

NAALYA SS SENIOR SIX HOLIDAY WORK.

MATHEMATICS.

1. In a lakeshore district, an Mpox outbreak is being tracked, and the district taskforce has noticed that the number of confirmed infections is rising by 20% each month. At the start of the monitoring period there are 500 confirmed cases, and the Health Department wants a forecasting model to plan medicine, isolation space, and staff duty schedules in the health centres. At the same time, the district has a big public trade fair planned in 6 months; the organisers have said they will only go ahead if projections show the number of cases will still be below 2,500 by that time, to reduce the risk of large gatherings accelerating transmission.

Task:

(a) Write down an exponential equation, in terms of t months, for the number of infected individuals N .

(b) Use your equation to predict the number of infected individuals after 2 months.

(c) Find the time (in months) when the number of infected individuals first reaches 2,500. Hence advise whether the trade fair should be postponed.

2. A health centre in Mubende is setting aside a rectangular waiting shade in the compound with total area 196 m^2 . To reduce the cost of paving edges and to make the space easy to manage, the in-charge wants the shape that uses the least boundary length around it. The centre will approve the plan only if the least boundary length needed is not more than 60 m and if it can easily be transformed into a square; otherwise, they will reduce the area and redesign.

Task:

(a) Find the dimensions that give the least boundary length.

(b) Find the least boundary length needed.

(c) State the final dimensions clearly.

(d) State whether the centre should approve the plan or redesign.

3. In a small workshop in Kampala, two tool trays of masses 10 kg and 4 kg are tied to opposite ends of a light inextensible rope that runs over a fixed, smooth ceiling pulley; when released, the heavier tray will move down as the lighter tray rises, and the supervisor wants to know the motion and the loads on the system to ensure the current setup is safe. If the wall bracket for the pulley is rated for a maximum downward load of 150 N, proceed with normal operations; if the load on the bracket exceeds 60 N, reinforce the mounting before use.

Task:

Calculate the system's acceleration, the tension in the rope, and the total downward force on the pulley, then decide whether the 150 N bracket rating is adequate or reinforcement is required.

4. A father in Jinja is preparing his son for the new term and goes to buy exercise books b , mathematical sets s , and pens p . From three different shops along the street, he records these price combinations: 4 books, 1 set, and 6 pens cost 22,000 shillings; 3 books, 3 sets, and 4 pens cost 25,000 shillings; and 5 books, 2 sets, and 3 pens cost 26,000 shillings.

He has a budget of 60,000 shillings and is choosing between two shopping options: Option A is to buy 12 books, 4 sets, and 10 pens, while Option B is to reduce the books by 4, reduce the sets by 2, and increase the pens by 3, then buy that adjusted collection instead.

Task:

- (i) Form equations relating the costs of all items.
- (ii) Find the cost of each item.
- (iii) Find the total cost of Option A and Option B
- (iv) determine which option he can use within 60,000 shillings budget.

5. After an end-of-topic mathematics test marked out of 70, a teacher groups the scores of 60 learners to guide three quick actions: identify where ^{mode} most learners are clustered, estimate how many reached a ^{mean} high-performance band, and set a fair pass cut-off so that three quarters of the class pass.

The grouped summary (marks) is: 35–39: 5 learners, 40–44: 9 learners, 45–49: 13 learners, 50–54: 16 learners, 55–59: 10 learners, 60–64: 5 learners, 65–69: 2 learners.

The teacher will plan a short revision clinic if the most common score is below 50. The teacher will prepare recognition cards only if at least 3 learners scored above 62.5 marks.

The pass cut-off will be accepted only if the score needed for 75% to pass is at least 45; otherwise, the teacher will first organise extra support lessons.

Task:

- (a) Draw a histogram and estimate the ^{mode} most common score.
- (b) Estimate how many learners scored above 62.5 marks using an O-give.
- (c) Find the minimum score required so that 75% of the class pass.
- (d) State whether a revision clinic should be planned, whether recognition cards should be prepared, and whether the pass cut-off should be accepted.

6. At a church hall, a heavy bell is being rehung for an evening event. It is supported by two ceiling cables fixed at points A and B. The cable from A slants down making an opening of 60° with the level ceiling, and the cable from B slants down making an opening of 30° with the level ceiling. When the bell is hanging still, an engineer measures that the sum of the pulls in the two cables is 133.87 N. For safety during use, the engineer will order new cables if the pull in any one cable is above 90 N, and the engineer also wants to determine the mass of the bell.

Task:

- (a) Draw a clear force diagram showing the bell, the two cable pulls, and the weight
- (b) Find the pull (tension) in cable A and the pull (tension) in cable B.
- (c) Find the mass of the bell. (Take $g = 9.8 \text{ m s}^{-2}$.)
- (d) State whether the engineer should order new cables or keep the current ones

7. A municipal planning team is improving traffic flow by proposing two straight roads on a town map where positions are given by eastings and northings in kilometres. Road 1 is planned to join a junction 20 km east and 10 km north to another junction 80 km east and 40 km north. Road 2 is planned to connect a junction 10 km east and 70 km north to another junction 50 km east and 90 km north. For safe merging, the team requires that the turning size where the two roads meet is at least 40° . To improve emergency response, a small health post is proposed at a site 35 km east and 5 km north, and it should be within 10 km of Road 1 for quick ambulance access; if it is farther than 10 km, the health post will be moved to a backup site 15 km east and 12 km north.

Task:

- (a) Find the map-rules for Road 1 and Road 2 and determine the turning size between them.
- (b) Find how far the proposed health post site is from Road 1, and how far the backup site is from Road 1.
- (c) State whether the turning-size requirement is satisfied and whether the health post should be built at the proposed site or moved to the backup site.

8. During an apprenticeship selection at a motorcycle repair workshop, each trainee is rated twice: Score 1 comes from a hands-on repair task, and Score 2 comes from a customer-handling role-play. While entering results, one score sheet got smudged with grease, so two entries are missing: trainee D is missing Score 2, and trainee H is missing Score 1. The supervisor wants to use the overall pattern between the two scores to estimate the missing entries. To avoid making guesses from a weak pattern, the supervisor will rely on the line estimate only if the correlation between Score 1 and Score 2 is at least 0.60; otherwise, the two trainees will be retested. A trainee is accepted only if the average of the two scores is at least 70.

Trainees: A, B, C, D, E, F, G, H, I, J

Score 1: 52, 64, 58, 75, 69, 47, 80, —, 62, 55

Score 2: 56, 67, 61, —, 72, 50, 84, 59, 66, 58

Task:

- (a) Draw a scatter graph for the known pairs and draw a line of best fit.
- (b) Use the equation of the line of best fit to estimate (i) the missing Score 2 for trainee D and (ii) the missing Score 1 for trainee H, then find the average score for D and for H.
- (c) Calculate the correlation coefficient between Score 1 and Score 2, and comment

on the relationship
(d) State whether the supervisor should accept D and H or retest them.

9. A teacher is preparing a colour lucky draw game using two bags of balls. Bag A has 6 red balls and 3 blue balls while Bag B has 4 red balls and 5 blue balls. Because Bag A is used more often for faster rounds the teacher plans to start a round from Bag A three out of every four rounds and from Bag B one out of every four rounds. In each round one bag is selected using that rule and then two balls are drawn one after the other from the selected bag without returning the first ball. The teacher will keep the rules only if the chance that the two balls drawn are the same colour is at least 0.50 otherwise the teacher will adjust the bag selection rule.

Task:

- (a) Find the chance that Bag A is chosen and the chance that Bag B is chosen
(b) Find the chance that the two balls drawn are both red
(c) Find the chance that the two balls drawn are the same colour
(d) State whether the teacher should keep the rules or adjust the bag selection rule
10. A school bursar in Kampala is planning transport support for students who stay late for revision. In the first week, 18 students receive support, and each following week the number increases by 4 students as more learners join the evening programme. The bursar wants to know when the number receiving support will first reach 74 so that enough funds can be prepared, and also wants the total number of student-support cases handled up to that week. The school will continue with the programme only if the total number of support cases by then does not exceed 700; otherwise, the plan will be reviewed.

Task:

- (a) Find the number receiving support in the 10th week.
(b) Find the week in which the number receiving support first becomes 74.
(c) Find the total number of student-support cases from week 1 up to that week.
(d) State whether the school should continue with the programme or review the plan.

S.6 PHYSICS

Instructions

Answer four (4) items from this paper.
Each item carries 25 marks.

ITEM 1

A team of doctors and engineers at a Regional Hospital are selecting a radioactive source for treating small cancer tumors and for tracing leakages. Isotope A is

cobalt ${}^{66}_{27}\text{Co}$, isotope B is caesium ${}^{137}_{55}\text{Cs}$. They are also designing a power plant to generate electricity by nuclear fission, using uranium.

