structure in Kisoro District

- 72% engaged in crop farming
- 15% engaged in livestock farming
- 5% engaged in fishing
- 8% engaged in trade and services

TASKS

Use only the information provided in the scenario, tables, and figure to answer the following tasks:

a) Giving relevant evidence, explain the methods and geographic tools which the learners likely used to collect data during the fieldwork study.

(b) Based on your analysis of the findings, design realistic and effective development plans that the Ministry of Agriculture can implement to promote agricultural development and improve livelihoods in Kisoro District.

GREENHILL ACADEMY

S.6 END OF TERM I 2026 GENERAL PAPER HOLDAY WORK

INSTRUCTIONS

Respond to all items. Your responses must be printed in a pamphlet with a cover page.

Item. 1

In 2026 Uganda's Ministry of Education launches a nationwide program called "Skills for Today, aimed at reducing youth unemployment by integrating Vocational training into secondary schools. The program introduces compulsory modules in ICT, agribusiness, and entrepreneurship.

However, within three years, reports emerge that while urban schools are thriving T Producing young innovators who design apps and run small enterprises rural schools are struggling. Teachers lack training, equipment is scarce, and cultural attitudes in some communities still prioritize traditional farming over modern skills.

At the same time, Uganda's private sector complains that graduates, though skilled, lack discipline and practical workplace experience. Meanwhile, frustrated youth in rural areas begin migrating to cities, swelling informal settlements and increasing crime rates.

TASK

Design a Research Plan to address the concerns raised in the above scenario.

Item.2

"In Kampala's bustling streets, a young graduate with a degree in Business Administration sells roasted maize by the roadside. He is not lazy, nor unskilled but the job market has no space for him. Meanwhile, in rural Mbale, another youth innovates a solar-powered irrigation system, yet struggles to find support to scale his idea. Uganda's youth bulge is both a promise and a peril"

Uganda, with one of the youngest populations in the world, faces a paradox: thousands of educated youths remain unemployed, while industries complain of a shortage of practical skills. Government programs like the Youth Livelihood Programme and Parish Development Model aim to bridge this gap, but challenges of corruption, poor implementation, and rural-urban inequality persist.

At the same time, private enterprises argue that the education system produces “paper graduates" rather than problem-solvers. Civil society warns that if youth frustration is not addressed, Uganda risks social unrest. Yet optimists believe that with innovation, entrepreneurship, and targeted reforms, the youth bulge could become Uganda's greatest asset.

Task

Design a project proposal in response to this scenario

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S.6 HISTORY UNIT 2 HOLIDAY WORK

ITEM 1

Uganda hosts over **1.5 million refugees**, mainly from South Sudan and the Democratic Republic of the Congo. While Uganda has adopted an open-door policy that allows refugees access to land, education, and employment, this has created pressure on local resources.

In some districts:

- School enrolment has increased by **60%**, leading to overcrowded classrooms
- Health centres operate beyond their capacity
- Land shortages have increased competition between refugees and host communities
- Youth unemployment has risen, causing tension

As a result, conflicts sometimes arise between refugees and local residents over land, jobs, and community resources.

Historically, similar situations occurred in West Africa during the settlement of freed slaves in Sierra Leone and Liberia, where relations between settlers and indigenous populations were often marked by both cooperation and conflict. Your brother at university has approached you to help him with his research on the relationship between the historical resettlements in Sierra Leon and Liberia with the current situation in Uganda

Task

Prepare a writeup that you will use

a) Compare the relationship between settlers and indigenous people in the above historical resettlements with that between refugees and host communities in Uganda.

b) Suggest practical measures that can be taken to promote peaceful integration between refugees and host communities in Uganda.

ITEM 2

Using ICT or library research and find out about the League of nations and answer the following tasks

a) Analyse the role of the 1920–1939 League of Nations in maintaining world peace.
(Describes the aims and structure, and functions of the League)

b) Examine how the League of Nations operated as an international diplomatic body.
(Analyse the role of the League of Nations in maintaining World peace from 1920 to 1939.)

c) Assess how the League's experience promotes the workings of international diplomacy today.
(Analyses how the strengths and limitations of the League offer lessons for modern international diplomacy.)

End

Greenhill Academy Secondary School – Kibuli

History of Africa (Paper One)

S.6 - Holiday work Instructions to

learners:

-Answer all Item:

Your school is making a documentary for Independence Day. You're tasked with the section on "The role of ordinary people in Uganda's Independence.

