THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL

GRADE A TEACHERS' CERTIFICATE EXAMINATION

635 INFORMATION AND COMMUNICATION TECHNOLOGY

Time: 3 Hours. **ANSWER** **Year: 2008**

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 examples of storage devices.

   Hard disk drives are the most common storage devices used in computers and servers to permanently store large amounts of data. They are reliable for keeping operating systems, software, and user files over long periods of time.

   Flash drives, also known as USB drives or pen drives, are portable devices that allow users to transfer files easily between computers. They are small, lightweight, and convenient for everyday data sharing.

   Compact discs (CDs) are optical storage devices that can store data such as music, documents, and videos. Although less used today, they remain important for media distribution and backups.

   Memory cards are small storage devices commonly used in cameras, smartphones, and tablets. They are effective for storing photos, videos, and mobile applications due to their compact size.

2. Mention four uses of ICT in sports.

   ICT is used for performance analysis by recording athletes during training or competitions and replaying the footage for review. This helps coaches and players identify strengths, weaknesses, and areas for improvement.

   It is used in officiating through technologies such as Video Assistant Referee (VAR) and goal-line technology. These systems assist referees in making accurate and fair decisions during matches.

   ICT is applied in training through wearable devices and fitness trackers. These devices monitor heart rate, speed, and calorie burn, providing real-time feedback that helps athletes maintain fitness levels.

   It is also used in broadcasting and ticketing. Fans can buy tickets online and watch live games streamed via digital platforms, which makes sports more accessible globally.

3. State four characteristics of cloud computing.

   Cloud computing provides on-demand access, meaning users can access applications and files whenever they need them without depending on physical storage devices.

It is scalable, allowing users or businesses to increase or decrease storage and computing power depending on their needs, without buying new equipment.

Cloud computing supports accessibility since data can be accessed from any location using the internet. This makes it ideal for people working remotely or on the move.

It is cost-effective because users pay only for the resources they use. This saves businesses from investing in expensive servers and maintenance costs.

4. Give four examples of ICT input devices.

A keyboard is an input device used to type letters, numbers, and commands into a computer. It is essential for word processing, coding, and data entry.

A mouse is used for pointing, clicking, and selecting objects on a screen. It allows easier navigation and interaction with computer applications.

A scanner is used to convert paper documents, photos, or images into digital formats. This makes it possible to store physical materials in computers for easy retrieval.

A microphone is used to input sound into a computer. It is commonly used for recording, voice recognition software, and online communication.

5. Mention four disadvantages of relying on social media.

Social media can spread misinformation and fake news quickly. Since anyone can post without verification, false information may mislead people and cause panic.

It can cause addiction, as people may spend excessive hours online scrolling through content. This addiction reduces productivity at work and study time for learners.

Social media exposes users to cyberbullying and harassment. Many people suffer emotional stress, depression, or anxiety from harmful comments and attacks online.

It reduces physical social interaction, as people prefer chatting online rather than meeting face-to-face. This weakens real-life communication and relationship-building skills.

6. List four benefits of ICT in distance learning.

ICT enables learners to access education from any location, removing geographical barriers. This is especially useful for rural students or those studying abroad.

It provides flexibility, as learners can study at their own pace and time, balancing education with work or family responsibilities.

It offers access to diverse resources such as e-books, recorded lectures, and online tutorials, which broaden students' knowledge.

It reduces costs by cutting down expenses on travel, accommodation, and printed books, making education more affordable.

7. Outline four limitations of using ICT in healthcare.

The cost of acquiring ICT equipment such as MRI machines, telemedicine software, and hospital databases is very high. Many developing countries cannot afford them.

System failures such as software crashes or power outages can interrupt hospital operations and delay treatment. This puts patients at risk.

Lack of ICT skills among healthcare workers makes it difficult to maximize the benefits of health technologies. Training programs are often inadequate.

Concerns about patient data privacy and hacking discourage full adoption of ICT in healthcare, since sensitive health information can be misused if not well protected.

8. Mention four applications of ICT in agriculture.

ICT is used in weather forecasting through applications and radio broadcasts that inform farmers about rainfall and drought patterns. This helps them plan farming activities.

It supports precision farming where sensors, drones, and GPS are used to measure soil moisture, crop health, and fertilizer needs. This increases productivity.

ICT enables market information systems through mobile phones where farmers receive updates on product prices and demand. This helps them sell crops at the right time.

It provides mobile applications that offer farming advice, pest control tips, and connections to suppliers and buyers, improving farming efficiency.

9. State four differences between analogue and digital signals.

Analogue signals are continuous, representing data in waveforms, while digital signals are discrete, representing data in binary numbers of 0s and 1s.

Analogue signals are more prone to noise and interference, which affects their quality. Digital signals are less prone to noise, making them clearer and more reliable.

Analogue signals are used in older devices like traditional radios, while digital signals are used in modern devices like computers, DVDs, and smartphones.

Analogue systems are less efficient in storage and transmission, while digital systems store and transmit information faster and more efficiently.

10. Give four reasons why ICT training is important for teachers.

ICT training equips teachers with skills to integrate technology into teaching, making lessons more interactive and effective.

It helps teachers use e-learning platforms to reach more students, especially in blended or online learning environments.

It enables teachers to prepare engaging lessons with multimedia tools such as videos, animations, and digital presentations.

It ensures teachers stay updated with modern teaching methods and technological trends in education, preparing learners for the digital world.

SECTION B (30 Marks)

Answer any two questions from this section

11. Discuss five roles of ICT in promoting transparency in governance.

ICT promotes transparency by providing e-governance platforms where government services and information are made available online. Citizens can apply for permits, pay taxes, or check government records without having to go through middlemen, which reduces corruption.