The medical physicist explains that an isotope with higher binding energy per nucleon is more stable and that less stable nuclei are more radioactive, which makes them useful for medical treatment. He adds that for electricity generation, uranium would undergo a controlled chain reaction where a neutron strikes uranium to split into barium and krypton and three additional neutrons. The project would be acceptable if 1g of uranium would provide at least 7.5×10^{10} J.

(Hint: Mass of cobalt = 59.934U, mass of caesium = 136.907U, mass of a proton = 1.0070U, mass of neutron = 1.009U, mass uranium ${}^{235}_{92}\text{U}$ = 235.044U, mass of Barium ${}^{141}_{56}\text{Ba}$ = 140.91U, mass of krypton ${}^{92}_{36}\text{Kr}$ = 91.926U, 1U = 931 MeV.) **Task:**

- As a Physics student, help the doctors to understand the terms radioactive decay and binding energy per nucleon.
- Select the suitable element to use and explain why.
- Explain how electricity is generated in a nuclear reactor.
- Establish whether the project was found to be viable.
- Using a well-labelled diagram, describe how a Bainbridge mass spectrometer can be used to identify isotopes.

ITEM 2

Students in Gulu University directed alpha particles of energy 4.2 MeV onto a gold foil of atomic number 79. While using a microscope, they observed that the atomic nucleus was considered to be a sphere of positive charge with a diameter very much less than that of an atom. They also directed an electron beam horizontally between two metal plates each of length 10 cm and 3 cm apart. The plates were maintained at a p.d. of 600 V. The electrons were of energy 10 keV.

1

(Hint: Mass of an electron = 9.11×10^{-31} kg; Electronic charge = 1.6×10^{-19} C;

$$\frac{1}{4\pi\epsilon_0} = 9 \times 10^9 \text{ F}^{-1}\text{m})$$

Task:

- Discuss the experimental evidence which supports the above microscopic view.
- Explain one failure of the model illustrated.
- Estimate the radius of the atom.
- Clarify on the motion of the electron beam in the plates.
- Estimate the velocity of the electrons as emerge out of the plates.

Part II

(Attempt 1 item from this part)

ITEM 3

Frank drove from Kampala to Masaka for a family meeting that was meant to start at exactly 8:00am. He set off at 6:00am accelerating uniformly until a speed of 72kmh^{-1} in 20s. He maintained this speed for 20 minutes before getting into a heavy traffic at a place called Nsangi, which made him reduce the speed to 3.6kmh^{-1} in 30 minutes before accelerating uniformly to 75.6kmh^{-1} in another 15s. Frank maintained this speed for the rest of the journey before decelerating to rest in 30s. As the meeting was going on his friend removed the car from sunshine, climbing a hill 6m long inclined at 30° to horizontal at a constant speed of 36kmh^{-1} against a rough surface of coefficient of friction 0.25.

(Hint; Distance from Kampala to Masaka is 145 km.)

TASK

- a) Explain to your young brother who has just joined Senior One, the meaning of,
 - i) Speed
 - ii) Acceleration as used in the scenario.
- b) Use the information given to determine the distance from Nsangi to Masaka.
- c) Determine whether Frank arrives in time for the meeting and explain any two aspects of the nature of the road to Masaka that would cause his car to consume more fuel than expected.
- d)
 - i) Explain to the brother the origin of roughness along the hill.
 - ii) Determine the engine power developed by the car along the hill.

ITEM 4

As S.5 students were going for a study tour at Owen falls dam in Jinja, they were surprised to see a taxi being stopped and fined by traffic police for loading luggage on the roof rack. One officer commented that luggage should be loaded below the passenger seats, though she could not give a clear explanation. The students passed via a bridge whose support beam was weighing 10000kg and was 750m long. The bridge was hinged to a vertical pillar at one end and was kept in horizontal position by a steel cable of diameter 0.15m, fixed at the end of the bridge opposite the support pillar. The cable was fixed on the pillar at a point 10m above the hinge. Before installation, the cable was 1230m long. The cable had to be tightened to keep the beam horizontal. For safety, the tension in the cable had not to exceed 65000N. While looking for parking after crossing the bridge, students saw a mechanic using a long spanner undoing a nut. On asking him why he was using a long spanner, he replied that a short one would be less effective for the work. This left the students puzzled.

Task:

As a learner of Physics,

- a) Explain to students the Physics behind the events that surprised them.

- b) Determine whether the bridge remained firm and safe, and understand necessary conditions for bridge to remain firm and safe.
- c) Understand why a long spanner is preferred to a short one when tightening bolts during assembly of the bridge and undoing the nut.
- d) Help the learners to understand how electricity is produced at the bridge, and list other energy resources used to generate electricity.
- e) Describe the structure of the sun and explain how Ocean tides are formed.

SECTION B

(Attempt one item from this section)

ITEM 5

An industrial complex in industrial area houses both a steel and a pharmaceutical company and requires a diverse temperature monitoring system. The steel plant needs thermometers that can measure extremely high temperatures in a furnace while the pharmaceutical company requires precise temperature control for drug formulation processes. Engineers are evaluating a thermocouple, resistance thermometers and radiation pyrometers for different applications and the company initiated to educate technicians about appropriate selection, installation and maintenance of various thermometers to ensure work place safety standards to be consistently met.

Task:

As a learner of Physics

- a) Define thermometric property and temperature scale.
- b) Explain how a thermocouple generates emf.
- c) Describe how a pyrometer measures the temperature of a furnace and state why it is preferred over other thermometers.
- d) A thermocouple produces an emf of 12mV at 200°C, 18mV at 300°C. Calculate the expected emf at 250°C assuming a linear relationship.

ITEM 6

You are the organizer of a school sports day event and need to prepare 2.5kg of water initially at 25° using an electric kettle of heat capacity 500JK⁻¹ to make hot tea for 50 students. The water is first heated to its boiling point to enhance flavor extraction from the tea bag. You later find out that 0.8kg of water evaporates completely into steam. Assume no heat is lost to the surrounding and that the kettle is 100% efficient.

Task:

As a Physics student, help the participants to:

- a) Understand why temperature of water remains constant at 100%.
- b) Using molecular theory, explain the energy changes that occur during boiling.

- c) Estimate the time taken to evaporate water if the kettle is rated at 25kW.
- d) Clarify on the fact that the handle of the kettle is made of a poor conductor.

SECTION C

(Attempt one item from this section)

ITEM 7

You are having a staff meeting. To serve hot tea to the staff, 2.5 kg of water is boiled and poured into a portable steel dispenser of thickness 2.5m, the sides and base of the dispenser are lined with an 8mm thick layer of polythene foam to reduce heat loss to the surrounding air. The area through which heat can escape by conduction is 0.8m^2 , and the tea inside stays at 80° .

(Hint: Thermal conductivity of steel = $50\text{Wm}^{-1}\text{K}^{-1}$; Thermal conductivity of polythene = $50\text{Wm}^{-1}\text{K}^{-1}$; the temperature of the surrounding air = 25°C .)

Task:

- a) Briefly explain why polythene foam is chosen for this purpose compared to a good conductor like steel.
- b) Calculate the rate of loss of heat through the polythene foam insulation.
- c) If the dispenser was made with no insulation layer, explain what would happen to the insulated version.
- d) Describe one device used to detect radiation.

ITEM 8

In a school laboratory students were tasked to find specific heat capacity of a metallic solid of mass 5 kg at a temperature of 30°C . They used an electric heater of power 60W for 5 minutes and heated the solid until its temperature raised by 18°C to confirm this temperature raise, they were told to use a thermometer made using these apparatus; a glass bulb, flexible rubber tubing, mercury and movable glass tube. However, they had little knowledge on;

- how to use the recommended thermometer to confirm the final temperature of the solid
- determining the specific heat capacity of the solid using the obtained quantities and stating sources of errors of the applied method.

The task also required them to study the behavior of an ideal gas, they confined N molecules of a gas each of mass m in a cube of length l . They wished to find the expression for pressure exerted by the gas on the wall of the container but they did not know how to proceed. They also wished to use the same expression of

pressure to deduce the equation of the kinetic energy of a molecule of an ideal gas ($\frac{1}{2}m\overline{c^2} = \frac{3}{2}K_B T$).

Task: As a student of advanced level physics,

- Assemble the apparatus and describe how the final temperature of the body would be obtained (confirmed) using the thermometer above.
- Help the students to fulfill their wishes, stating the assumption made by the kinetic theory in deriving the required equation.