Task:

- Interview two elders who witnessed the 1960's and record how they or their families participated in the Independence movement.
- Explain three ways trade unions, newspapers, or religious groups contributed and has contributed to the growing spirit of nationalism.
- Present your findings as a 300 – word script for the documentary.

END.

S.6 LITERATURE END OF TERM 1 HOLIDAY WORK- NOVELS/ SHORT STORIES

Part 1: Research (Information Gathering)

Investigate your background by talking to family members (parents, grandparents, relatives) and observing your community.

Your research should include:

- Your place of origin (village, district, tribe/clan)
- Family history (important events, traditions, or beliefs)
- Cultural practices (marriage, naming, food, ceremonies, etc.)
- Any interesting story, myth, or real-life experience from your family

You may take notes or record interviews where possible.

Part 2: Creative Writing

Using the information you collected, write a **creative story** inspired by your background.

Your story should:

- Have a clear title
- Be between **4 – 6 pages**
- Include characters, setting, and a clear plot
- Reflect aspects of your culture or family background
- Be original (not just a direct retelling of facts)

You may:

- Turn real events into fiction
- Create a main character based on yourself or a family member
- Imagine events based on cultural practices

SENIOR SIX PRINCIPLE MATHEMATICS PAPER ONE
HOLIDAY WORK

Attempt all the Items

ITEM ONE

On Monday, the birthday girl rang three friends and invited them to her party. Each friend was asked to invite three more friends the following day and continue the process. By Sunday, invitations had spread widely, and many guests were expected to attend.

Among the invited guests were **5 Members of Parliament (MPs)** and **7 LC5 Chairpersons** from different districts in Uganda.

During the event:

- The **5 MPs** are to be seated on chairs arranged in a straight row, with the Speaker at the extreme right position.
- The **7 LC5 Chairpersons** are to be seated around a circular table for a discussion session.

Later, a **group of 6 people** is to be selected from both the MPs and LC5 Chairpersons to cut the birthday cake. The group must include at least 2 MPs.

Meanwhile, one of the invited friends bought gifts and wants to wrap them using a cardboard measuring 40 cm by 30 cm by cutting equal squares from each corner and folding the sides to form an open box. She wants the box to have a volume of 936 cm^3, but is unsure about the size of the squares to cut.

Support

Task.

As a mathematics student.

a) Estimate the total number of people likely to attend the party on Sunday.
b) Determine the number of different seating arrangements
c) Advice the friend on how best to wrap the gift using the cardboard.

ITEM TWO

A homeowner in Kampala wants to install a flat solar panel on a sloped roof to maximize energy efficiency. The position of the panel is modelled as a plane in three-dimensional space. Three points on the roof are identified relative to a corner of the house taken as the origin A(2,1,3) B(4,2,1) C(−1,3,2)

A beam of sunlight is represented by a line with direction vector: $\vec{d} = \underset{\sim}{i} - 2\underset{\sim}{j} + 2\underset{\sim}{k}$

Solar panels operate most efficiently when sunlight strikes perpendicular to the surface.

A battery is installed at point: P(1,2,1)

TASK

As a mathematics student,

a) Find the equation the solar panel.

b) Comment on whether the panel is optimally positioned

c) Determine the minimum length of wire required to connect the battery to the panel.

ITEM THREE

A construction engineer is designing a rectangular compound wall along a straight river. The wall will not be constructed along the river side, so only three sides are fenced.

The engineer has 120 meters of fencing material. The boss wants to determine how the fencing material should be cut and used to maximize the enclosed area.

Inside the compound, a cylindrical water tank of radius 2 m is installed. A pump removes water from the tank at a constant rate of 2 m^3 per second.

The boss is concerned about:

- how the fencing material should be used efficiently
- how fast the water level changes in the tank

TASK

As a mathematics student, help the boss to:

a) Determine how the fencing material should be cut to maximize the area.

b) Determine how fast the water level is changing in the tank.

S.6 BIOLOGY HOLIDAY WORK

During a public lecture about the environment by the City environment officer at Greenhill Academy, the term carbon foot print re-echoed in the hall very many time. Peter failed to comprehend it since he joined the lecture mid-way. The head-teacher also affirmed that there has been irregular rainfall patterns and rising temperature in the community. In response, the science club launched an environmental conservation project where they planted trees in the school and community together with the local authorities. The students' also measured the school's activities such as transport, electricity and gas use, and waste and incinerate burning. The school management also committed to reducing fuel and electricity consumption. Peter has come to you for a thorough and detailed explanation about the lecture, interventions of the science club and school management.

