THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATION COUNCIL
GRADE A TEACHERS' CERTIFICATE EXAMINATION

635   **INFORMATION AND COMMUNICATION TECHNOLOGY**

Time: 3 Hours.   **ANSWER**   **Year: 2000**

Instructions

1.   This paper consists of sections **A**, **B** and **C.**

2.   Answer **all** questions in sections A and **two (2)** questions from each sections B and C.

3.   Mobile phones and unauthorized materials are **not allowed** in the examination room.

4.   Write your **Examination Number** on every page of your answer **booklet(s).**

SECTION A (40 Marks)

Answer all questions.

1. State four differences between system software and application software.

   System software runs the computer and manages hardware resources, for example operating systems and device drivers, while application software helps the user perform specific tasks like word processing or browsing the web.

   System software starts when the computer boots and provides a platform for other programs, whereas application software runs on top of that platform only when the user launches it.

   System software focuses on core functions such as memory, process, and device management, while application software focuses on end user functions such as editing documents, analyzing data, or designing graphics.

   System software typically comes preinstalled or is required for basic operation, while application software is optional and installed according to user needs.

2. Mention four devices used for inputting information into a computer.

   A keyboard is used to enter text and commands into the computer by pressing keys arranged in a standardized layout.

   A mouse allows the user to move a pointer and select, drag, or activate on-screen items with clicks.

   A scanner captures printed text or images and converts them into digital form that software can process or store.

   A microphone captures audio input, which can be used for voice commands, recording, or communication.

3. Outline four advantages of e-learning in secondary schools.

   E-learning expands access to learning resources, enabling students to study beyond classroom walls and times through online platforms and open educational resources.

   E-learning supports inclusion for diverse learners by offering assistive technologies, different content formats, and flexible pacing.

Digital platforms strengthen learning management, letting schools track progress, assess performance, and personalize learning pathways.

Connectivity fosters collaboration, allowing students to interact with peers and experts, share knowledge, and participate in authentic tasks online.

4. Explain four possible reasons why a computer may fail to start after being switched on.

A faulty or insufficient power supply can prevent the system from powering up, so no fans or lights turn on. Motherboard indicators and PSU tests are common diagnostics.

Incorrectly seated RAM or other loose components can stop the system from completing power-on self-test, producing beeps or status LEDs. Reseating memory and cables is a first check.

Firmware or boot configuration problems may block startup even when power is present, requiring BIOS or UEFI checks and startup repair.

A failed system drive or corrupted operating system can also stop boot, sending the machine into recovery or displaying boot errors until the OS is repaired or reinstalled.

5. State four examples of storage devices used in ICT.

Hard disk drives provide magnetic storage for large volumes of data in desktops and servers.

Solid-state drives provide faster storage using flash memory with no moving parts, improving boot and load times.

USB flash drives are portable, solid-state devices useful for transferring files between computers.

Secure Digital cards are removable flash media common in cameras and mobile devices for data storage.

6. Mention four features of a good database management system.

It enforces data integrity and consistency through constraints and transaction control so that stored data remains accurate.

It provides strong security, including authentication, authorization, and sometimes encryption, to protect sensitive data.

It supports concurrency control so many users can access and modify data safely without conflicts.

It offers backup and recovery mechanisms that allow restoration of data after failures or errors.

7. Give four disadvantages of using oral communication in business transactions.

   Oral communication lacks a permanent record, so parties cannot easily prove what was agreed if disputes arise.

   It is prone to misinterpretation because tone, speed, or language barriers can change the intended meaning.

   Complex or detailed information is hard to convey accurately by speech alone, which can lead to errors in execution.

   Information shared orally can be forgotten or recalled inconsistently, reducing reliability for formal transactions.

8. Explain four benefits of using ICT in the banking sector.

   Digital payments increase efficiency and speed for customers and banks, lowering costs while expanding reach and inclusion.

   Real-time fast payment systems support instant transfers, improving customer experience and enabling new services.

   Mobile and online channels expand access to financial services for underserved populations, especially in developing regions.

   Improved data systems and secure platforms help banks manage risk and compliance more effectively while offering innovative products.

9. List four characteristics of reliable information.

   Accuracy means the information reflects the true values or events without errors.

   Completeness means all necessary data is present so that decisions are not based on partial facts.

   Timeliness means information is up to date so actions are based on current conditions.

   Relevance means the information fits the decision context and helps answer the question at hand.

10. State four reasons why teachers need ICT literacy in their profession.

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Teachers need ICT literacy to integrate technology with pedagogy and subject content, aligning teaching with national ICT in education priorities.

Digital competence allows teachers to design, deliver, and assess learning with appropriate tools while supporting classroom management and administration.

ICT literacy helps teachers model safe, ethical, and effective technology use for students, building learners' digital skills.