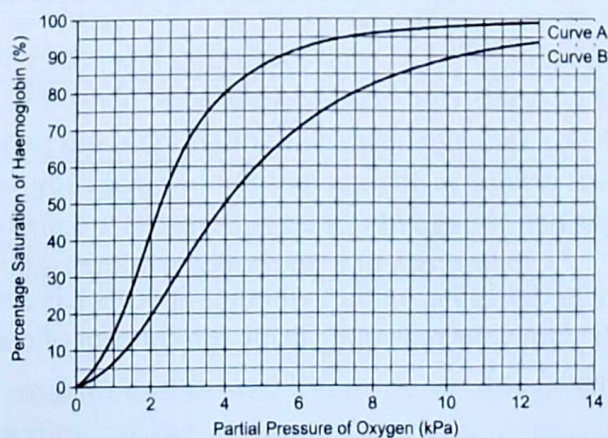
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BIOLOGY ITEMS

ITEM 1

A group of long-distance athletes from a low-altitude region in Uganda travelled to Kapchorwa (high altitude) for an intensive three-week training camp. During their first week, many athletes complained of rapid fatigue, shortness of breath, and headaches during mild exercise. However, by the end of the third week, their endurance had improved significantly. A sports physiologist drew the oxygen dissociation curves for the athletes' haemoglobin on their first day (Curve B) and compared it with the curve of native high-altitude dwellers (Curve A).

FIGURE: COMPARISON OF OXYGEN DISSOCIATION CURVES FOR HIGH-ALTITUDE NATIVE AND UNACCLIMATISED LOW-LANDER



Tasks:

- Compare the oxygen affinities of haemoglobin represented by Curve A and Curve B, and explain how Curve A is an adaptive advantage for native high-altitude dwellers. (8 scores)
- Assess the physiological changes that would occur in the athletes' cardiovascular systems and blood parameters by the end of the three-week training camp. (6 scores)

(c) Propose an ethical and evidence-based strategy for the athletes to maintain their high aerobic efficiency when they return to a low-altitude region for the national competition. (6 scores)

ITEM 2

A commercial floriculture farmer near Lake Victoria in Entebbe specializes in exporting a specific species of ornamental flower (Species Y) to the European market. The farmer needs Species Y to flower exactly in February to meet the high demand for Valentine's Day. However, natural day lengths in Uganda are roughly equal (12 hours light and 12 hours dark) throughout the year. The farmer noticed that under normal natural light conditions, Species Y remains vegetative and does not flower. The agricultural extension officer set up a trial to investigate the effect of varying periods of light and darkness on the flowering percentage of Species Y. The findings are summarised in Table 3. Table 3: Flowering response of Species Y to different light treatments

Treatment	Light Period (hours)	Dark Period (hours)	Flowering Percentage (%)
1	14	10	95
2	12	12	0
3	10	14	0
4	14 (with 15-min dark flash)	10	90
5	11	13 (with 15-min light flash)	85

Tasks:

- (a) Based on the data in the Table, deduce whether Species Y is a short-day plant or a long-day plant. Explain your reasoning using the concept of critical night length. (8 scores)
- (b) Analyse the physiological mechanism by which phytochrome (Pr and Pfr) controls the flowering response in Species Y. (6 scores)
- (c) Propose an effective, ethical, and sustainable agricultural strategy the farmer can employ to force Species Y to flower in February using artificial lighting. (6 scores)

GENERAL PAPER.

Scenario 1

You have gone for holiday in the village and there is panic in the local community after an outbreak of a disease caused by an unknown virus. The people are dying after a day's attack of the virus, with symptoms similar to that of COVID-19. This has come at a time that the country has just concluded elections and had shut down social media platforms for fear of misinformation that may lead to public panic. From your interactions in the communication class, you realise that there is no need for the government to understand that the best solution to this is not shutting down social media platforms, but finding the best means and channel of communication.

Task

Design a comprehensive crisis communication strategy based on the above scenario that balances what the government thinks and practical solutions in a politically sensitive environment.

SECTION B

Scenario 2

You have realized that after Ordinary level (O-Level) a number of learners were not able to proceed to Advanced level (A-level); majority being girls. When you made an inquiry, you were told that they dropped out of school because of pregnancy. This has disturbed you so much and you keep wondering about equality between the boys and girls that everyone keeps talking about. When you count the number of boys in the class, they are more than the girls; and some of the girls that dropped out were dating the very boys that are still in school. You are worried because you have siblings that are still at O-level and you would want to help find out the cause of teenage pregnancy in Uganda and suggest solutions to this recurring problem for the whole community to benefit.

Task

As a student of communication and research at Advanced level, design a community based action plan to further investigate the above scenario.

Scenario 3

In the just concluded elections in your country, you were able to witness a number of abnormalities that are contrary to the elections that you have observed in the schools that you have attended since primary. You realized that there was violence, vote rigging, unrest, nervousness and anxiety between different political groups which disrupted economic activities in both urban and rural community.

Amidst all this, you have been wondering how best you can contribute to the politics of your country without directly going for a political post. You reflected on one of the classes that you had at Advanced level that showed you how you can help in identifying problems in your community and coming up with solutions.

Task

As a witness to the elections above, design a proposal of not more than 800 words that addresses the problem that you have identified in the scenario.

ICT.

ITEM 1

QuickMart Supermarkets relies on a network of desktop point-of-sale terminals, handheld barcode scanners, thermal receipt printers, and cloud-based inventory software to process daily sales and manage stock levels across three branches. Recently, cashiers and store managers have reported frequent system freezes during peak shopping hours, intermittent disconnections between scanners and checkout terminals, corrupted transaction logs that fail to sync with the central database, and unexpected blue screen errors when printing end-of-day reports. These technical disruptions have led to long checkout queues, inaccurate stock records, delayed supplier payments, and growing frustration among both staff and customers. The regional operations coordinator, who oversees daily store functions but lacks formal training in ICT system diagnostics, is concerned about the financial impact of prolonged downtime and is hesitant to approve new equipment purchases without expert guidance. He has formally requested a comprehensive technical advisory to help him navigate equipment replacement, resolve ongoing hardware and software malfunctions, and establish sustainable operational practices.

Tasks

Prepare a detailed advisory document recommending suitable hardware and software specifications for point-of-sale systems, practical troubleshooting steps for connectivity and freezing issues, and routine maintenance practices to ensure uninterrupted sales processing and accurate inventory tracking.

ITEM 2

St. Mary's Rural Health Centre recently digitized its patient management system by installing new desktop workstations, networked printers, and cloud-based medical records software to streamline appointment scheduling, store vaccination histories, and generate monthly health reports. Following an unexpected regional power surge, several devices failed to complete the boot sequence, displayed persistent driver conflict warnings, and refused to synchronize with the central health database, leaving clinical staff unable to access critical patient files. The clinic administrator is concerned about data integrity, potential privacy breaches from unsynchronized records, and the long-term reliability of the current ICT setup, especially given the centre's limited technical support staff. Recognizing your expertise, the administrator has requested a formal technical proposal to systematically diagnose the reported failures, implement protective measures against future electrical disruptions, and restore secure, reliable data synchronization across all clinical workstations.

Tasks

Draft a technical proposal outlining diagnostic procedures to resolve boot failures and driver mismatches, safe power management solutions to prevent future electrical disruptions, and software configuration steps to restore secure patient data synchronization.

ITEM 3

The Gulu District Vocational Training Institute is organizing a community skills development workshop targeting youth entrepreneurs, requiring instructors to deliver instructional presentations, distribute formatted training handouts, and share supplementary digital resources with external facilitators. The current training materials lack consistent formatting, professional slide templates, and a reliable method for secure file sharing, causing delays in workshop preparation and confusion among participants who receive outdated or incompatible document versions. The workshop coordinator, responsible for program delivery

but unfamiliar with advanced digital content creation tools, has expressed concern over the poor quality of current materials and the risk of unauthorized access to proprietary training content. She has requested your assistance to establish standardized digital workflows that ensure professional presentation delivery, consistent document formatting, and secure collaborative sharing.

Tasks

Prepare a practical guide on designing visually consistent electronic presentations, applying professional word processing formatting for training handouts, and establishing efficient file-sharing protocols for collaborative workshop preparation.

ITEM 4

A Kampala-based accounting firm uses electronic spreadsheet software to track client invoices, monthly expense reports, and tax calculation schedules across multiple departments. Staff frequently encounter formula errors, inconsistent date formats, accidental cell overwrites during collaborative editing, and difficulty generating consolidated financial summaries, which delays billing cycles and disrupts client reporting timelines. The senior accountant, who manages financial operations but lacks advanced data management training, is concerned about the accuracy of financial records and the inefficiency of manual error correction processes. She has formally requested a structured procedural manual to help staff resolve common calculation errors, implement data validation controls, and standardize reporting templates to ensure accurate and timely financial documentation.

Tasks

Develop a step-by-step troubleshooting manual for resolving common spreadsheet calculation errors, implementing data validation rules to prevent accidental overwrites, and standardizing formatting templates to ensure accurate and timely financial reporting.

ITEM 5

A local non-governmental organization coordinates volunteer outreach programmes and community health projects using email distribution lists and shared cloud storage folders to exchange project updates, budget reports, and participant registration forms. Staff members have recently reported delayed message delivery, lost email attachments due to size limits, unauthorized access to confidential project directories, and difficulty verifying the authenticity of external communication requests. The executive director, concerned about data privacy compliance and the security of sensitive community information, has requested a comprehensive communication framework to protect organizational data, streamline email and file-sharing workflows, and ensure ethical handling of stakeholder communications.

