THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL

GRADE A TEACHERS' CERTIFICATE EXAMINATION

635   **INFORMATION AND COMMUNICATION TECHNOLOGY**

Time: 3 Hours.   **ANSWER**   **Year: 2006**

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. List four uses of ICT in transportation systems.

   ICT is used in traffic management through systems such as traffic lights and surveillance cameras that control vehicle flow and reduce congestion.

   ICT is used in ticketing and booking systems, allowing passengers to book and pay for tickets online for buses, trains, and airlines.

   ICT supports navigation through GPS systems that guide drivers and help logistics companies plan routes efficiently.

   ICT is used in vehicle tracking systems that monitor fleet movement and ensure safety and security of goods and passengers.

2. Mention four differences between RAM and ROM.

   RAM is temporary storage that holds data only when the computer is powered on, while ROM is permanent storage that retains data even when power is off.

   RAM is volatile, meaning its contents are lost when the system shuts down, while ROM is non-volatile and preserves its contents permanently.

   RAM is used for running programs and processing tasks, while ROM stores essential instructions such as the BIOS needed for booting.

   RAM is usually larger in size and faster, while ROM is smaller in size and slower in speed.

3. Give four examples of utility software.

   Antivirus software is used to detect and remove malicious programs.

   Backup software is used to create copies of data to prevent loss during system failures.

   Disk cleanup tools are used to remove unnecessary files and free up storage space.

   Compression software is used to reduce the size of files for easier storage and sharing.

4. State four advantages of online learning platforms.

   They provide flexibility, allowing students to learn at their own pace and schedule.

   They reduce costs since learners avoid travel and accommodation expenses.

   They offer a wide variety of resources such as videos, e-books, and simulations that improve understanding.

   They connect learners and instructors from different locations, promoting global interaction and collaboration.

5. Mention four disadvantages of e-waste.

   E-waste contains toxic substances such as lead and mercury which pollute the environment.

   Improper disposal of e-waste poses health risks to people who handle it without protective gear.

   E-waste contributes to land pollution as discarded devices accumulate in dumpsites.

   Recycling e-waste requires advanced technology that is costly and not widely available in many countries.

6. List four ICT tools that enhance collaborative learning.

   Discussion forums allow learners to exchange ideas and ask questions online.

   Video conferencing tools like Zoom and Google Meet enable real-time virtual classrooms.

   Cloud storage tools like Google Drive and Dropbox allow students to share and work on files together.

   Learning management systems like Moodle and Blackboard provide platforms for assignments, quizzes, and group projects.

7. Outline four functions of Management Information Systems (MIS).

   MIS collects data from various sources within an organization for analysis.

   It processes data into useful information for decision making.

   It provides timely reports that support planning and management activities.

   It helps in monitoring and evaluating organizational performance by tracking key indicators.

8. Mention four challenges of using biometric systems.

Biometric systems are costly to install and maintain, making them less affordable for small organizations.

They may face accuracy issues, for example fingerprint scanners may fail if the finger is dirty or injured.

They raise privacy concerns because biometric data is very sensitive and can be misused if not protected.

They require reliable electricity and internet, which may be a challenge in some regions.

9. State four benefits of using ICT in commerce.

ICT allows businesses to market products online through websites and social media.

It enables e-commerce, allowing buying and selling across different locations without physical shops.

It improves customer service through chatbots, emails, and online support platforms.

It enhances business efficiency by automating processes such as invoicing and inventory management.

10. Give four reasons why ICT literacy should be taught from early childhood.

Teaching ICT early prepares children for future careers where digital skills are essential.

It helps children to adapt quickly to technological changes in society.

It improves creativity and problem-solving through exposure to educational software and digital tools.

It promotes responsible use of technology by teaching children good online practices from a young age.

SECTION B (30 Marks)

Answer any two questions from this section

11. Explain five challenges of implementing e-government systems in Africa.

A major challenge is inadequate ICT infrastructure, especially in rural areas where internet connectivity and electricity are limited, making it hard for citizens to access online services.

High implementation and maintenance costs also hinder adoption. Many African governments have limited budgets and struggle to finance large-scale digital projects.

There is a lack of ICT skills among government employees and citizens, which prevents effective use of e-government services. Training is often inadequate or unavailable.