Ongoing ICT upskilling supports professional development and collaboration with peers through digital communities and resources.

SECTION B (30 Marks)
Answer any two questions from this section.

11. Discuss five challenges facing the use of ICT in public secondary schools.

Limited infrastructure is a core challenge, including insufficient devices, unreliable internet, and unstable power, which constrain consistent classroom use.

Many teachers need more training and time to integrate technology meaningfully, so confidence and competence remain barriers.

High costs for procurement, connectivity, and maintenance limit scale, especially in rural or under-resourced schools.

Policy gaps and uneven implementation reduce impact, because schools may lack clear strategies, standards, or support for integration.

Inequities widen the digital divide, with urban schools advancing faster than rural peers, which undermines equal learning opportunities.

12. Explain five advantages of using internet services in higher education institutions.

The internet provides access to digital libraries, journals, datasets, and open resources, which strengthens teaching and research.

Online platforms enable flexible and blended learning models that extend participation beyond campus and improve inclusion.

Collaboration tools connect students and faculty across institutions and countries, supporting group projects and knowledge exchange.

Cloud and web services support course management, assessment, and analytics, improving academic and administrative decisions.

Connectivity enhances career services and innovation ecosystems by linking learners with employers, incubators, and professional networks.

13. Discuss five roles of ICT in promoting e-government services.

ICT digitizes public services, improving access and efficiency for citizens and businesses through user-centric online portals.

Digital public infrastructure, including digital identity and payments, enables secure transactions such as permits, taxes, and benefits.

Open data and digital engagement tools increase transparency and participation, strengthening public trust.

Automation and data sharing across agencies reduce paperwork and processing time, freeing staff for higher-value work.

Resilient digital channels help governments maintain service delivery during crises, supporting continuity and responsiveness.

14. Describe five security risks that threaten ICT systems in schools.

Phishing and social engineering target staff and students to steal credentials, often leading to account compromise and breaches.

Ransomware has frequently hit K-12 institutions, encrypting data and disrupting learning while threatening to leak sensitive records.

Weak or reused passwords and lack of multifactor authentication make unauthorized access much easier for attackers.

Unpatched systems and devices expose known vulnerabilities, which underscores the need for structured patch management.

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Inadequate risk management and policy frameworks leave gaps in prevention and response, increasing systemic exposure.

SECTION C (30 Marks)
Answer any two questions from this section.

15. Critically assess the impact of ICT on students' learning habits, giving five points with examples.

ICT expands access to resources and support, for example recorded lessons, forums, and simulations, which helps learners review and practice beyond class time.

At the same time, digital distraction is a real risk, since device notifications and multitasking can reduce attention and are associated with lower test performance.

Note-taking on laptops can promote shallow transcription rather than processing, so in some cases handwritten notes lead to stronger conceptual understanding.

Collaborative tools reshape study habits toward group work and peer feedback, which can deepen understanding when guided by clear tasks and rubrics.

Overall impact depends on guided, purposeful use aligned with pedagogy, since technology by itself does not guarantee better learning.

16. Evaluate five ways in which poor ICT policies can hinder national development.

Lack of clear digital government strategy slows service digitization, which reduces efficiency and citizen access to essential services.

Weak policies on connectivity and digital inclusion widen the digital divide, limiting participation in the digital economy.

Unclear data governance and privacy rules undermine trust, which discourages adoption of online services and investment.

Fragmented standards for digital identity and payments impede scale, preventing interoperable services across sectors.

Insufficient digital skills frameworks for teachers and the workforce limit human capital development and innovation.

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17. With examples, analyse five consequences of over-dependence on cloud storage systems.

Service outages at major providers can disrupt access to files, platforms, and apps for many organizations at the same time, as seen in large AWS incidents.

Vendor lock-in raises switching costs and reduces flexibility, so a single provider problem can have outsized operational impact.

Misconfiguration of cloud storage, such as open buckets or containers, can expose sensitive data to the public internet and lead to breaches.

Over-reliance on connectivity can slow recovery, because restoring large datasets over limited bandwidth may take days during an incident.

Account issues or provider actions can lock users out or delete data unexpectedly, which is why independent backups and the 3-2-1 rule are recommended.

18. Justify five reasons why information is considered a key resource for community development.

Accurate data enables planning, for example on population, health, and education needs, so leaders can allocate resources effectively.

Timely information supports emergency preparedness and response, which helps communities act early during floods, droughts, or disease outbreaks.

Open and reliable information increases transparency and accountability in local governance, which builds trust and improves service delivery.

Market information, such as prices and weather, empowers farmers and small businesses to make better decisions and increase incomes through digital channels.

Accessible information reduces inequality by connecting citizens to public services, digital payments, and social programs that drive inclusion.

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