Tasks

Prepare a comprehensive document outlining secure email configuration practices, cloud storage access control settings, and ethical data-sharing protocols to safeguard organizational communications and maintain compliance with data protection standards.

ITEM 6

The Kabale Cultural Heritage Centre publishes a monthly digital newsletter highlighting local historical archives, upcoming community exhibitions, and youth art initiatives, but the current publications suffer from inconsistent layout design, poor image quality, and formatting errors that prevent professional printing and mobile viewing. The communications officer, who manages content creation but lacks training in electronic publishing software, has struggled to produce visually cohesive materials that align with the centre's branding guidelines and reach diverse community audiences effectively. Recognizing the need for improved digital content production, the director has requested a structured publication

guide to help staff create professional, multi-format newsletters that are optimized for both print distribution and online sharing.

Tasks

Draft a practical guide on selecting appropriate electronic publishing software, applying consistent design templates for newsletter layouts, and configuring export settings to produce professional, multi-format community publications.

ITEM 7

A secondary school library manages book loans, resource inventory, and student borrowing records using basic spreadsheet software, resulting in duplicate borrower entries, lost return documentation, inconsistent due date tracking, and difficulty generating overdue reports for administrative review. The head librarian seeks a structured digital database system to automate record-keeping, validate new entries, and produce accurate usage analytics that support resource planning and budget allocation. Given the limited technical support available at the school, the librarian has requested a detailed proposal for designing a simple yet effective electronic database that eliminates data redundancy, enforces accurate record entry, and generates automated reports for library management.

Tasks

Prepare a detailed proposal for designing a simple electronic database to manage library records, implementing data validation to eliminate duplicate entries, and creating query-based reports to track borrowing trends and overdue materials.

ITEM 8

An agricultural extension office is piloting a generative artificial intelligence advisory tool to generate crop management messages, weather updates, and pest control recommendations for local farming cooperatives, but users report generic responses, inaccurate regional weather data, and confusing navigation menus that delay access to critical farming information. Extension officers are concerned about the platform's reliability, the risk of providing misleading agricultural

advice, and the lack of localization for regional farming conditions. The project coordinator has requested a technical improvement document to enhance AI response accuracy, simplify interface navigation, and validate data sources to ensure locally relevant and trustworthy advisory outputs for smallholder farmers.

Tasks

Prepare a technical improvement document outlining prompt engineering strategies to enhance AI response accuracy, interface redesign recommendations for simplified navigation, and data validation steps to ensure locally relevant advisory outputs.

ITEM 9

A regional transport logistics company uses GPS tracking devices, desktop dispatch terminals, and ruggedized mobile tablets to monitor fleet movements, assign delivery routes, and communicate with drivers across multiple districts. Drivers frequently experience device overheating during long hauls, rapid battery drainage in remote areas, unresponsive touchscreens under dusty conditions, and intermittent GPS signal loss that causes dispatch scheduling delays and route inaccuracies. The fleet manager, responsible for daily operations but unfamiliar with hardware maintenance protocols, is concerned about equipment deterioration and operational inefficiencies, and has requested a comprehensive maintenance advisory to optimize device performance, implement troubleshooting procedures, and establish routine care practices for field operations.

Tasks

Draft a maintenance advisory recommending durable hardware specifications for field operations, troubleshooting steps for thermal management and battery optimization, and routine cleaning protocols to extend device lifespan under demanding conditions.

ITEM 10

A university research department relies on word processing software to draft academic proposals, format citation references, and merge student enrollment lists into personalized correspondence for grant applications and conference invitations. Staff members struggle with inconsistent reference styles, broken mail merge links, formatting errors in final submissions, and difficulty managing version control across multiple collaborative documents. The department head, seeking to improve academic documentation standards and streamline administrative correspondence, has requested a procedural guide to standardize citation management, resolve mail merge connectivity issues, and establish collaborative editing workflows that ensure error-free document production.

Tasks

Prepare a procedural guide on configuring citation management tools, troubleshooting mail merge connectivity issues, and applying standardized document templates to ensure error-free academic drafting and correspondence.

ITEM 11

A municipal water authority collects daily consumption readings across multiple districts and shares summary reports via email attachments, but analysts report version control conflicts, delayed report distribution, incompatible spreadsheet formats, and difficulty visualizing real-time consumption trends for infrastructure leak detection and budget forecasting. The district water engineer requires a streamlined data workflow to enable collaborative spreadsheet editing, automated chart generation for trend analysis, and secure distribution protocols that ensure timely access to accurate consumption data for decision-making. Recognizing the need for improved data management practices, the chief engineer has requested a workflow document to standardize cloud-based collaboration, automate visual reporting, and implement secure sharing methods.

Tasks

Develop a workflow document outlining cloud-based spreadsheet collaboration methods, automated chart generation for consumption trend analysis, and secure email distribution protocols to enable timely infrastructure decision-making.

ITEM 12

A regional tourism board needs to create interactive presentation slides for international travel fairs and design matching promotional brochures for distribution at visitor centers, but current materials lack visual consistency, embedded multimedia elements, professional layout structures, and standardized branding across different platforms. The marketing coordinator, responsible for destination promotion but limited in digital content creation expertise, has struggled to produce cohesive promotional materials that effectively communicate travel packages, highlight cultural attractions, and maintain institutional branding. The board director has requested a comprehensive content creation plan to standardize presentation design, integrate multimedia storytelling, and produce professional electronic publications that align with tourism marketing objectives.

Tasks

Prepare a content creation plan detailing template standardization for presentations, multimedia integration techniques for engaging destination storytelling, and electronic publishing steps to produce cohesive promotional brochures.

ITEM 13

A veterinary clinic stores patient records, vaccination schedules, supplier invoices, and treatment histories across disconnected desktop computers and mobile devices, leading to missing files, duplicate animal profiles, inconsistent data entry formats, and difficulty retrieving historical treatment information during emergency consultations. The head veterinarian requires a centralized digital system to consolidate records, automate data backup routines, and enable rapid

retrieval of patient histories for accurate clinical decision-making. Concerned about data loss and operational inefficiency, the clinic manager has requested a system migration proposal to consolidate hardware resources, design a relational database for centralized record-keeping, and implement automated backup protocols to ensure data security and clinical continuity.

Tasks

Draft a system migration proposal outlining hardware consolidation strategies, relational database design for centralized record-keeping, and automated backup routines to ensure rapid and accurate data retrieval during clinical emergencies.

ITEM 14

A youth innovation hub hosts weekly virtual mentorship sessions using video conferencing platforms to connect students with industry professionals, but participants experience poor audio quality, unauthorized screen sharing, difficulty accessing shared AI-generated learning resources, and inconsistent meeting recordings that hinder follow-up learning. The programme coordinator, responsible for digital learning delivery but unfamiliar with virtual meeting security configurations and AI resource management, has expressed concern over platform vulnerabilities and the ineffective integration of AI-assisted educational materials. The hub director has requested a digital facilitation guide to optimize virtual meeting settings, secure participant access, and establish ethical guidelines for sharing AI-generated content during structured online learning sessions.

Tasks

Prepare a digital facilitation guide covering virtual meeting security configurations, bandwidth optimization techniques, and ethical guidelines for sharing AI-assisted educational materials during structured online learning sessions.

ITEM 15

A legal aid office drafts client consultation summaries, court filing templates, and public awareness flyers using separate software applications, resulting in inconsistent header formatting, misplaced images, inefficient file organization across multiple platforms, and difficulty producing print-ready public documents that comply with institutional branding standards. The administrative manager, responsible for document production but lacking training in integrated word processing and electronic publishing workflows, has struggled to maintain consistent formatting standards and streamline multi-document creation processes. The office director has requested a document management protocol to standardize template design, optimize publishing layouts for public outreach, and establish hierarchical file organization methods to improve administrative efficiency.

Tasks

Develop a document management protocol outlining standardized word processing templates, electronic publishing layout adjustments for public flyers, and hierarchical folder structuring methods to streamline legal document production.

ITEM 16

A retail chain tracks monthly sales performance using electronic spreadsheets and recently integrated a basic artificial intelligence forecasting tool to predict seasonal inventory needs, but managers report formula conflicts, inaccurate stock predictions, unclear visualization of demand fluctuations, and difficulty interpreting AI-generated recommendations for procurement planning. The supply chain coordinator, responsible for inventory management but unfamiliar with spreadsheet error resolution and AI prompt optimization, has requested an analytical report to resolve calculation discrepancies, refine forecasting prompts for seasonal trends, and configure clear data visualizations that support informed purchasing decisions. Concerned about overstocking and stockouts, the retail

manager seeks improved data analysis practices to align inventory levels with market demand.