It enables online publication of government budgets, contracts, and policies. When such information is accessible to the public, it becomes easier for people to monitor how resources are being used, increasing accountability.

ICT improves record-keeping by storing data in digital systems that are difficult to manipulate compared to paper-based records. This ensures that information remains accurate and reliable, preventing fraudulent activities.

It facilitates citizen participation through social media, government websites, and online surveys. Citizens can raise concerns, give feedback, and demand accountability in a more direct way than before.

ICT reduces human interference in administrative tasks by automating processes. For example, electronic tendering systems minimize the chances of bribery by ensuring fairness in awarding contracts.

12. Analyse five ways ICT has transformed the entertainment industry.

ICT has introduced streaming platforms like Netflix, YouTube, and Spotify, where movies, music, and shows are accessed instantly. This has replaced traditional CDs and DVDs, making entertainment more accessible.

It has created online gaming platforms that connect players across the world. Games can now be played in real time with competitors from different countries, making the industry more interactive.

ICT supports digital content creation through editing software for music, video, and animation. Musicians, filmmakers, and artists now produce high-quality content with relatively low costs.

Entertainment is now available on mobile devices, meaning people can access their favorite shows, music, and games anywhere and at any time. This has increased the consumption of digital entertainment.

ICT has globalized the entertainment industry. Artists share their work online and reach international audiences, increasing revenue and cultural exchange.

13. Explain five challenges of implementing ICT projects in poor economies.

High implementation costs are a major challenge. Poor economies often struggle to afford the infrastructure such as internet cables, data centers, and equipment needed for ICT projects.

Limited electricity supply makes it difficult to sustain ICT systems. Frequent blackouts disrupt services and discourage investment in technology.

There is a shortage of skilled ICT professionals who can design, implement, and maintain ICT projects. This results in dependence on foreign experts, which is expensive.

Cultural resistance is another problem. Some people in poor economies are hesitant to adopt technology due to fear of change, lack of awareness, or preference for traditional methods.

Weak cybersecurity laws expose ICT projects to hacking, fraud, and misuse of data. Without proper legal frameworks, ICT adoption becomes risky and less effective.

14. Describe five reasons why ICT is vital in international business.

ICT enables instant communication between companies and partners across the globe through emails, video conferencing, and instant messaging. This reduces delays and improves decision-making.

It supports e-commerce, where businesses sell products and services worldwide through online platforms like Amazon and Alibaba, allowing them to reach larger markets.

ICT improves logistics and supply chain management by using tracking systems to monitor goods as they move across borders. This increases efficiency and reduces losses.

It enhances marketing through digital advertising, social media, and websites that allow businesses to promote products globally with relatively low costs.

ICT supports secure international payments through online banking and electronic transfer systems. This ensures smooth financial transactions across countries.

SECTION C (30 Marks)

Answer any two questions from this section

15. Critically evaluate five negative impacts of ICT on interpersonal communication.

ICT has reduced face-to-face interactions since many people now prefer chatting online rather than meeting physically. This weakens personal relationships and reduces the emotional connection people develop in direct communication.

It causes misunderstandings because digital communication lacks tone, facial expressions, and body language. Messages may be misinterpreted, leading to conflicts and confusion.

Overuse of ICT in communication can weaken family bonds. For example, family members may spend more time on phones or computers instead of engaging in meaningful conversations at home.

ICT exposes individuals to cyberbullying and harassment on social media platforms. Such negative interactions can damage trust and harm relationships among peers.

Overreliance on ICT promotes social isolation. People may become so dependent on virtual communication that they lose important social skills needed in face-to-face conversations.

16. With practical examples, assess five contributions of ICT to sustainable agriculture.

ICT helps farmers monitor soil conditions through sensors that measure moisture, pH, and nutrients. This supports precise use of water and fertilizers, preventing wastage and improving yields.

It provides accurate weather forecasting through mobile applications, helping farmers plan planting and harvesting at the right time. For instance, rainfall alerts can reduce crop losses.

ICT connects farmers to markets using mobile platforms like Esoko in Africa. Farmers can check commodity prices and sell products directly to buyers, reducing exploitation by middlemen.

It promotes efficient irrigation through automated systems that supply water only when needed. This reduces water consumption and promotes environmental sustainability.

ICT supports agricultural research by giving farmers access to online databases, where they can learn new techniques and adopt modern farming practices that increase sustainability.

17. Analyse five ways ICT literacy reduces poverty in developing countries.

ICT literacy enables individuals to access online job opportunities such as freelancing, remote work, and digital entrepreneurship. These opportunities increase income levels and reduce unemployment.

It helps small businesses market their goods and services through websites and social media. For example, artisans can use Facebook and Instagram to reach customers beyond their local communities.

ICT literacy provides access to financial services such as mobile banking and digital wallets. These services allow people to save, borrow, and transact securely, supporting income growth.

It gives learners access to online education and training platforms. This equips them with skills that increase their employability and career opportunities.

ICT literacy empowers communities with information on health, human rights, and development. With such knowledge, people can make informed decisions that improve their quality of life and reduce poverty.

18. Justify five reasons why digital ethics must be observed in ICT use.

Digital ethics protect personal privacy by ensuring that sensitive data such as medical and financial records are not misused or exposed without consent.

They promote honesty in online communication by discouraging the spread of misinformation, plagiarism, and fake news, which can harm individuals and society.

They protect intellectual property by ensuring fair use of digital content. Observing digital ethics reduces piracy and respects the rights of creators and innovators.

They encourage responsible use of social media by discouraging cyberbullying, harassment, and hate speech, which promotes safer online spaces.

Digital ethics build trust in ICT systems. When people know that technology is used fairly and responsibly, they are more likely to adopt and support it in business, education, and government.