

S850/1

**INFORMATION AND
COMMUNICATION
TECHNOLOGIES**

PAPER 1

2 hours



UNITA EXAMINATION BOARD

Uganda advanced certificate of education

SUBSIDIARY INFORMATION AND COMMUNICATION TECHNOLOGIES

SUBSIDIARY ICT

SET 3

PAPER 1

2 HOURS

INSTRUCTIONS TO CANDIDATES

This paper consists of **two** parts: I and II

Answer only **two** items from this paper, choosing **one** item from each part

All responses should be presented in **formal** writing layouts

PART I

Answer **one** item from part

Item 1

A small startup, **EcoFusion Ventures**, specializes in eco-friendly home products and has been operating for six months. Despite having high-quality products, the business is struggling with **manual record keeping**, delayed communication with suppliers and customers, and inefficient marketing strategies. Sales records are maintained in physical notebooks, leading to frequent errors and lost data. Customer inquiries take days to respond to because communications rely on phone calls and personal emails. Marketing is mostly word-of-mouth and occasional flyers, limiting brand visibility.

The business owner has **little knowledge of ICT tools** and does not understand how technology can streamline operations, improve decision-making, or increase customer engagement. Adding to the complexity, the startup plans to scale rapidly within the next year, which will increase data volume, communication needs, and marketing demands. They are seeking expert guidance to **digitally transform their operations**, improve efficiency, and enhance brand visibility without disrupting ongoing business processes.

Task

As an ICT specialist, prepare a comprehensive digital report explaining how various ICT tools—such as spreadsheets, email, social media, cloud storage, CRM software, and collaboration platforms—can be strategically implemented to automate record keeping, streamline communication, optimize marketing, enhance customer engagement, and support the startup’s scalability and overall business productivity.

Item 2

A high school ICT laboratory, recently inspected by the district education authorities, has been found to be operating with **outdated software systems and several unlicensed applications** installed across most of its computers. The lab, which supports over 200 students weekly, is experiencing frequent system crashes, software incompatibility issues, and limited functionality when running modern educational programs. As a result, students are unable to complete assignments efficiently, particularly those requiring updated tools such as word processors, spreadsheets, programming environments, and internet-based applications.

Further investigation reveals that some software versions are no longer supported, exposing the systems to **security vulnerabilities**, while the use of unlicensed applications poses **legal and ethical risks** to the school. In addition, teachers face difficulties delivering lessons due to inconsistent software across machines, and there is no structured system for updates,

maintenance, or software management. The school administration is concerned about declining academic performance in ICT-related subjects, potential penalties from regulatory bodies, and the overall reputation of the institution. Consequently, they are seeking a well-researched and convincing proposal to guide decision-making on upgrading the lab's software infrastructure.

Task

As an ICT student, prepare a comprehensive proposal for the school administration that explains the importance of using updated and properly licensed software, and recommends suitable system software, application software, and utility software to improve performance, security, legal compliance, and the overall effectiveness of teaching and learning in the ICT laboratory.

PART II

*Answer **one** item from this part*

Item 3

Bazambalidde, a project manager in a fast-growing technology firm, oversees multiple teams handling software development, data analysis, and client-based projects. While the company has already integrated basic AI tools such as chatbots and simple machine learning models, it continues to face challenges in **managing complex project workflows, handling large volumes of data, forecasting project outcomes, and optimizing team productivity**. Delays in project delivery, inefficient allocation of resources, and limited data-driven decision-making have begun to affect the firm's competitiveness in a rapidly evolving digital market.

Bazambalidde is eager to explore how advanced **artificial intelligence and emerging technologies**—such as automation systems, predictive analytics, natural language processing, and cloud-based AI platforms—can transform her team's operations. However, she is also concerned about **ethical implications**, including data privacy, algorithmic bias, transparency, and the potential impact of automation on employees' roles. Recognizing your expertise as a well-known ICT specialist in the community, she contracts you to conduct an in-depth study of the company's operations and provide a strategic roadmap for adopting AI solutions effectively and responsibly. You are required not only to produce a **comprehensive research report** but also to prepare and deliver a **virtual presentation** to the company's Board of Governors, justifying the investment and outlining implementation strategies, risks, and expected outcomes.

Task

Prepare detailed research materials that will guide the company in adopting AI and emerging technologies by analyzing current challenges, proposing suitable AI-driven solutions for project management and data analysis, addressing ethical considerations, and developing both a comprehensive report and a structured virtual presentation to convince the Board of Governors to support the initiative.

Item 4

A rapidly expanding secondary school is experiencing significant challenges in managing student academic records due to its reliance on **manual and fragmented record-keeping systems**. With over 800 students enrolled across multiple classes and streams, teachers currently record grades and attendance in separate paper-based registers and spreadsheets, leading to inconsistencies, data loss, and delays in report generation. As a result, compiling end-of-term reports has become time-consuming and error-prone, and the administration struggles to accurately analyze student performance across subjects, classes, and academic terms.

The school administration has recognized the urgent need for a **centralized, reliable, and scalable database system** that can efficiently store and manage student information, including names, subjects, grades, and attendance records. In addition, the system must support **automated report generation**, allowing teachers and administrators to produce term reports, identify performance trends, compare subject outcomes, and monitor individual student progress over time. The system should also ensure **data accuracy, security, and ease of use**, considering that multiple users (teachers, administrators, and possibly students) will interact with it simultaneously. Given your expertise in ICT, the school has requested you to design a robust solution that addresses these challenges and supports informed academic decision-making.

Task

Develop a comprehensive school grading and performance tracking system that includes database design, data entry structures, attendance tracking mechanisms, and automated reporting features to efficiently manage student records and enable detailed performance analysis across subjects and academic terms.

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