Tasks

Prepare an analytical report detailing spreadsheet error resolution steps, AI prompt refinement techniques for inventory forecasting, and chart configuration methods to clearly display seasonal sales trends for procurement planning.

ITEM 17

A regional education office distributes exam timetables, curriculum guidelines, and policy updates via email and shared network drives, but teachers report broken hyperlinks, incompatible file formats across different devices, difficulty accessing documents on older classroom computers, and inconsistent version control that causes confusion during exam preparation. The education coordinator, responsible for resource distribution but lacking expertise in software compatibility management and accessible file-sharing practices, has requested a digital communication framework to standardize document formats, verify cross-device compatibility, and implement secure sharing methods that ensure seamless access to official educational materials across diverse institutional hardware.

Tasks

Draft a digital communication framework outlining software compatibility checks, standardized file conversion protocols, and accessible sharing methods to ensure seamless document distribution across diverse institutional devices.

ITEM 18

A community health NGO presents quarterly immunization data using static presentation slides while storing raw vaccination records in disconnected spreadsheets, leading to manual data entry errors, delayed report generation, inconsistent trend visualization, and difficulty presenting accurate immunization coverage statistics to district health officials during policy review meetings. The

field data coordinator requires an integrated data presentation system that links database records to presentation software, automates report generation, and standardizes slide formatting to deliver accurate immunization trend briefings. Concerned about reporting inaccuracies affecting health resource allocation, the NGO manager has requested a data presentation proposal to streamline data integration, automate visual reporting, and improve presentation standards for district health consultations.

Tasks

Prepare a data presentation proposal outlining database integration with presentation software, automated report generation techniques, and slide formatting standards to deliver accurate immunization trend briefings.

ITEM 19

A manufacturing startup uses desktop controllers and sensor networks to monitor production line efficiency, but operators experience frequent peripheral disconnects, uncalibrated sensor readings, AI alert fatigue from false malfunction notifications, and difficulty interpreting automated system diagnostics that delay maintenance interventions. The production manager, responsible for operational continuity but unfamiliar with hardware reconnection protocols, sensor calibration procedures, and AI threshold adjustments, has requested a technical advisory to stabilize peripheral connections, recalibrate sensor accuracy, and optimize AI alert parameters to reduce false positives and maintain reliable real-time production monitoring. Concerned about equipment downtime and inaccurate performance tracking, the factory supervisor seeks improved hardware maintenance and AI system tuning practices.

Tasks

Develop a technical advisory covering hardware reconnection protocols, sensor calibration procedures, and AI threshold adjustments to reduce false alerts and maintain accurate real-time production monitoring.

ITEM 20

A digital literacy initiative trains rural entrepreneurs to use smartphones, social media marketing platforms, and AI content generators for business growth, but participants report confusing platform interfaces, overlooked privacy settings, unreliable AI-generated marketing copy, and difficulty securing customer data during online transactions. The programme facilitator, responsible for digital skills training but lacking structured guidance on device configuration, social media security, and AI prompt optimization for business applications, has requested a comprehensive training manual to standardize device setup, configure privacy protections, and teach effective prompt engineering techniques that enable entrepreneurs to safely leverage digital marketing tools. Concerned about online fraud and ineffective content generation, the initiative coordinator seeks improved digital safety and AI utilization practices for small business owners.

Tasks

Prepare a comprehensive training manual outlining device setup best practices, social media privacy configuration steps, and prompt optimization techniques to enable entrepreneurs to safely and effectively leverage digital marketing and content creation tools.

HISTORY OF AFRICA

ATTEMPT ALL ITEMS.

ITEM ONE

SECTION A

Pre-colonial African societies were organised and interconnected in ways that supported peaceful coexistence. In Uganda, the clan provided a strong sense of belonging and guided behaviour. Young people prepared for adulthood through initiation ceremonies, such as those practised among the Bagisu. African Traditional Religion encouraged care for others and respect within the community. People worked collectively in farming and crafts, while trade

networks such as the Trans Saharan Trade brought different communities into contact. These practices helped communities maintain stability and offer guidance for addressing present challenges.

Today, the absence of these traditional systems has led to weak social cohesion and a loss of belonging, moral decline and indiscipline, a youth identity crisis, reduced respect for elders and authority, and a decline in communal work and mutual support in Gata. This situation has resulted in social instability and frequent conflicts, increased crime and corruption, weak moral standards, and a loss of cultural identity among the youth of Gata.

Local leaders in Gata link this situation to a declining understanding of long-standing social structures that once guided social organisation and community interaction. They propose to draw insights from pre-colonial social structures to address the challenges facing their communities.

Task

Analyse the pre-colonial social structures in Africa and explain how they can be applied to solve the problems in Gata.

ITEM TWO

Between 1815 and 1871, nationalist ideas developed in Europe during the nineteenth century, leading to the unification of Italy and Germany. People with shared identity worked towards unity despite political divisions. These ideas later influenced Pan Africanism, which emerged in the late nineteenth century and was shaped by figures such as W. E. B. Du Bois and Kwame Nkrumah. Africans and the African diaspora united against colonial rule and racial discrimination. This spirit encouraged African nationalism in the mid twentieth century and strengthened demands for independence and fair treatment. These developments strengthened African nationalism and led to resistance against colonial rule and demands for self rule, equality, and justice across Africa.

Janga community is reviewing its patriotic initiatives following reports from consultative organisations indicating that many young people lack knowledge of Africa's historical struggles for sovereignty. Experts note that this gap limits understanding of the continent's nationalist emancipation efforts and reduces appreciation of patriotism among learners. Community leaders seek to strengthen learners' understanding of patriotism through knowledge of the struggles Africans experienced in attaining independence. This aims to prepare young people to respond thoughtfully to contemporary nationalist challenges.

Task

Analyse how strategies used in Africa to promote independence can be applied in Janga to promote patriotism.

SECTION B

HISTORY OF WORLD AFFAIRS

ITEM 1

Uganda has recently experienced a wave of citizen protests and public debates over national governance. The Ugandan parliament notes with concern that these tensions resemble past periods in history when societies underwent revolutionary changes due to leadership challenges. Civil society organisations warn the parliament that ignoring the lessons from history risks repeating mistakes that can weaken national unity and development.

The parliamentary speaker has invited senior citizens to provide recommendations that could guide Uganda in managing social and political challenges peacefully and fairly

Task

As a senior citizen, advise the parliament on how Uganda can manage such protests and prevent the emergence of authoritarian regimes.

ITEM 2

Uganda is yet to officially begin commercial oil production in the Albertine Graben. Because of its oil and strategic location in East Africa, the country faces pressure to join a regional military alliance to protect its natural resource. As a result, regional tensions are rising and a border dispute is close to breaking out between Uganda and its neighbours, raising fears that the region could become divided, similar to the situation on the Korean Peninsula. Meanwhile, international oil companies are lobbying the government, recalling how external involvement in the Middle East often contributed to instability and partition.

You are the Senior Advisor on International Relations at the Ministry of Foreign Affairs in Kampala. The United Nations has sent a delegation to ensure that Uganda's new oil wealth contributes to social harmony rather than conflict.

Task

Prepare a Strategic Foreign Policy Brief to be presented to the UN delegation.

LITERATURE.

Item I:

Your class has been assigned to design a Literature display in the school library. The class decides to make three charts; one for poetry.

Tasks:

- a) State how you would define poetry.
- b) Identify four features that make up poetry.
- c) How does Prose differ from poetry.

Item II

The Refugee

Pushed here to there
from place to place;
weariness and sorrow line her face.
No home in which to lay her head;
only dark memories of violence
from which she's fled
to seek sanctuary from guns,
fear and bright blood shed.
She is all alone.
Her husband and her loved ones dead.
No future, work and little hope,
only charity enables her to cope.
While small children cling to her and cry
she droops her head – and longs to die.
She is far from the land that gave her birth;
dying, she'll lie in alien earth.

Valerie Cuthbert

Tasks:

- a) There is a dominant subject that each poet develops in a poem. Discuss the subject matter developed by Valerie Cuthbert in the poem.
- b) Poets communicate their message to the audience in many ways. Most times they do not do it directly but assign some other voice to deliver the important message. With close reference to the poem, comment on the speaking voice.
- c) The intonation in all poems is largely aligned with the message in the poem. Comment on the tone used by the speaker to develop the poem
- d) Every reader feels some way when he/she reads a piece of Literature. Which emotions does this poem arouse in you?

SECTION B

ITEM 4; NOVELS AND SHORT STORIES

Scenario

While reading a novel, your friend, Joshua is struck by how cleverly authors use a variety of storytelling techniques to convey their powerful messages. He has come to a realization that without these devices or styles, no writer achieves their intended purposes.

Task

Basing on Joshua's insights, examine how any five such techniques are used in any set novel you have studied to enhance any three key messages or themes of that novel. Provide ample illustrations where necessary.