Task

a) Explain the term carbon foot print and how the observed school's activities are responsible for the changes in environmental temperature and rainfall pattern
b) Explain how the science club and school management's interventions will help improve the environment and address the climate change crisis.
c) Describe other practical strategies the school and government can implore to reduce the carbon foot print.

Note

- Candidates are advised to first make research about carbon foot print, climate change, carbon sequestration and mitigations to climate change crisis before responding to the question.
- Reference materials used like text books (include page number) and websites visited/consulted must be written on a separate page (last page). Either printed or handwritten.
- Any form of plagiarism will lead to automatic disqualification.

S.6 CHEMISTRY HOLIDAY WORK TERM 1

ITEM 1

A volatile organic compound **R**, with an empirical formula C_3H_6O, plays a pivotal role in modern chemical industries as a multifunctional intermediate. Compounds of this class are widely utilized in the synthesis of industrial solvents, polymer precursors, food flavoring agents (e.g., vanillin, benzaldehyde derivatives), preservatives, resins, and active pharmaceutical ingredients (APIs). Their versatility arises from structural isomerism and the presence of reactive functional groups, enabling diverse chemical transformations.

Despite their industrial relevance today, the toxicological profile, volatility, flammability, and environmental persistence of such compounds necessitate strict adherence to green chemistry principles, process safety protocols, and regulatory compliance frameworks.

To enhance process efficiency, product selectivity, and safety, a chemical manufacturing plant has selected compound **R** as a primary feedstock in the large-scale synthesis of value-added organic intermediates. As part of their quality control and molecular characterization protocol, the plant's analytical team conducted a gas-phase diffusion experiment using a porous membrane and found out that Oxygen gas diffuses **1.345** times faster than compound **R** under identical conditions (25°C and constant pressure).

Your school has been invited to collaborate with the plant's process development and analytical chemistry unit to identify compound **R**, optimize its industrial application pathways and evaluate its safety and environmental impact.

In other experiments, it is revealed that compound **R** can be obtained from propene and can be converted back into propene, under guided suitable conditions. Additionally, R can react with sodium hydrogen Sulphite and phenylhydrazine but **not** with Fehling's solution under different catalyzed reactions depending on the conditions of the reaction system.

Task:

As a chemistry learner, take on the role of chemical analyst on the chemical behaviours and prepare a detailed report about the use and synthesis of various additives besides the side effects and suggest any recommendation for improvements where possible to the plant's production processes.

ITEM 2

Uganda continues to experience a significant energy accessibility gap, particularly within its rural and peri-urban regions where national grid penetration remains limited. As a result, many communities rely on non-sustainable and cost-intensive energy alternatives, including diesel generators, kerosene lamps, and improvised battery systems. These energy sources are often inefficient, environmentally detrimental, and economically burdensome, thereby hindering socio-economic development.

In response to this challenge, a forward-thinking Ugandan enterprise is pioneering the implementation of solar-powered microgrid technologies—a decentralized and renewable energy solution designed to enhance energy reliability, affordability, and environmental sustainability. These microgrids integrate photovoltaic systems with energy storage units to ensure continuous power supply, even during periods of low solar irradiance.

To enhance the efficiency, resilience, and longevity of these systems, the company has invited your chemistry class to serve as a materials science consultancy team. Your role

is to perform a comprehensive evaluation and selection of suitable elements for use in critical components such as electrochemical storage devices (solar batteries) and conductive transmission media (electrical wiring systems) to understand the durability of these elements when they are exposed to air, water and sodium hydroxide solution under varying environmental conditions.

Element	Atomic Radius (pm)	First Ionization Energy (kJ/mol)	Electronegativity (nm)	Bonding Type
Lithium, Li	145	520	1.0	Metallic
Magnesium, Mg	130	730	1.5	Metallic
Aluminium, Al	110	1000	2.5	Metallic
Silicon, Si	95	1250	3.0	Covalent
Phosphorous, P	85	1500	3.5	Covalent

Task

As a chemistry learner, take on the role of a material chemist and sustainable energy consultant commissioned to contribute to Uganda's rural electrification initiatives using your understanding of atomic structure, periodic trends, and chemical reactions, together with the experimental data provided, conduct a systematic and evidence-based evaluation of candidate elements. Your objective is to design an optimal materials framework for use in Electrochemical energy storage systems (solar batteries), and Electrical transmission components (wiring and connectors) within solar-powered micro-grid networks.

S.6 CRE HOLIDAY WORK

1 a) Read 1 peter 2:11-17., 3:1-7 and 5:1-12 to identify the relationship addressed in the passages.

b) Discuss 1 peter teachings about the various relationships and derive their relevance to the contemporary world.