Cybersecurity threats are a serious problem since government databases contain sensitive information that can be targeted by hackers and fraudsters.

Cultural and political resistance slows down adoption. Some officials fear losing power and control when processes become transparent, while citizens may resist changes due to lack of trust.

12. Discuss five ways ICT improves research and innovation.

ICT provides access to digital libraries, databases, and online journals where researchers can gather valuable information without geographical limitations.

It enables collaboration through online platforms where researchers from different parts of the world can work together on shared projects.

ICT supports advanced data analysis using software tools that process large datasets, helping researchers to identify patterns and make discoveries.

It allows simulation and modeling of real-life scenarios, which saves time and resources compared to physical experiments.

ICT facilitates fast communication through email, video conferencing, and social media, which allows ideas and findings to be shared quickly with the global community.

13. Explain five measures of ensuring cybersecurity in organizations.

Organizations should use strong passwords and authentication methods to prevent unauthorized access to systems.

They should regularly update software and install patches to fix security vulnerabilities.

Firewalls and antivirus software should be installed and maintained to block malware and attacks.

Employees should be trained on cybersecurity awareness to recognize phishing, scams, and other threats.

Data should be encrypted when stored or transmitted, ensuring that even if it is intercepted, it cannot be misused.

14. Analyse five roles of ICT in tourism and hospitality.

ICT provides online booking platforms where customers can reserve hotels, flights, and tours easily.

It enables digital marketing through websites, social media, and email, which attract tourists globally.

ICT improves customer service by using chatbots, emails, and apps that provide instant assistance.

It enhances management systems in hotels, such as electronic check-in/check-out, room service requests, and digital payments.

ICT supports virtual tourism through 3D videos and virtual reality, allowing potential tourists to explore destinations before visiting physically.

SECTION C (30 Marks)

Answer any two questions from this section

15. Critically evaluate five impacts of ICT on freedom of expression.

ICT has expanded freedom of expression by providing social media platforms where individuals can share opinions globally. However, it has also led to cases of hate speech and misinformation.

It allows marginalized groups to voice their concerns and participate in discussions, but at the same time, governments may monitor and censor such activities.

ICT has reduced barriers to publishing, since anyone can write blogs or post videos, but this also increases the spread of unverified content.

It has made global communication possible, allowing people to discuss politics, human rights, and social issues, but in some countries this freedom is restricted through surveillance.

ICT has increased citizen journalism, where ordinary people report news through digital platforms. However, lack of regulation sometimes leads to biased or false reporting.

16. Assess five contributions of ICT in bridging gender gaps in education.

ICT provides online learning opportunities, which allow both boys and girls to study from home, especially in areas where cultural barriers limit girls' attendance at school.

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It offers access to educational resources like e-books and tutorials, giving equal opportunities for both genders to access knowledge.

ICT promotes awareness campaigns about gender equality through social media and online platforms, influencing communities to support girls' education.

It creates mentorship platforms where girls can interact with female role models and professionals, motivating them to pursue education and careers.

ICT reduces geographical barriers by connecting learners with teachers and institutions globally, ensuring that girls in rural areas access the same education as boys.

17. With practical examples, analyse five negative effects of overreliance on ICT in workplaces.

Overreliance on ICT can lead to job loss due to automation. For example, automated teller machines (ATMs) have reduced the need for human bank tellers.

It can cause reduced social interaction as employees focus more on digital communication like emails and chats instead of face-to-face discussions.

It creates vulnerability to system failures. If networks or servers go down, business operations are interrupted, leading to losses.

It increases exposure to cyber threats such as hacking and phishing. For example, organizations may lose sensitive data when systems are attacked.

It can cause health problems such as eye strain, back pain, and stress from sitting too long and working on computers daily.

18. Justify five reasons why ICT policies are necessary for national growth.

ICT policies guide the development of infrastructure, ensuring that resources are invested effectively in expanding networks and connectivity.

They promote innovation and entrepreneurship by creating a regulatory framework that supports startups and investors in the ICT sector.

ICT policies ensure security and privacy of data, protecting citizens and organizations from cyber threats.

They promote equal access to ICT services, reducing the digital divide between urban and rural populations.

ICT policies support integration of technology in key sectors such as education, health, and commerce, leading to overall economic and social growth.

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