HOLIDAY WORK

ECONOMICS P.220/2

SECTION A

Construct 2(Economic strategy)

Item 1:

The government of Uganda through the cabinet minister for finance intends to put aside \$10 billion, every financial year for the next ten years to embark on the strategy of establishing domestic manufacturing industries to produce goods that were previously imported from the European Union (EU) and China following the close to \$7 billion that country spends annually on their importation.

However, the shadow minister for trade in the opposition government argues that unless efforts are put in place to ensure that the locals (Ugandans) are the ones mostly employed to execute operations in the established industries rather than machines which are to still be imported from China and the European Union, the strategy shall still backfire on the government.

Task.

- a) Analyze the challenges that limit implementation of the strategy of the cabinet minister.
- b) As an economist who is invited, design an argument in support of the shadow minister.

SECTION B

Construct 3 (Economic planning and policy)

Item 2:

The Uganda Bureau of statistics (UBOS) dispatched two teams (Team A and Team B) to collect data about the total monetary value of all final goods and services in the country. Surprisingly, the two teams presented contradicting figures which the director of UBOS considered unrealistic and unreliable. The director therefore decided to hire a private N.G.O firm led by Mrs. Rose Ssegawa, a well-known economist and despite using the same approaches, Mrs. Rose's firm went on to include the money (total deposits and credit) made by all the financial institutions operating within the country, since the services they offered were part of the production grid of the country.

You have been invited in a decision-making meeting by the UBOS director about the different data provided.

Task.

- a) Assess how the hired teams were able to come up with the data that they presented to the UBOS director.
- b) Examine the causes of the unauthenticity of the data presented by the teams in the scenario.

Item 3:

The current economics class of Mengo senior school led by their teachers recently conducted a study visit to Bank of Uganda .While there, the human resource and plant manager reported to them that as of the mid 2025 records on mobile banking, out of the about 800 million transactions made, the total amount of money in circulation through the system was about shs.5.5 billion at a speed and velocity of approximately 16 million each day.

Despite the impressive records on paper, one of the teachers was quick to point out that most of these transactions and money was only Concentrated in the hands of a few rich and wealthy individuals that made up just 10% of the total population of the country which clearly reflected a weakness of the government in power that the human resource manager worked for and represented.

As a member of the above-mentioned class, you are requested to compile a report to the economics head of department;

Task.

- a) Determine the general price of the mobile transactions made in the scenario above.
- b) Examine the functions of the financial institution visited by the class in the scenario above.
- c) Analyze the causes of economic situation pointed out by the teacher in the scenario.

Item 4:

In his annual report, the minister in charge of natural disaster and preparedness presented that due to the prolonged drought between January and February, the macroeconomic equilibrium of Uganda is that the aggregate supply exceeds the aggregate demand despite the full employment of resources and income in the economy.

Meanwhile policy makers have gone on to agree that this is not entirely the case since when it comes to last quarter of the year, the aggregate demand usually exceeds the aggregate supply which is attributed to the high incomes and subsequent purchasing power within the economy, taking in consideration that its towards the closure of the year. This is on the pretext that January is the first month of the year.

Task.

- a) Illustrate the difference between the two economic situations in the scenario.
- b) Assess the possible policy measures that can be adopted to close the economic situation by the;
 - i. The minister.
 - ii. Policy makers.

END

ENT PAPER 1 PRACTICE ITEMS 2026

Item1:

Okello is a Senior 6 leaver in Gulu City who recently inherited a small piece of land near a newly constructed busy highway and a large public market. He noticed that many travelers and market vendors struggle to find affordable, healthy refreshments and a place to charge their mobile phones. Okello has UGX 500,000 in savings and is considering starting a "Solar-Powered Refreshment and Charging Hub." However, he is worried about the high competition from established shops and the unpredictable weather affecting his solar equipment.

Task:

- a). Explain ways Okello used his **observation skills** to identify a business opportunity in his community.

- b). From the scenario provided, identify 3 **strengths** and 3 **threats** that Okello faces in his proposed venture.
- c). Suggest four ways Okello can add **value** to his refreshments to gain a competitive advantage over the existing established shops.
- d). As a student of Entrepreneurship, advise Okello on four **social responsibilities** he should fulfill toward the local community in Gulu.
- e). Describe four **calculated risks** Okello is taking by launching this specific business model.

Item 2:

The Scenario: "Aponye's Fruit Processing Venture"

Aponye, a Senior 6 leaver in **Yumbe District**, noticed that during the mango season, large quantities of fruit rot in the orchards due to a lack of market. After attending a community workshop on value addition, she decides to start a small-scale business called "**Nile Zest Juice**," producing organic mango juice and dried fruit snacks.

She has secured a small space at the local trading centre. However, Aponye is worried about the **tax obligations** involved. She recently heard from a local leader that all businesses must contribute to national development through taxes like **Value Added Tax (VAT)** and **Presumptive Tax**, but she does not know how these will affect her small startup capital of UGX 1,500,000. Additionally, she is unsure whether to register as a sole trader or a partnership to manage her tax burden better.

Task:

As a student of Entrepreneurship, write a **business advisory report** to Aponye in which you:

- a) **Analyze the business opportunity** Aponye has identified, explaining four factors that make it a viable idea in Yumbe.
- b) **Evaluate the impact of the "Entrepreneurial Environment"** by identifying three **Internal** and three **External** factors that could affect "Nile Zest Juice."
- c) **Advise on Tax Compliance** by explaining the importance of obtaining a **Taxpayer Identification Number (TIN)** from the **Uganda Revenue Authority (URA)**.

- d) Distinguish between VAT and Presumptive Tax, showing Aponye which one is more likely to apply to her small-scale startup.
- e) Suggest four tax-planning strategies Aponye can use to remain compliant while maximizing her small capital.

Item 3:

The Scenario: "Nabirye's Mobile Tailoring & Fashion Hub"

Nabirye, a Senior 6 leaver in **Iganga District**, recently completed a vocational course in fashion design. She noticed that many working professionals in her town find it difficult to visit tailoring shops during working hours. To solve this, Nabirye intends to launch "**Smart Stitch**," a mobile tailoring service where she visits clients at their workplaces or homes to take measurements and deliver finished garments.

She has a startup capital of **UGX 2,500,000** and plans to use a motorcycle for her movements. However, a local council official recently informed her that since she will be operating a commercial business, she must register with the **Uganda Revenue Authority (URA)** and pay **Presumptive Tax** based on her annual turnover. Nabirye is confused about why she should pay taxes when her business is still "on wheels" and small-scale. She is also worried that taxes might "eat up" her small capital.

The Task:

As an Entrepreneurship student, write a **Business Advisory Letter** to Nabirye in which you:

- a) Explain three **creative** elements Nabirye has introduced to make her tailoring service different from traditional shops in Iganga.
- b) Identify **market indicators** from the scenario that suggest Nabirye's "Smart Stitch" will be successful.
- c) Justify to Nabirye why it is necessary for her to obtain a **Taxpayer Identification Number (TIN)** even though she runs a mobile business.
- d) **Assess Tax Impact:** Describe how **Presumptive Tax** is calculated for small businesses in Uganda and how it differs from **Value Added Tax (VAT)**.

- e) **Propose Tax Management:** Suggest two **legal tax-planning** strategies Nabirye can use to ensure she remains compliant without collapsing her business.

Item 4:

The Scenario: "Kato's Organic Honey Venture"

Kato, a resident of **Nakaseke District**, noticed that many local farmers in his village produce high-quality raw honey but sell it at very low prices to middlemen because they lack processing and packaging equipment. Kato has decided to start "**Nakaseke Gold Honey**," a business that will buy raw honey from these farmers, refine it, and package it into branded glass jars for sale to supermarkets in Kampala and Entebbe.

Kato has a budget of **UGX 4,000,000** for equipment and initial stock. During a recent business seminar, he was told that since he will be selling to formal supermarkets, he must register for **Value Added Tax (VAT)** and will be required to file returns using the **URA E-Tax portal**. Kato is worried because he does not own a computer and is unsure if his small business can handle the

18% VAT rate without losing customers.

The Task:

As an Entrepreneurship consultant, prepare a **Business Advisory Report** for Kato in which you:

- a) Explain four factors that make Kato's honey business a "viable opportunity" rather than just a "good idea."
- b) Suggest two ways Kato can use **innovative packaging** or **branding** to justify a higher price for his honey in urban supermarkets.
- c) Describe the steps Kato should take to register for a **Taxpayer Identification Number (TIN)** and explain the benefit of using the **E-Tax system** for a rural-based entrepreneur.
- d) Explain to Kato how **Value Added Tax (VAT)** works as an "indirect tax" and why the final consumer, rather than his business, ultimately bears the tax burden.

- e) Suggest two ways Kato can manage his **tax records** effectively to ensure he accurately calculates his **input tax** and **output tax**.

