



DIPLOMA UNIVERSITY EXAMINATIONS
SCHOOL OF MANAGEMENT AND LEADERSHIP
DIPLOMA COMMON UNIT

DCU 104: INTRODUCTION TO ICT AND ETHICS

DATE: 5TH AUGUST 2026

DURATION: 2 HOURS

**MAXIMUM MARKS:
(70)**

INSTRUCTIONS:

1. Write your registration number on the answer booklet.
2. **DO NOT** write on this question paper.
3. This paper contains **SIX (6)** questions.
4. Question **ONE** is compulsory.
5. Answer any other **FOUR** questions.
6. Question **ONE** carries **30 MARKS** and the rest carry **10 MARKS** each.
7. **Write all your answers in the Examination answer booklet provided.**

QUESTION ONE

Read the Case Study below carefully and answer all the questions that follow

Fahari SACCO, a medium-sized savings and credit cooperative society based in Kisumu, Kenya, has served over 12,000 members for the past 20 years. The SACCO operates across three branches and mainly serves teachers, nurses, and small-scale traders. For years, it relied entirely on manual, paper-based processes for loan applications, member registration, and financial reporting. Senior management began to notice increasing complaints from members about slow loan processing, long queues, and difficulty accessing account information. A younger competitor SACCO with a mobile app and online portal was attracting new members away from Fahari.

After a board retreat, Fahari SACCO's management resolved to undergo a comprehensive ICT transformation. They began by replacing manual records with a database management system (DBMS) to store and manage member data. High-speed internet was installed at all three branches, and a Local Area Network (LAN) was set up to connect all computers within each branch. A Wide Area Network (WAN) was then used to link the three branches together. A cloud-based member portal was developed, allowing members to check balances, apply for loans, and receive statements via email. Mobile money integration with M-Pesa enabled members to make deposits and repayments directly from their phones.

To protect member data, the ICT department implemented firewalls, data encryption, and a strict password policy. Regular data backups were introduced using an incremental backup strategy, supplemented by offsite vaulting. The SACCO also adopted biometric authentication at its branches to prevent unauthorized access. Staff were trained in cybersecurity

awareness, including how to recognize phishing emails and social engineering attacks. Plagiarism-detection and audit trail software were deployed to ensure ethical and transparent use of the system.

Not all transitions went smoothly. Several older staff members struggled with the new systems and resisted the changes, claiming the technology was "too complicated." Some were worried about job security. Conflicts emerged between the ICT department and the Loans department over the new digital loan workflow, with loan officers arguing that the automated credit scoring system was too rigid and did not account for member relationships. The management responded by organizing workshops, establishing open forums, and setting up a joint ICT-Loans task force to resolve the disputes.

Within one year, Fahari SACCO recorded a 40% reduction in loan processing time, a significant decline in data entry errors, and a notable increase in new member registrations — attributed largely to the mobile portal. However, management identified new challenges: keeping software up to date, training staff on new features, addressing privacy concerns raised under the Data Protection Act, and preparing for emerging technologies such as artificial intelligence for fraud detection.

Required:

- a)** Identify and analyze THREE challenges Fahari SACCO faced before its ICT transformation. For each challenge, explain the specific negative impact it had on the SACCO's operations and its members.

[10 Marks]

- b)** Discuss the ICT infrastructure components installed by Fahari SACCO (LAN, WAN, cloud portal, and mobile money integration). For each component, explain its function and justify why it was appropriate for the SACCO's context. **[6 Marks]**

- c)** The case mentions the use of firewalls, encryption, biometric authentication, incremental backups, and offsite vaulting. For each of these five data security measures, explain how it protects Fahari

SACCO's data and systems from a specific threat.

[5 Marks]

- d) Analyze the sources of resistance encountered during the ICT transformation at Fahari SACCO. Propose TWO practical conflict resolution strategies management could use to address the conflict between the ICT department and the Loans department.