S.6 ICT HOLIDAY WORK

Part A: Business Research & Design (Microsoft Publisher)

Scenario

You have been hired by a local business in your area (e.g. salon, retail shop, restaurant, Agro-input shop, school, etc.) to improve their marketing materials.

Task

First, **study at least TWO real businesses** around you:

- Visit physically *or* observe online (WhatsApp status, Facebook pages, posters, etc.)
- Note how they advertise:
    - Colors
    - Layout
    - Information included
    - Weaknesses (what is missing or poorly done)

Then Design (Using Publisher):

Create **THREE (3)** improved designs for ONE selected business:

1. Flyer / Poster
2. Brochure
3. Business Card

Requirements

- Use your own improved version (not copying directly)
- Maintain branding consistency
- Clearly improve on what you observed

Short Note (½ page)

Explain:

- Which business you selected
- What was wrong with their designs
- What you improved

Part B: Home Financial Management System (Excel + Database)

Scenario

You are required to design a simple electronic system to help manage household expenses. The system should help track spending, control the budget, and show financial status.

Step 1: Excel System

Create an Excel workbook with the following sheets:

1. Expenses Sheet

Include:

- Date
- Item
- Category
- Amount
- Payment Method

Enter at least 15 records

2. Budget Sheet

Include:

Category

Budget Amount

Step 2: Calculations & Functions

Use both basic and advanced calculations

Step 3: Analysis

Create at least one chart (e.g. spending by category)

Show:

- Total expenses
- Highest spending category

Step 4: Database Integration (Access)

Tasks

Import your Excel data into Access

Create:

- Tables (Expenses, Categories)
- Queries (at least 4)
- Form (data entry)
- Report

Send your work to;
“ mwebejoshua76@gmail.com ” two days before reporting

S.6 PHYSICS HOLIDAY WORK

INSTRUCTIONS TO THE STUDENTS

Answer **Item 1** and **one** other item.

Item 1

While at home determine the refractive index of water based on real and apparent depth method; using locally available materials including but not limited to; transparent glass cup or basin, water, a coin (or small metallic object), ruler and a marker/pen.

Task: Write a scientific report including the detailed procedure on how you were able to go about the project. Also include photos or videos of the actual steps you carried out.

Item 2

Design and make a model of an automatic night lamp using transistors and light dependent resistor. In your report include the cost budget of the materials used to come up with the model.

Item 3

Design and make a model structure of your choice and explain choice of materials based on the mechanical properties and exhibit its work. In your report, include the cost budget of the materials used to come up with this model.

Item 4

You are required to determine the specific heat capacity of a liquid basing on a standard liquid using the cooling method in which;

You will use Newton's law of cooling to determine the specific heat capacity of cooking oil (e.g. Fortune Butto, Roki, Star Goldy, Sun seed oil), taking water as the standard liquid.

Support materials:

You will need: thermometer, electronic balance (kitchen type or other). Graph paper, timer. The metallic container could be a mug, empty tin of Zesta jam, small aluminium saucepan etc.

***Hint**: Specific heat capacity of water = 4200 J kg^{-1} K^{-1}*

Task: Write up the scientific report and work it out practically.

END

S6 SUBSIDIARY MATHEMATICS HOLDAY WORK

Attempt the following questions in your classwork book

INTEGRATION

1. Evaluate;

a) $\int_{-1}^{3} x(x+1)dx$

b) $\int_{0}^{1} 4x(2x+3)(4x+3)dx$

c) $\int_{1}^{2} \frac{x^4-1}{x^2}dx$

d) $\int_{-1}^{2} \frac{2x^2-x^5}{x^2}dx$

e) $\int x(1-\sqrt{x})dx$

f) $\int_{1}^{4} \frac{x-1}{\sqrt{x}}dx$

g) $\int_{3}^{7} \frac{2}{x}dx$

2. If $v = t^2 - 4t + 3$ and $s = 4$ metres when $t = 3\ s$, find
   a) the values of t when the body is at rest,
   b) the acceleration when $t = 5\ s$
   c) the displacement when $t = 1\ s$

3. A particle moves with velocity $v = 2t^2 - 9t + 10$, where t is the time. The particle is at the origin when $t = 0$. Determine the
   a) expression for the distance in terms of t.
   b) distances of the particle from the origin when the particle is at rest.

4. A body starts from rest at an origin O and its acceleration at any time t seconds later is given by $a = (3 - 2t)$ m/s^2. Find the displacement of the body from O after 3 seconds.