ENT PAPER 2 PRACTICE ITEMS 2026

Item 1: The School Business Club

The "**Unity Bakers**" **School Business Club** produces high-quality doughnuts for the student community. Despite high demand, the club is facing a crisis: students often complain that the doughnuts are sometimes burnt or arrive late for break time. Furthermore, the club members (students) are frequently skipping their production shifts, claiming the work is too tiring and disorganized.

The Club President has drafted a **Business Plan** to buy a modern electric oven to replace the charcoal stoves, but the School Patron is hesitant to approve it until the club improves its internal management.

Task:

As the Club's Production Manager, prepare a report for the School Patron addressing the following:

- a) Identify the quality control measures the club should implement to ensure the doughnuts are consistent in taste and timing.
- b) Suggest the strategies to motivate club members and ensure they attend their shifts regularly without feeling overwhelmed.
- c) Explain how the proposed purchase of an electric oven will impact the **Operational Plan** and the **Financial Plan** sections of the club's existing Business Plan.

Item 2: The Field Trip

During a field trip to "**Victoria Fruit Processors Ltd.**," Senior 6 students observed that the factory has three distinct departments: Cleaning, Pulping, and Packaging. The General Manager explained that while they have the best machines, their biggest challenge is "**Labor Turnover**" (workers quitting frequently) and "**Wastage**" of raw mangoes during the peak season.

The students noted that the factory layout was cramped, making it difficult for workers to move finished juice boxes to the loading bay

efficiently. The manager mentioned they are currently revising their **Business Plan** to attract new investors.

Task:

Based on your observations during a field trip:

- a) Propose a **Plant Layout** strategy (e.g., Process vs. Product layout) that would reduce the movement of materials and minimize the wastage mentioned by the manager.
- b) Recommend the steps the company should include in its **Recruitment and Selection** process to ensure they hire committed workers and reduce labor turnover.
- c) Describe how the **Marketing Plan** and **Production Plan** are interdependent in the business plan of a seasonal business like Victoria Fruit Processors Ltd.

Item 3: The School Business Club

The "**Sparkle Clean**" **School Business Club**, which produces liquid soap, has dominated the school market for a year. However, a local supermarket has started selling a branded detergent at a lower price. To survive, the club's **Business Plan** proposes "Value Addition"—adding herbal extracts (Aloe Vera) to their soap to market it as a "Skin-Care" product.

The club needs to raise **UGX 200,000** for new packaging and herbal ingredients. The club's current financial snapshot shows:

- **Cash at Hand:** UGX 50,000
- **Stock of Old Soap:** UGX 150,000
- **Owed to Chemicals Supplier:** UGX 80,000

The Task:

- a) Calculate the **Acid Test (Quick) Ratio** for the club.
- b) Explain if the club can afford the new ingredients immediately.
- c) Suggest **three** promotional strategies the club should include in its **Marketing Plan** to convince students to switch from the cheap supermarket detergent to their new herbal soap.

- d) Identify two **health and safety risks** associated with handling chemicals in a school environment and how the club should manage them.

Item 4: The Field Trip

Your class visited "**Nile Heights Hotel & Resort**" in Jinja. The Manager explained that their **Human Resource Management** focuses on "Service Excellence." You observed that while the front desk staff were very professional, the kitchen staff seemed frustrated because of a broken industrial dishwasher, forcing them to wash plates by hand during a busy lunch hour.

The Manager revealed that their **Net Profit Margin** dropped from **25% to 10%** this year due to high electricity costs and food wastage in the buffet section.

The Task:

- a) Discuss the concept of "**Job Satisfaction**" based on your observation of the kitchen staff. How does the broken equipment affect the hotel's overall service quality?
- b) Suggest **two** ways the hotel can use its **Financial Plan** to address the "high electricity costs" (e.g., investing in solar or energy-saving bulbs).
- c) Propose a **Waste Management Strategy** for the buffet section to help the hotel recover its profit margin.
- d) During the trip, you noticed the hotel dumps some plastic waste near the riverbank. Draft a short **Corporate Social Responsibility (CSR)** policy for the hotel to include in its revised Business Plan.

Item 5: Field Trip

"Kigezi High-Grade Tea Packers," a local business in Kabale, is preparing its business plan for the next financial year to seek expansion capital. The proprietor, Mr. Twinomujuni, has provided the following summarized financial information for the year ended 31st December 2025:

- **Sales:** Shs 150,000,000
- **Cost of Sales:** Shs 100,000,000
- **Net Profit:** Shs 15,000,000

- **Current Assets:** Shs 20,000,000 (Inventory: Shs 15,000,000; Cash: Shs 5,000,000)
- **Current Liabilities:** Shs 25,000,000
- **Total Equity:** Shs 80,000,000

Despite increased sales, Mr. Twinomujuni is facing difficulties paying suppliers on time and fears his business may not survive if they expand without addressing current financial issues.

Tasks:

- Calculate** the following ratios for Kigezi High-Grade Tea Packers:
 - Current Ratio
 - Acid Test (Quick) Ratio
 - Net Profit Margin
- Interpret** the findings, focusing on the company's liquidity position.
- Propose** three financial strategies Mr. Twinomujuni should include in his business plan to improve the company's performance.

Item 6: Field Trip

Bright Harvest Ltd is a medium-sized agribusiness in Mbarara that processes milk into yogurt. For the last two years, the Managing Director, Mr. Kato, has noticed that while the factory is always busy and making high sales, the company often struggles to pay its milk suppliers on time and lacks enough cash to buy a new refrigerated delivery truck.

Below is a summary of the financial position for the year ended December 2025:

Item	Amount (UGX)
Sales Revenue	500,000,000
Cost of Sales	350,000,000

Net Profit	45,000,000
Current Assets (Inventory, Cash, Receivables)	120,000,000
Current Liabilities (Trade Payables, Short-term loans)	100,000,000
Total Assets	600,000,000

Mr. Kato wants to apply for a **UGX 150,000,000 loan** from a commercial bank to expand his distribution route. However, his accountant suggests that before borrowing, they must analyze the business's "health" using financial ratios to include in their updated **Business Plan**.

Task:

As a business consultant, help Mr. Kato evaluate his situation:

- Analyze** the current financial performance of Bright Harvest Ltd by calculating the **Gross Profit Margin** and the **Current Ratio**.
- Interpret** what these two ratios reveal about the company's ability to manage its daily operations and its readiness to take on a new loan.
- Advise** Mr. Kato on two strategies he should include in his business plan to improve his cash flow without necessarily relying on a bank loan.

Item 7: The School Business Club Project

The "**Greener Pastures**" **School Business Club** at City High school has been running a stationery and snack kiosk for the past two terms. The club members want to expand their business by adding a photocopy service. To do this, they need to present a **Financial Plan** to the School Administration to request a seed-capital loan.

The Club Finance Manager has extracted the following data from the club's books for the last term:

Item	Amount (UGX)
Total Sales Revenue	1,200,000
Cost of Sales	800,000
Operating Expenses (Rent, electricity)	150,000

Inventory (Stock)	300,000
Cash in Hand	50,000
Trade Payables (Amount owed to suppliers)	200,000

Task

- a) **Calculate** the following ratios for the club's business:
 - i. **Gross Profit Margin** ii. **Current Ratio**
- b) **Explain** why the School Administration might be concerned about the club's **Current Ratio** before approving the new loan for the photocopier.
- c) **Propose** two ways the club can improve its **Net Profit Margin** in the next term without increasing the prices of stationery.

Item 8: The Field Trip Experience

During the Senior 6 Entrepreneurship **Field Trip**, Mityana SS senior 6 Ent class visited "**Mityana Agro workers Ltd.**" a successful maize processing plant. During the interaction, the proprietor, Ms. Nakato, shared that she regularly uses financial ratios to monitor her business health. She provided the following summary of her performance compared to the previous year:

Financial Metric	Year 2024	Year 2025
Net Profit Margin	15%	8%
Stock Turnover Ratio	12 times	6 times
Debt-to-Equity Ratio	0.5:1	1.8:1

Task

Using the information gathered from the field trip:

- a) **Interpret** the trend in the **Stock Turnover Ratio**. What does this change suggest about the business's sales performance or inventory management in 2025?
- b) **Evaluate** the risk level of Mityana Agro workers Ltd by analyzing the change in the **Debt-toEquity Ratio**.
- c) Based on your experience of the plant layout and operations during one of the trips you carried out, **suggest** three practical measures Ms. Nakato should include in her **Operational Plan** to reverse the declining profit margin.

Item 9: School Business Club

The "**Starlight Crafts**" **School Business Club** produces handmade recycled paper notebooks for the school community. Recently, the club received a large order from the Old Students' Association for an upcoming reunion. However, the production team is struggling to maintain a consistent "smooth" finish on the paper, and the marketing team has noticed that many students still prefer buying imported notebooks from the school canteen because they look "more professional."