[5 Marks]

- e) Assess the outcomes of the ICT transformation after one year. Identify TWO benefits achieved and TWO new challenges that emerged, and recommend how management should address the new challenges going forward. **[4 Marks]**

QUESTION TWO

- a) Trace the evolution of computers from the First Generation to the Fifth Generation. For each generation, state ONE key technology used, ONE advantage it introduced over the previous generation, and give ONE example of a computer from that era.

[5 Marks]

- b) A county government is evaluating whether to continue using its current batch processing payroll system or switch to a real-time interactive processing system. Compare the TWO data processing modes by identifying TWO advantages and ONE disadvantage of each, and then recommend which mode is more suitable for payroll processing and justify your recommendation. **[5 Marks]**

QUESTION THREE

- a) A small hospital is setting up a new computer lab for its records and billing department. Advise the hospital on FOUR hardware components it must procure, specifying for each

- (i) The category of hardware it falls under input, output, processing, or storage

[1.5 Marks]

- (ii) Its specific function in the hospital context

[1.5 Marks]

- (iii) (ONE criterion from the hardware selection guidelines that makes it an appropriate choice.

[2 Marks]

- b) The hospital's management is debating whether to use open-source software (e.g., LibreOffice, MySQL) or proprietary/off-the-shelf software (e.g., Microsoft Office, Oracle) for its information system. Present a balanced evaluation by discussing TWO advantages and ONE disadvantage of EACH option. Conclude with a reasoned recommendation suitable for the hospital's context.

[5 Marks]

QUESTION FOUR

- a) Distinguish between PRIMARY and SECONDARY storage memory by discussing FOUR differences. In your answer, give a practical example of each type of memory and explain a scenario in which each would be used during the normal operation of a computer.

[5 Marks]

- b) A logistics company uses multiple network topologies across its offices. Head office uses a Star topology, regional offices use a Bus topology, and field agents communicate via a Mesh wireless network. For each of the THREE topologies:

- (i) Describe how data flows across it

[1.5 Marks]

- (ii) State ONE advantage and ONE disadvantage specific to the company's use case

[2 Marks]

- (iii) Explain what would happen if a central connection point or node failed.

[1.5

Marks]

QUESTION FIVE

- a) A newly hired accounts clerk at a microfinance firm receives an email appearing to come from the CEO, requesting her to urgently transfer Ksh 500,000 to a new supplier's account. She almost complies before a colleague intervenes. (i) Identify the type of cyber crime or computer crime illustrated in this scenario. (ii) Explain the mechanism by which this attack works. (iii) Propose THREE specific cybersecurity measures the firm should implement to prevent such attacks in future.

[5 Marks]

- b) A busy data entry officer in a government ministry reports chronic wrist pain, severe eye strain, and lower back discomfort after just six months on the job.

- i. Identify the specific ergonomic conditions likely causing each of the three complaints.

[1.5 Marks]

- ii. For each condition, recommend TWO practical ergonomic precautionary measures based on recognized ergonomic standards.

[1.5 Marks]

- iii. Explain how the ministry could redesign the workstation to comply with ergonomic guidelines.

[2 Marks]

QUESTION SIX

- a) Critically Evaluate the Measures Adopted to Combat the Unethical Use of ICT

[4 Marks]

- b) Fahari SACCO (from the Case Study in Question One) is considering migrating its entire member database and loan management system to a cloud computing platform. A board member raises concerns about data privacy and reliability. Discuss THREE specific benefits and TWO specific risks of this migration for Fahari SACCO.

[3 Marks]

- c) Two senior officers in an IT department have an ongoing interpersonal conflict over who should lead a critical system migration project. The conflict has begun affecting team morale and delaying the project.

- (i) Identify the type of conflict illustrated and explain its likely cause.

[1.5

Marks]

- (ii) Recommend THREE specific techniques from the conflict management framework that management should apply to resolve this conflict constructively.

[1.5 Marks]