Task:

As the Club's Director of Operations, prepare a strategy addressing the following:

- a. Identify factors that might be causing the "inconsistent finish" in your paper production process.
- b. Suggest quality control measures to ensure every notebook meets a specific standard before it is bound.
- c. Using the "**Four Ps**" of **Marketing**, explain how the club can reposition its notebooks to compete effectively with the imported ones in the canteen.
- d. Design a simple **Sales Promotion** message (slogan or advert) that highlights the unique "Value Addition" of using recycled materials.

Item 10: Field Trip Experience

During a field trip to "Kampala Modern Bottlers Ltd," a local fruit juice processing plant, students observed the entire value chain—from receiving raw passion fruits to the final branded bottles. The Production Manager highlighted that they recently switched from a "Job Production" method (small custom batches) to "Batch Production" to meet growing demand. However, the Marketing Manager mentioned that while production is high, they are struggling to penetrate the "Upcountry" (rural) markets due to high distribution costs and low brand awareness.

Task:

Based on your observations and the managers' briefings during field trips:

- a. Explain **two** advantages and **one** disadvantage of the company's shift from "Job Production" to "Batch Production."
- b. Identify **three** types of production costs the company incurs that could be classified as "Fixed Costs."
- c. Describe an appropriate **Channel of Distribution** the company should use to reach rural customers in Uganda without incurring excessive transport costs.
- d. Suggest **two** creative "Below-the-Line" marketing techniques (e.g., *direct methods like samples or local events*) the juice plant can use to build brand loyalty in new regions.

Item 11:

You are a Senior Six leaver managing 'Muko-Fresh Yogurt Producers' in Mbarara, specialized in natural yogurt. Currently, you produce 500 liters weekly, selling at UGX 6,000 per liter. Your weekly operational costs are: Milk (UGX 1,500,000), Sugar (UGX 200,000), Flavoring/Packaging (UGX 300,000), and casual labor (UGX 100,000). You wish to expand production to 1000 liters weekly but require funding.

Tasks:

- I. Outline the steps you will take to increase production to 1000 liters while maintaining quality control.

- II. Calculate the following for your current 500-liter weekly production:
- Total Variable Cost (TVC)
 - Gross Profit
 - Gross Profit Margin
 - Net Profit (Assuming fixed costs of UGX 100,000)
- III. Prepare a short, structured business plan (aimed at a bank) justification, focusing on the Marketing Strategy, Human Resource needs, and required Production Machinery.

Item 12: Field Study

During a field study trip to **Namanve Industrial Park**, Senior 6 students visited *Quality Plastics Ltd.* The students observed that the factory uses an **automated continuous production system** to manufacture jerrycans. They noticed a well-structured **layout** where raw materials (HDPE granules) move through extruders, blow-molding machines, and finally to the branding section. However, the plant manager mentioned that they often face **bottlenecks** when electricity fluctuates, leading to high levels of **wastage** and delayed deliveries to wholesalers.

Task:

Based on the observations made during the field trip, prepare a **Production Management Report** for the factory manager. Your report should:

- Identify the **type of production system** used and justify it with two reasons.
- Suggest the strategies the factory can implement to minimize **production wastage**.
- Design a **Production Schedule** for a single day to help the manager track output and meet delivery deadlines.

Item 13: School Business Club Project

The "**St. Mary's Investors Club**" recently concluded a six-month project of poultry farming (broilers) within the school farm. At the end of the project, the club treasurer presented the following financial summary:

- Total Revenue (Sales):** Shs 5,000,000

- **Cost of Goods Sold (Chicks, Feed, Meds):** Shs 3,200,000
- **Operating Expenses (Labor, Utilities):** Shs 800,000
- **Closing Stock:** Shs 400,000
- **Total Current Assets:** Shs 1,200,000
- **Total Current Liabilities:** Shs 1,500,000

The club members are happy with the sales but are confused as to why they don't have enough cash in the bank to start the next cycle immediately.

Task:

As the Club Chairperson, perform a **Financial Performance Evaluation** to present at the next club meeting. Your evaluation must:

- a) Calculate the **Net Profit Margin** and explain what it reveals about the club's expense management.
- b) Compute the **Acid Test (Quick) Ratio** and use it to explain why the club is struggling to pay its current debts.
- c) Recommend two **business planning adjustments** the club should include in their next project proposal to ensure better **liquidity**.

Item 14: Field Study Trip

During a field study trip to **Kalerwe Market**, Senior 6 students visited several fruit-processing enterprises. They observed a small-scale juice production unit, *Nature's Sip*, which produces organic mango and pineapple juice. The students noted that while *Nature's Sip* uses high-quality ingredients and eco-friendly packaging, it faces stiff competition from established brands like *Minute Maid* and cheaper, unbranded local juices sold in plastic bags. The entrepreneur mentioned that their biggest challenge is reaching customers outside the immediate neighborhood and convincing them to pay a premium price for "organic" quality.

Task:

Using the observations from your field trip to *Nature's Sip*, develop a **Market Positioning and Competition Strategy**. Your response should:

- a) Identify the **Target Market Segment** for *Nature's Sip* and justify your choice using two demographic or psychographic characteristics.

- b) Suggest three **Promotional Techniques** the entrepreneur could use to create brand awareness and distinguish their product from cheaper competitors.
- c) Analyze the business's **Competitive Advantage** by identifying one unique strength and explaining how it can be used to outsmart established brands.

Item 15: School Business Club Project

The "**Pride High School Business Club**" launched a "Customized School Stationery" project, selling notebooks and folders branded with the school logo. Initially, sales were high because students wanted the branded items. However, after three months, a local stationery shop near the school began selling similar branded notebooks at a lower price. The club's sales have dropped by 40%. The club members need to find a way to win back their customers and manage this new competitive threat.

Task:

As the Marketing Manager of your School Business Club, prepare a **Marketing Response Plan** to address the declining sales. Your plan must:

- a) Perform a **Competitor Analysis** by comparing the club's product and the local shop's product across two elements of the **Marketing Mix (4Ps)**.
- b) Propose some **Customer Care Strategies** that the club can implement to build long-term loyalty and prevent students from switching to the competitor.
- c) Design a simple **Advertising Message** (slogan or poster text) that emphasizes the club's "Unique Selling Proposition" (USP) to attract students back.

DIVINITY.

ITEM 1

Imagine you are a member of a small Christian community in Jerusalem around 35 AD shortly after Pentecost. Your group has just welcomed several new converts who are unfamiliar with Jewish traditions or the story of Jesus. Peter stands up to speak to them and you are tasked with helping him summarize the core message.

Task:

Based on the early Church's understanding of kerygma, what key elements should Peter include in his message to clearly proclaim the Good news of Jesus Christ to these believers. (25 scores)

ITEM 2

You are a Bishop in the early 4th century attending a regional Church council. Many Christian communities in your region are using different texts for teaching and worship; some include Gospels and letters from Paul, while others are using writings like the Gospel of Thomas or the Shepherd of Hermas. There is growing confusion among believers about which writings are truly authoritative and inspired.

Task:

As a church leader, what criteria would you use to help determine which books should be included in the New Testament canon and how would you explain the importance of having a unified set of scriptures to your congregation? (25 scores)

ITEM 3

You are a member of the early Christian community in Rome where Mark's gospel is being read aloud during a gathering. When a reader finishes a set of information with hidden meaning which seemed the readers didn't understand and Jesus fails to clearly give direct instructions.

Task:

- a) Based on the Gospel of Mark, why did Jesus use those sets of information with hidden meaning? (13 scores)
- b) How is the Gospel conveyed to Christians today? (12 scores)

END

GEOGRAPHY

Item

Uganda has a wealth of potential energy resources, including hydropower, solar, and biomass, yet the country's energy production remains insufficient to meet the increasing demand. Despite the abundant resources, the energy production from certain sources does not align with national sustainable standards. In response, the Ugandan government has introduced several energy policies aimed at improving energy production and sustainability. However, the effectiveness of these policies is still under scrutiny, with many questioning whether they adequately address the challenges faced in the energy sector.

Task

- A. Analyze the current state of energy production in Uganda, identifying at least three major energy resources and their potential.
- B. Evaluate the effectiveness of at least two government policies aimed at enhancing energy production and sustainability.
- C. Propose recommendations for improving energy production in Uganda, considering sustainability and the need to meet national demands.

Item 2

The glaciers of Mt. Rwenzori have significantly melted, leading to a drastic reduction in the flow of River Semliki. As a result, hydropower dams in the region are now operating at only 30% of their capacity, which has triggered frequent blackouts across the country. A climate activist has called for reparations from industrialized nations, blaming them for the increased climate change effects. In contrast, Uganda's Energy Minister is focusing on fossil fuels as a "quick fix" to the energy crisis, leading to concerns about the long-term impact on climate change and sustainability.

Task:

1. Evaluate the long-term consequences of prioritizing fossil fuels over renewable energy solutions in the context of climate change.
2. Suggest possible actions that the Ugandan government could take to balance immediate energy needs with sustainable environmental practices.